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Contributors

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DEPARTMENT OF HEALTH AND SOCIAL SECURITY

Working Group on Back Pain

Report to
Secretary of State for Social Services
Secretary of State for Scotland

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Working Group on Back Pain

Report to
Secretary of State for Social Services
Secretary of State for Scotland

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Summary

S.1 The Working Group sought evidence by inviting submissions from interested organizations and by advertising. Meetings were also held with the General Medical Council and with representatives of heterodox practice, including osteopaths, chiropractors, and acupuncturists (Section 2).

S.2 The Present Situation

Back pain is widespread, unpleasant, and at times serious, and it imposes a considerable burden on our society (Section 3). Clinical evidence indicates certain therapies that may expedite relief. However, overall review of the various sources of relief for back pain indicates that expectations are unreasonably high when viewed against the stark uncertainty with which the value of much available therapy has to be regarded (Section 4).

S.3 Existing Provision

Existing services for the relief of back pain are variable in quality and availability, and indeterminate in effectiveness. Better organization within existing resources could be based only on more exhaustive information than is at present available. The collection of such data is recommended, and ways in which this might be accomplished are suggested (Section 5).

S.4 Evidence on Effectiveness

There is a profound and widespread dissatisfaction with what is at present available to help people who suffer from back pain. However, the evidence on most approaches to treatment is unsatisfactory and often conflicting, largely because most forms of therapy have not been evaluated in an acceptable and scientific manner. There is an urgent need for rigorous comparative therapeutic trials, particularly of manipulative treatment (Section 6). Very few studies that have been carried out satisfy scientific criteria, but even those that do appear to have had little influence on practice. Important considerations for future studies are indicated (Section 7).

S.5 Outstanding Problems

There is a considerable range of difficulties in the way of improving our understanding, and these are reviewed at some length. Sustained and increased support for research relevant to this area is not only essential, but should also command high priority; basic science studies are a particular need. It must also be noted that attitudes and institutional arrangements in society contribute to the problems (Section 8).

S.6 Back Pain Clinics

Crisis clinics for the relief of acute back pain are not recommended because there is no indication that material benefit would accrue to most patients, and

also because serious logistic problems would be created. However, there does appear to be a definite if limited value for tertiary referral clinics, and this calls for further study (Section 9).

S.7 Other Recommendations

There is a need to evaluate methods of primary prevention for back pain, such as by trials of instruction on manual handling and lifting. Health education appears to be of limited value until our knowledge gains a better foundation, although much could be done to promote self-care for acute back pain in view of the overwhelming natural tendency for spontaneous recovery. Improved training of those involved in the care of patients with back pain on the basis of such knowledge as is available is recommended (Section 10).

S.8 Immediate Action

The Working Group recommends that this should be regarded as its final report. However, it is also suggested:

- (i) that the Existing Provision Committee be requested to continue in being to co-ordinate and collate the various studies that have been proposed as a result of their initiatives (Section 2.3);
- (ii) that a panel be established, drawn at least in part from the membership of the Group so as to capitalize their experience, to initiate or promote relevant collaborative studies and to proffer advice on other ways in which the detailed recommendations of the Working Group could be implemented (Section 10).

1. Introduction

1.1 The then Minister of State (Health) in the Department of Health and Social Security, Dr. David Owen MP, announced the establishment of the Working Group on 27th July 1976. This was in reply to Parliamentary Questions in which two Members of Parliament asked him what measures he was taking to reduce the incidence of back pain. His reply read:

“Back pain is a major source of discomfort and disability to many people and a serious economic problem in terms of lost production, sickness benefit, and cost of treatment. In order to see how the problems associated with it can be tackled a working group is being established, including experts from the several specialties concerned and individuals with knowledge and training in manipulation techniques (multi-disciplinary membership including representatives of general practice, and the medical and surgical specialties concerned) under the Chairmanship of Professor A. L. Cochrane. It will have the following terms of reference:

- (i) To review the existing provision for back pain and to advise whether services could be more effectively organised within existing resources;
- (ii) To advise on what questions need to be answered before further improvements in services can be planned;
- (iii) To advise on the development of back pain clinics to provide early treatment and advice on prevention.

Health education has an important role to play in reducing the incidence of back pain and in May the Health Education Council issued a leaflet *Mind Your Back* giving advice on reducing back strain.”

1.2 The Members of the Working Group were:

Professor A. L. Cochrane, CBE FRCP FFCM, formerly Director of the Medical Research Council Epidemiology Unit (South Wales), Cardiff—Chairman.

Dr. M. E. Barker, MB ChB MRCGP D.Obst RCOG, General Practitioner, Stamford, Lincolnshire.

Dr. S. Crown, PhD FRCP FRCPsych, Consultant Psychiatrist, the London Hospital.

Dr. A. St. J. Dixon, MD FRCP, Consultant Physician, St. Martins and Royal National Hospitals, Bath.

Dr. Felicity C. Edwards, DM MRCP, Senior Employment Medical Adviser, Employment Medical Advisory Service, Health and Safety Executive, Birmingham.

Mr. N. J. Glass, on appointment Economist in the Department of Health and Social Security, now of HM Treasury.

Mr. G. P. Grieve, FCSP DipTP SRP, Physiotherapist, Norfolk and Norwich Hospital, Norwich.

Professor D. L. Hamblen, PhD FRCS, Department of Orthopaedic Surgery, Western Infirmary, Glasgow.

Mr. E. R. Hitchcock, ChM FRCS, Reader in Surgical Neurology, Western General Hospital, Edinburgh.

Mrs. A. Kelly, SRN ONC (appointed as Miss Maddren), Ward Sister, Royal National Orthopaedic Hospital, Stanmore, Middlesex.

Mr. P. H. Newman, CBE DSO MC FRCS LRCP, lately Consultant Orthopaedic Surgeon, the Royal National Orthopaedic Hospital.

Dr. W. M. Park, MB ChB DMRD FRCR, Director of Radiology, The Robert Jones and Agnes Hunt Orthopaedic Hospital, Oswestry, Shropshire.

Dr. C. A. Pragnell, VRD MB BS(Lond) MRCS LRCP LLCO MRO, General Practitioner and Osteopath, Wimpole Street, London.

Dr. D. J. Price, MB BS FRCGP, General Practitioner, Walton-on-Thames, Surrey.

Dr. P. H. N. Wood, FRCP FFCM, Director of the Arthritis and Rheumatism Council Epidemiology Research Unit and Honorary Reader in Community Medicine, University of Manchester.

Dr. B. D. Wyke, MD BS, Director of the Neurological Unit, Royal College of Surgeons, London.

1.3 The Working Group was assisted in its work by the two secretaries:

Dr. W. J. Modle, MB BS MRCOG

Mr. A. G. Saville, OBE MA

and the following observers:

Medical Research Council (MRC)

Dr. B. J. Rashbass (until December 1977)

Dr. H. N. Duke (from January 1978)

Department of Health and Social Security (DHSS)

Health services division: Mr. R. B. Mayoh

Medical division, health policy: Dr. G. R. Ford

Medical division, research: Dr. J. S. Metters

Nursing division: Mrs. E. J. Evans

Social security division: Dr. D. F. Rice

Scottish Home and Health Department (SHHD)

Dr. R. G. Covell

2. Method of Working

2.1 The Working Group met first on 29th November 1976 to review its terms of reference and to plan how it should conduct its business. These discussions were continued at a second meeting held on 26th January 1977, when it was confirmed that, for the purposes of its study, back pain should be defined as "low back pain, with or without leg pain".

2.2 By the time the Working Group next met on 26th April 1977, a considerable body of evidence from publications and in submissions made directly to the Working Group had already been circulated to Members. It was decided that additional evidence must now formally be sought from professional and other interested organisations, and that, to speed up work on the consideration of evidence, three Committees should be established. Observers from the Department of Health and Social Security, the Scottish Home and Health Department, and the Medical Research Council originally appointed to attend meetings of the Working Group were also invited to attend relevant Committee meetings and to participate in their work.

2.3 Existing Provision

2.3.1 An Existing Provision Committee was set up to collate evidence on the existing provision for back pain, as referred to in the Working Group's first term of reference.

2.3.2 The members appointed to the Existing Provision Committee were:

Mr. E. R. Hitchcock — Chairman

Dr. M. E. Barker

Mr. P. H. Newman

Dr. W. M. Park

Dr. F. C. Edwards (co-opted by the Committee)

2.3.3 Dr. R. G. Covell of the Scottish Home and Health Department, an observer appointed by that Department to the Working Group, assisted the Committee in its work and deliberations. Mr. Grieve, Member of the Working Group, together with Miss L. Dyer, Physiotherapist in the Department of Health and Social Security, assisted the Committee in its consideration of hospital physiotherapy services. Professor Hamblen assisted Mr. Newman in consideration of hospital specialist services. Officials of the Department of Health and Social Security's Statistics and Research and Medical Divisions were also called upon for assistance as required, where their acquaintance with particular subjects and specialties could be of assistance to it.

2.4 General Evidence

2.4.1 An Evidence Committee was set up to make an initial evaluation of written and, as need be, verbal evidence received from organisations concerned with back pain and professions involved in its treatment, including non-medical professions.

2.4.2 The members appointed to the Evidence Committee were:

Professor A. L. Cochrane (Chairman)

Dr. C. A. Pragnell

Dr. P. H. N. Wood

Dr. B. D. Wyke

2.4.3 Letters were addressed on 9th June 1977 to some 48 voluntary or professional organisations (including non-medical professional organisations) inviting them to submit material to the Working Group. Publicity in the national press and in professional journals also elicited evidence, as well as suggestions from organisations not directly addressed and from individuals.

2.4.4 On behalf of the Evidence Committee, Dr. Wyke had discussions with members of the Chartered Society of Physiotherapy.

2.5 Scientific Evidence

2.5.1 A Scientific Committee was set up to evaluate such controlled trials as had already been conducted into the prevention and treatment of back pain, and then to determine what others might be needed.

2.5.2 The members appointed to the Scientific Committee were:

Professor A. L. Cochrane (Chairman)

Dr. A. St. J. Dixon

Mr. N. J. Glass

Professor D. L. Hamblen

Mr. P. Sweetnam (statistician with Medical Research Council Epidemiology Unit (South Wales)—co-opted)

Dr. P. H. N. Wood

Dr. B. D. Wyke

2.5.3 Mr. A. C. Breen and Dr. F. C. Edwards were invited to present material to one of the meetings of the Scientific Committee. The preliminary work of the Committee was assisted by observers from the Medical Research Council and the Research Division of DHSS.

2.6 Ethical Considerations

2.6.1 The Chairman of the Working Group and officers of the Health Departments met with the President and Registrar of the General Medical Council.

2.6.2 The object of these discussions was to explore legal and ethical aspects of collaborative studies of treatment for back pain, in order to establish the feasibility of heterodox practitioners participating in such trials (see Section 8.7, below).

2.7 Heterodox Practice

2.7.1 The Chairman of the Working Group held discussions with:

the Secretary and Registrar of the General Council and Register of Osteopaths Ltd.,

the Principal of the British College of Osteopathy, officers of the British Chiropractors' Association and

the Anglo-European College of Chiropractic, and representatives of the British Acupuncture Association.

2.7.2 The purpose of these meetings was to acquaint organisations representative of different forms of heterodox practice with the requirements of the General Medical Council if collaborative trials were to be carried out. The views of these organisations on their members participating in such trials were also discussed (see Section 8.7, below).

2.8 After their early meetings during the summer of 1977, the Scientific and Evidence Committees, which had the same chairman and overlapping membership, were combined into a single committee and given the task of producing a joint report. Dr. Wood was appointed rapporteur.

2.9 Reports to the Working Group were prepared by the Existing Provision Committee and jointly by the Scientific and Evidence Committees. These were considered in draft by the Working Group at meetings held towards the end of 1977 and during the first half of 1978. The content of the rest of this report is based on these individual reports, having been adopted by the Working Group as a whole.

2.10 Status of this Report

2.10.1 The Working Group has been conscious that it was charged with considering a subject of great public interest. The issues involved include:

- (i) whether various forms of treatment, notably osteopathic and chiropractic methods but also manipulative techniques in general, are as effective or more effective for the relief of back pain than more conventional forms of medical treatment;
- (ii) by implication, as heterodox treatments are not normally available through the National Health Service and not even normally provided by the medical profession, and contingent upon resolution of the preceding issue, whether these alternative therapies should perhaps be made more widely available;
(the way in which this issue might be resolved would obviously have implications in regard to the statutory situation and recognition of various heterodox practitioners)
- (iii) these two issues aside, whether the general availability through the National Health Service of measures to help people suffering from back pain is satisfactory and, if not, whether shortcomings might be attributable to inadequate dissemination of knowledge and skills, or to suboptimal organisation of existing services, including local variations in availability and resources.

2.10.2 During its deliberations the Working Group became aware that in order to discharge its terms of reference exhaustively, and particularly in regard to the issues just identified, it would be necessary to seek a great deal of information that was not at present available. Moreover, to gather this further and specific evidence would require funds to finance the work, and would also occupy a considerable amount of time, well in excess of a year to analyse and interpret as well as to collect the data.

2.10.3 Taking note that a number of enquiries had been made in Parliament and elsewhere about when the report of the Working Group could be expected, it was agreed that it would be most helpful to all concerned were the Group to make a report based on currently available evidence, augmented by suggestions about how deficiencies in the information might be remedied.

2.10.4 It is in this context that the present report is offered, and the Working Group is well aware that many questions are left unanswered. The Working Group anticipates that this report might be regarded as its final report, containing as it does sufficient guidance for the Health Departments to enable them to decide whether the further studies required to resolve the issues should be financed and proceeded with.

3. Occurrence of Back Pain

3.1 Statistics indicate that in Great Britain more than 375,000 people a year, a proportion approaching 1 per cent of the population, experience a spell of certified sickness incapacity because of back pain. This leads to the loss of more than 11.5 million days from work. However, not only are most married women and the elderly not represented in these data, but many more people are able to continue at work or do not have to claim sickness benefit when they are suffering from back pain. Thus these figures underestimate the problem, a view which is supported by Dunnell and Cartwright (1972)*; their report indicated that 21 per cent of adults had experienced back pain in the 14 days preceding their survey.

3.2 Back pain imposes a substantial economic and financial cost on the community but it is only possible to make a very conservative estimate of the size of this cost, one based on recorded sickness and absence. Unrecorded sickness and reduced work effectiveness can usually only be quantified in the vaguest way. Based on official statistics, however, back pain costs the community about £220m a year in lost output, the equivalent of the output of a town of 120,000 people such as Norwich. Not all of this loss is borne by the sufferers, of course. The social security system pays out at least £40m in sickness and invalidity benefits and disablement pensions. In this way, and through lost tax revenue, the whole community shares the economic loss which back pain imposes. In addition the cost to the National Health Service in hospital services, family practitioner and community services, and drugs is at least £60m. Over and above this are stresses imposed on family members, and on other aspects of community life. For instance, litigation concerned with compensation for back pain related to the liabilities of other parties is often unsatisfactory and intractable, and contributes to overloading of our legal system.

3.3 The major impact of back pain appears to be experienced by those in the most active years of life. In addition to the 'working population', to which the incapacity data just quoted relate, the problem is also common in women, particularly in relation to child birth and rearing. However, no age group appears to be exempt. Thus a recent report suggests an increased frequency of occurrence of back pain in teen-age boys. In the elderly the situation tends to be underestimated, not least by virtue of their proportionally lower consultation rates with general practitioners in relation to the actual medical conditions that may be present.

3.4 Back pain is a symptom and not a disease. It may arise from a wide variety of established causes; from injury at one extreme, these extend through a diversity of disease states even to cancer. Clinical experience suggests that much back pain is mechanical in nature, mostly affecting the base of the spinal cantilever. The causes of other forms of back pain are still uncertain, despite

*Dunnell, K., and Cartwright, A. (1972) *Medicine Takers, Prescribers and Hoarders*, Chapter 2. London: Routledge and Kegan Paul.

many and conflicting orthodox and heterodox theories to explain its occurrence. Lack of more satisfactory etiological understanding is a severe obstacle not only to improving methods of treatment, but also to discovering means of prevention.

3.5 There are many gaps in our knowledge and understanding of the occurrence and frequency of back pain. Nevertheless it is certain that the complaint is widespread, unpleasant, and at times serious, and that it imposes a considerable burden on our society. The Working Group concluded that there is a pressing need to seek improvement; the nature of the difficulties in the way of such endeavours is considered in later sections of this Report.

4. Resources for Relief of Back Pain

4.1 In reviewing the various sources of relief for back pain, and the levels of their availability, it has been convenient to anticipate later sections of the Report by including an indication of how effective these different resources appear to be. However, the cautious and questioning nature of these appraisals certainly requires justification, and the quality of available evidence on the effectiveness of different forms of treatment is considered further in later sections of this Report.

4.2 Each individual who develops back pain passes through an initial period of uncertainty about what action he should take. Essentially this resolves itself into three options—to do nothing; to treat himself by restrictions, exercise, or medicaments; or to seek help elsewhere.

4.3 Self-Care

4.3.1 Undoubtedly a large proportion of sufferers, particularly those with relatively mild complaints, selects the first or second of these options. In view of the limited duration of much back pain, these responses can be regarded as intelligent decisions.

4.3.2 Unfortunately there is insufficient basis at the moment for formulating advice that could be incorporated into health education directed at the prevention of back pain. However, much could be done to encourage and promote self-care of these complaints. In most instances there is an overwhelming natural tendency for recovery without the need for professional help. Failure to recognize this spontaneous healing potential is reflected in current service utilization by many people with milder forms of back pain. Their expectations are unreasonably high, and yet their behaviour contributes to delays in access to help for the more severely affected.

4.4 General Practice

4.4.1 Of those persons with back pain who seek help elsewhere, probably the majority consult their general practitioner. In most instances rest and simple drugs are prescribed, and relatively few are referred for further investigation. Physiotherapy does not appear to be readily available to primary care teams on a wide scale.

4.4.2 At the same time there is no evidence available at present to indicate whether improved access to investigatory facilities or to remedial therapy (which term includes physiotherapy, occupational therapy, and remedial gymnastics) would confer any benefit on the majority of acute back pain sufferers who consult their family doctor.

4.5 Other Primary Sources of Help

4.5.1 Some of the individuals who seek help elsewhere may choose to attend an occupational health service, a remedial therapist, an osteopath or a chiro-

practor, or a practitioner of one of a diversity of other systems of belief. In addition, some of those who consult their general practitioner have recourse to these alternative sources of advice as well.

4.5.2 When account is taken of the limited duration of most back complaints, it is difficult to establish whether any approach materially influences the natural history of the underlying condition. However, there is some suggestion that various manipulative techniques are associated with earlier relief of back pain.

4.6 Hospital Out-patient Services

4.6.1 Of greater concern are those individuals with back pain who are referred for specialist help at hospital out-patient departments. These are likely to include those with more severe conditions, those with recurrent problems, those in whom more sinister pathology is suspected, and those who are more demanding of services. Given legitimate needs for a second opinion, for specialised techniques of investigation, or for forms of treatment that may not otherwise be available, the considerable times of waiting for appointments to be seen, on occasions well in excess of six months, are cause for serious concern.

4.6.2 Even at this level there is disturbingly little evidence that whatever is done is effective in exerting any influence on the natural history of the underlying condition, apart from at times affording temporary relief of the pain. There is some evidence to suggest that patients referred to hospital tend to be over-investigated; in view of the hazards of irradiation with radiography, this aspect commands particular attention. The problems arise because of the general lack of specificity of available tests, and the difficulty of making a diagnosis with an essentially subjective complaint. The contribution of investigations and the basing of diagnosis on processes of exclusion or trial require further evaluation.

4.6.3 Despite the lack of scientifically acceptable evidence, clinical experience appears to indicate that manipulation and some other customarily practised forms of non-surgical management may expedite relief for selected sufferers. The Working Group was presented with similar views in regard to heterodox treatments, although it must be noted that osteopaths and chiropractors cannot be employed in the National Health Service unless they are medically qualified. It is difficult to evaluate these claims satisfactorily until controlled comparative trials have been carried out, but the Working Group nevertheless attaches due weight to the opinions of those who have had long experience in the management of back pain.

4.7 Hospital In-patient Treatment

4.7.1 The most severely affected individuals are likely to be admitted to hospital for specialized treatment. The uncertainty about outcome, however, extends to many forms of intervention, and there has been no satisfactory evaluation of the potential both for harm as well as for benefit from such treatments, though undoubtedly a proportion of sufferers appear to be helped by certain procedures.

4.7.2 The results of surgical treatment for low back pain are dependent on the accuracy of diagnosis and the nature of the pathology (see Appendix C). Controlled studies comparing surgical with non-operative management are

few because the decision to operate is usually taken after a period of failed conservative treatment, or to deal with a specific mechanical defect such as spondylolisthesis. Surgical removal of a herniated intervertebral disc associated with nerve root compression relieves sciatica in the great majority of patients so affected. However, long-term follow-up reveals a recurrence of symptoms, particularly back pain, in up to a third of patients, and one-tenth are submitted to further surgery. (In fairness, it has to be acknowledged that this failure rate is not unlike that with surgical procedures for many other conditions as well.) The role of primary vertebral fusion as an adjunct to removal of a degenerate disc remains uncertain; there is conflicting evidence in the literature, although some authors claim that long-term results are improved by at least ten per cent. However, it is certain that a higher incidence of poor results is associated with poor selection of patients, with outstanding claims for compensation, and with re-operation.

4.8 Summary

Taken altogether, these conclusions are stark in the uncertainty that they reveal. The Working Group is very sympathetic to the problems experienced by sufferers, and also those encountered by health professionals in endeavouring to improve their performance. However, the Group is concerned that current expectations in this field are unreasonably high, and also that the potential to help is reduced as long as nearly all involved are misguided by what appear to be ill-substantiated notions. The Group was also exercised by the suggestion that the majority of the medical profession do not make use of the most appropriate techniques of examination in their assessment of patients suffering from back pain. All these considerations reinforce the conclusion that action to improve the present situation should command high priority.

5. Existing Provision

5.1 The outline just concluded serves to indicate the potential that might be expected from different sources. However, any review of existing provisions must take account of the availability of such facilities for the diagnosis and treatment of back pain both between different levels, such as primary as opposed to hospital services, and with regard to their distribution throughout the country.

5.2 Early in its deliberations the Existing Provision Committee came to the conclusion that only limited information on the availability and utilization of these resources could be obtained readily. The specifically relevant material examined by the Committee is listed in Appendix A, although note was also taken of evidence listed in other appendices. The Committee was concerned that much of the available information is of limited utility, and also that a great deal of data of potential value is collected and yet is not readily available.

5.3 Despite its inability to delineate the present situation more exhaustively, it was nevertheless possible for the Working Group to reach a general conclusion that existing services for the relief of back pain are variable in quality and availability, and indeterminate in effectiveness. This view endorses the dissatisfaction with the present state of affairs voiced by various sections of the public, of which the Working Group was made acutely aware (see Section 6.2, below).

5.4 Before consideration can be given to how existing services could be more effectively organized within existing resources, it would be necessary for a great deal of information not currently available to be taken into account. Realizing this, the Existing Provision Committee proceeded to examine in some detail the ways in which the necessary data could be obtained.

5.5 Routine sources had already been taken into account and shown to be wanting for this purpose (Section 5.2, above). It was therefore concluded that specific survey enquiries would be the only means of acquiring the required information. The key areas for exploration are:

- (i) primary care services, both those available from general medical practitioners and those provided by industry;
- (ii) specialist medical services, including radiology, orthopaedic surgery, neurology and neurosurgery, and rheumatology and rehabilitation;
- (iii) ancillary services provided from hospital, including radiography and physiotherapy.

5.6 So that prompt institution of such enquiries could be facilitated, individual members of the Existing Provision Committee were encouraged to design questionnaires relating to their fields of experience. Initiative was taken as follows:

<i>Primary Care:</i>	in industry	Dr. Edwards
	in general practice	Dr. Barker, assisted by Dr. Covell
<i>Specialist Services:</i>		Mr. Newman and Professor Hamblen
<i>Ancillary Services:</i>	radiography and radiology	Dr. Park
	physiotherapy	Mr. Grieve, assisted by Miss Dyer.

5.7 Draft questionnaires drawn up in this way were reviewed by the Existing Provision Committee, and then amended in the light of advice received from the Statistics and Research Division of DHSS. The Committee also considered the likely costings of these enquiries, and the appropriate samples that might be studied. Optimum study designs were then agreed and these, together with the finally agreed forms of the questionnaires, are reproduced in Appendix G of this Report. Also included in the Appendix is a description of a preliminary survey in industry that was initiated before this Report was prepared and the conclusions of a pilot survey carried out by the Scottish General Practitioner Research Support Unit in Dundee.

5.8 In welcoming the report of the Existing Provision Committee the Working Group acknowledged that the groundwork had been established for documentation of services currently available to help people suffering from back pain. When it went on to consider the organization of services, the Working Group recognized that a rational and satisfactory approach to this problem must take account of the effectiveness of each of these services. However, even if effectiveness is indeterminate there are still three strong arguments to justify prosecution of enquiries of the types suggested. These are:

- (i) *equity*—existing variations in the quality and availability of services in different parts of the country are unacceptable; these can be remedied only by first determining the extent of variation and the location of its extremes.
- (ii) *efficiency*—potential resource conservation could certainly be realized; thus if, for instance, one is considering physiotherapy, provision of this at the place of employment can contribute to less time being lost from work when compared with the absence required to attend a hospital remedial therapy department.
- (iii) *reorganization*—as better knowledge of the contributions of different components of the service becomes available, it will be difficult to apply the fruits of this understanding to service modification and improvement unless a clearer picture of the present pattern of organization is available.

5.9 In the light of all these considerations the Working Group concluded that the care and effort applied to its activities by the Existing Provision Committee provided the Health Departments with a unique opportunity to set the scene for improving the organization of services for people suffering from back pain. It would be foolish not to make the most of the possibilities this offered. These conclusions have been incorporated into the recommendations made by the Working Group (see Section 10, below).

6. General Evidence

6.1 An abundance of material was submitted in response to appeals for evidence (see Section 2.4.3, above). The individuals and organizations that offered evidence are enumerated in Appendix B, and the Working Group is grateful for their co-operation and help. The Evidence Committee also took note of published material relevant to back pain in the English language literature and to which their attention had been drawn, and this is listed in Appendix C.

6.2 Taken altogether, the opinions and evidence revealed a profound and widespread dissatisfaction with what is at present available to help people who suffer from back pain. The Working Group shared these feelings, which led it to regard attempts at overcoming obstacles in the way of improving matters as calling for urgent support (see Sections 3.5, 4.8, and 5.9, above).

6.3 The Quality of Evidence

6.3.1 The Working Group has been sensitive to the controversial nature of the material under consideration (see Section 2.10.1, above). Aware that many might feel, like Mark Twain, that to ask a doctor's opinion of osteopathy is equivalent to going to Satan for information about Christianity, the Working Group has been at pains to apply the same criteria to all evidence reviewed.

6.3.2 It is necessary to distinguish between two classes of evidence.

6.3.2.1 First, there are beliefs and theories. These constitute attempts to explain phenomena and experiences in the natural world, and they are often both plausible and persuasive. Their limitation is that, if not supported by appropriate observations, it is not possible to exclude alternative explanations; this is a perennial problem with remedies for essentially ill-understood and subjective complaints.

6.3.2.2 The second class of evidence, which may have unquestionable empirical validity even in the absence of a coherent theoretical explanation, is that derived from observations made in such circumstances that satisfactory attempts have been made to take account of the influence of coincidental events; evidence of this type can establish the effectiveness of remedies in such a way that the responses of future recipients can be predicted with confidence.

6.3.3 Unfortunately most of the material submitted to the Working Group consisted of expressions of opinion that were not supported by substantiating evidence. Although sincerely held, these different beliefs were often in conflict with one another. The reason for the conflicts is that most forms of treatment offered for back pain have yet to be evaluated in an acceptable and scientific manner.

6.4 The only rational interpretation that can be placed on the conflicts in the evidence is that no particular branch of health-related professions at present

has any real justification for feeling confident in its ability to treat all types of back pain effectively and with a predictable outcome. However, it should be possible for a great deal of the confusion to be resolved by the institution of more controlled comparative trials; the views of the Working Group on such studies have been incorporated in their recommendations (see Section 10, below).

6.5 Helpful material submitted by the Ergonomics Society suggested that there were three broad areas of concern:

- (i) *intrinsic*—back pain arising primarily due to some factor(s) within the body of the person afflicted;
- (ii) *environmental*—back pain primarily determined by the effect of environmental factors on the individual, such as heat, cold, draughts, etc.;
- (iii) *work-dependent*—back pain primarily determined by some aspect of the individual's working conditions, including factors related to equipment, working methods, or work organization.

Although endorsing the Society's concern with prevention, the Working Group felt that ergonomic trials would be premature until there was greater scientific understanding of the essential nature of back pain. Although some correlation may be observed between back pain and environmental or occupational factors, there is no evidence that this relationship is causal. Thus at present it is not even possible to conclude that some forms of back pain are *primarily* due to extrinsic factors.

6.6 This uncertainty was reflected in the submission from the Society of Occupational Medicine. Although this acknowledged the desirability of prevention and noted the efforts of occupational physicians in this direction, no evidence on the effectiveness of preventive measures was cited, and the Working Group is not aware of any such evidence that meets acceptable scientific requirements.

7. Scientific Evidence

7.1 The remit of the Scientific Committee was restricted to scientific studies and controlled trials, those pieces of work in which there was a possibility of arbitrating between the effectiveness of alternative methods of treatment. No attempt was made to review exhaustively the mass of uncontrolled observations and opinions that exist about various management policies supposed to help the individual suffering from back pain, although note was taken of the sources listed in Appendix C. The limited quantity of material relevant to its terms of reference and that has been considered by the Committee in detail is enumerated in Appendix D.

7.2 In evaluating evidence the Committee were particularly influenced by two criteria:

- (a) scientific quality—did a piece of work resolve uncertainty or conflict in knowledge or practice? This question is largely concerned with the design, execution, and analysis of studies;
- (b) perceived relevance—did the work influence the subsequent judgement and behaviour of medical practitioners? This criterion is directed at application and exploitation of available knowledge.

7.3 As can be seen from Appendix D, the evidence considered ranged from trials of specific remedies, both orthodox and heterodox, to alternative patterns of delivering particular treatments. Each individual study was reviewed in detail. A number of limitations in methods were noted, and these have been taken into account in suggesting considerations relevant to future studies (Appendix F).

7.4 A striking feature of the 18 controlled studies has been their failure to satisfy the criterion of perceived relevance. There is little to suggest that any of the reported trials have materially influenced clinical practice on any wide scale, even though those most closely concerned with individual studies may have modified their approach in response to the findings. Given that the design and execution of some, at least, of the published trials are difficult to fault, this lack of effect on therapeutic practice calls for explanation.

7.5 The overall shortcoming in most of the scientific studies is that they were not related to defined subpopulations, so that the representativeness of the cases studied is difficult to establish. Thus although a particular treatment or management policy may have appeared to be effective, it is not easy to determine to which subgroup of sufferers from back pain the remedy may be appropriate.

7.6 Underlying both of these uncertainties is the unsatisfactory nosology and classification of back complaints. As a result, it is not possible on scientific

grounds to offer recommendations for treatment or services that could have general application for the relief of back pain as it occurs in the community, or even in specified subgroups.

8. Outstanding Problems

8.1 There are two main classes of outstanding problem, those concerned with the organization of services and those directed at improving understanding so as to provide a basis for developing more effective remedies. The former has been considered at some length in Section 5 (above), so that it remains to examine obstacles in the way of increasing understanding.

8.2 In reviewing research difficulties the Scientific Committee benefited from three sources of information:

- (i) the views on outstanding problems included in general evidence to the Working Group (Appendix B);
- (ii) the limitations identified by the Committee in available scientific evidence (Appendix D);
- (iii) research enquiries related to back pain that are currently being undertaken, those of which the Committee was made aware being enumerated in Appendix E.

The Committee is indebted for suggestions received, and particularly to the individuals noted in Appendix E who revealed their research objectives.

8.3 The most fundamental problem is uncertainty about the nature of back pain, of how the complaint arises, and of the significance of various attributes that may be associated with it. Knowledge in these areas will be improved only as a result of sustained investment in clinical and basic research studies directed at unravelling these problems. Some indication of present endeavours in these fields is given in a listing of current research projects (Appendix E). Note should be taken that back pain research has been acknowledged as an area for priority support by MRC, the Health Departments, and other relevant funding agencies like the voluntary organizations. While the locally organized research schemes administered by regional health authorities are not subject to these guidelines, they nevertheless represent additional sources of support sympathetic to the need for work of this type.

8.4 There is uncertainty about the way in which back pain should be regarded as a biomedical phenomenon (some of the difficulties are noted in Appendix F). This gives rise to conflicts over what constitutes a scientific approach to the problem. Many painful conditions arise from well-defined pathological entities and in these circumstances it is acceptable to concentrate on the morbid state, in the hope that the pain will be controlled secondarily as the underlying pathology is modified. In this situation the study of objective phenomena is rewarding, and provides the means for producing subjective relief. In contrast, pain is a subjective complaint, an emotional response to afferent input, in which evidence of pathology or other objective signs may be difficult to detect. This would indicate that a multidisciplinary approach is required, so that physically oriented and more objective disciplines may be tempered by

behavioural insights derived from fields like psychology, sociology, and anthropology.

8.5 Back pain arises from a variety of causes, not least in relation to the different regions of the back that may be affected; some, at least, of these causes are unknown. It is, therefore, heterogeneous. Failure to delineate distinct syndromes retards both the search for etiological insights and the evaluation of different approaches to treatment. Pending better clinical understanding, it is essential that empirical criteria be adopted in order to promote standardization of research case experience; this would also facilitate generalization from this experience to other patients with similar defined problems.

8.6 Ambiguity in how back pain should be regarded leads to difficulty in deriving satisfactory measures of outcome for the assessment of remedies. Much of the difference in opinion over various approaches to therapy arises from these difficulties. A brief review of problems associated with measures of the outcome of therapy has been included in Appendix F.

8.7 On top of these intrinsic problems there are the difficulties imposed by social organization. Thus comparative trials between orthodox and heterodox approaches to therapy could be construed as infringing the restrictions on medical practitioners imposed by the General Medical Council. It is therefore encouraging to report that in principle there is unlikely to be any obstacle to such trials being put forward by the General Medical Council, subject, of course, to approval of the trial protocol by the GMC in addition to a local ethical committee. Moreover, there has been preliminary agreement in principle by the organizations representing them that chiropractors, osteopaths, and acupuncturists would be prepared to participate in such trials. The Working Group considers that its initiatives in these directions represent an appreciable step forward in facilitating back pain research.

8.8 Another aspect of the difficulties of social organization is the implication of these outstanding problems for research support agencies. There is a danger that the increasing sophistication in research technologies may lead to extension of the use of criteria appropriate to such studies to areas where they are scarcely applicable. Thus in developed fields of enquiry a successful application for support is required to include a testable hypothesis and a method appropriate for this purpose. However, at the margins of the islands of knowledge the problem is usually ill-defined and a testable hypothesis cannot be formulated without further observation to describe the natural phenomenon. Furthermore, until the problem has been adequately circumscribed it is not possible to assess what methods may be appropriate, even less to develop what techniques the situation may demand.

8.9 The challenge for research support agencies is heightened when account is taken of the implications of all these features. Thus descriptive study of representative phenomena, the development of appropriate methods, multi-disciplinary involvement, and participation by other practitioners all give rise to problems of scale in regard to support. It is unlikely that short-term project support will be a successful means of tackling these intractable difficulties; much of the work will have to be based on studies of the natural history of

varieties of back pain, so that the time scale will inevitably be fairly lengthy. Similarly, finite duration grants are also unlikely to span the time scale required, nor will they facilitate multidisciplinary involvement. Moreover, by involving self-employed practitioners it will be necessary to make provision to recompense them for time given to a collaborative trial project.

8.10 This outline of outstanding problems has provided some indication of the scope of difficulties in the way of improving services, which need to be set alongside shortcomings in service organization considered in Section 5 (above). Further growth in knowledge does not necessarily take place in a predictable and incremental fashion; developments in one area can have profound implications for other approaches, setting problems in a different context. For this reason research priorities need repeated reappraisal. The Working Group considered that it should proceed no further in regard to its second term of reference, other than as recommended in Section 5.9 (above) and to recommend that sustained and increased support for research relating to any aspect of back pain should be regarded as essential.

8.11 Finally, it would be irresponsible not to draw attention to the manner in which attitudes and institutional arrangements in society contribute to the problems. Major influences on one aspect of recovery, indicated by return to work, include the terms of an individual's employment, his eligibility for sickness benefits, and the possibility of compensation. Dimensions of the back pain problem could be influenced by changes in any of these arrangements, and the work of the current enquiry into civil liability reveals some of the possibilities. The Working Group was made aware that unfortunately medical practice appears at times to compound the situation by pursuing policies for management and certification that needlessly prolong the period of incapacity.

9. Back Pain Clinics

9.1 In considering the development of back pain clinics it is necessary to recognize that the designation of such clinics has no specific meaning. The Working Group therefore reviewed separately the evidence relating to the two main types of service that might be included under this heading.

9.2 Primary or Secondary Referral Clinics

9.2.1 There is no satisfactory evidence that any treatment, let alone early treatment, is sufficiently effective in influencing the natural history of the condition in most acute back pain sufferers as to justify diverting resources to the establishment of crisis clinics, be they organized on the basis of primary care or secondary referral.

9.2.2 The problem of acute back pain is so ubiquitous that any development encouraging secondary referral of patients to specialist facilities would be inefficient, as well as being contrary to the currently increasing emphasis on the greater self-sufficiency of primary care.

9.2.3 At present a considerable proportion of sufferers from acute back pain recover spontaneously within a short time. Were indiscriminate access to specialist facilities to be improved so that waiting times to be seen were reduced, this could only result in a very appreciable increase in the burden of work borne by specialist services without any indication that material benefit would accrue to most patients seen at an earlier stage in the natural history of their problem.

9.2.4 Not only are effective means of prevention unknown, but special crisis clinics for acute back pain would scarcely be in a position to advise on primary prevention since only those who had already developed the complaint would be likely to attend or be referred to such clinics.

9.2.5 In view of all these uncertainties the Working Group considered that there was no basis for suggesting that it would be beneficial to develop special acute back pain clinics for crisis care on a primary or secondary basis. In fact there is much to suggest that such provision could well be counterproductive in terms of resources, while conferring little if any benefit.

9.3 Tertiary Referral Clinics

9.3.1 Tertiary referral clinics (i.e. seeing patients referred by other consultants) are often organized on a regional basis and in conjunction with facilities for the treatment and relief of pain arising from other causes and in other locations. The Working Group was impressed that such facilities appear to be serving a valuable function, even though this is relevant to only a very small proportion of sufferers from back pain.

9.3.2 Although the evidence is unsatisfactory and incomplete, there does appear to be variability throughout the country in ease of access to such tertiary facilities. The Working Group considered that the case for documenting

this particular variation (see Section 5.8, above) appeared to be especially strong, so that the availability of this service could be improved.

9.3.3 An additional role for some of these tertiary clinics could be to serve as foci for multidisciplinary investigation of divers aspects of back pain.

10. Recommendations

10.1 Further improvements in services can be planned rationally only when there is better understanding of the nature, occurrence, and causes of back pain and of effective ways of modifying it. The Working Group recommends that sustained and increased support for research relevant to these areas is not only essential, but should also command high priority.

10.2 The fundamental need is for further descriptive clinical study carried out in conjunction with more basic research enquiries involving multidisciplinary contributions. Clinical and basic research are interdependent but there is a great need for expansion of activity in the latter area; at present there is a singular lack of basic science studies in most of the relevant disciplines that could contribute to improved clinical understanding of the problems associated with back pain. Moreover, the possibilities are expanding as newer techniques such as HLA typing, ultrasonics, and computer-assisted tomography become available.

10.3 Rather than supporting isolated and unrelated projects, it would seem preferable to promote concentration of effort in a limited number of centres that were prepared to dedicate themselves to this endeavour. Special back pain research centres, perhaps some in conjunction with regional tertiary referral clinics, might well form the ideal focus for such activities, although it would be necessary to ensure that local general practitioners were actively involved in the programme as well. The organizational pattern of the Institute for Hearing Research might be taken as a model for these developments. Arrangements for training of health service staff in appropriate methods of assessment and treatment might be included in the remit of such centres.

10.4 The ideal method of control of back pain would obviously be primary prevention. Efforts to this end are handicapped by the generally unsatisfactory state of present knowledge, but there are certain plausible approaches that merit rigorous evaluation. For instance, instruction on manual handling and lifting is fairly widely believed to have prophylactic value, although there is no scientific evidence that this is in fact effective in reducing the frequency or severity of back pain. It is recommended that steps be taken to promote and facilitate controlled trials of preventive measures. These could be conducted particularly in working environments, in juveniles, and in connexion with sporting activities.

10.5 In view of the level of public concern and dissatisfaction, and of the resources currently applied to manipulation and forms of heterodox practice in both the public and private sectors, it is a matter of urgency that comparative trials of manipulative treatment for back pain should be initiated, and these should include both orthodox and other means.

10.6 Controlled trials of various other forms of therapy are also sorely needed, and it is recommended that steps be taken to promote and facilitate such studies, to include methods of secondary prevention as well. It is also desirable that more attention be directed to outcome in terms of adverse effects or harm, as well as in regard to benefit. Considerations relevant to the design and execution of such trials are set out in Appendix F. In the meantime empirical clinical experience suggests that manipulation, some other non-invasive procedures, and epidural injections may be of assistance in the treatment of appropriately selected patients.

10.7 There is a need for assessment of the predictive role of different tests, and of the way this might influence the utilization of facilities for investigation. This could usefully be combined with attempts to evaluate the contribution the results of these make to clinical decision processes and outcome.

10.8 There appear to be considerable but largely undocumented variations in the availability of various forms of therapy and other provisions for the relief of back pain. It is recommended that the pattern of existing provisions merits more detailed study, so as to serve as the basis for rationalization of resources and development of a service that is more effectively deployed. Much data of potential value is already collected but is not readily retrievable; it is also recommended that effort be applied to improving the availability of information of this type.

10.9 The Working Group considered the potential for health education and for improved professional training. It is cause for concern that many doctors appear not to make use of the most appropriate methods of examination of the patient with back pain. Once useful clarification or advance of knowledge has occurred, it is recommended that attention be focussed on how best to disseminate the implications of this understanding as widely as possible. In the meantime a great deal could be done to encourage and promote self-care of acute back pain, in view of the overwhelming natural tendency for recovery.

10.10 In presenting its conclusions and recommendations in this manner the Working Group on Back Pain has largely fulfilled its obligations in regard to its terms of reference. Certainly it was never envisaged that the Group should initiate or conduct major research enquiries. However, it is recommended that consideration might be given to the following:

- (i) requesting the Existing Provision Committee to continue in being to co-ordinate and collate the various studies that have been proposed as a result of their initiatives;
- (ii) establishing a panel drawn at least in part from the membership of the Group, so as to capitalize their experience in reviewing the evidence and considering the nature of outstanding problems and the priorities that might be attached thereto. Its objects could include initiation or promotion of relevant collaborative studies, particularly in the form of controlled trials, and review of the implementation of developments in patient assessment and care as the results of research studies become available. The panel could also proffer on-going advice on other ways in which the recommendations of the Working Group could be implemented.

Appendix A

Currently available information on the existing provision for back pain

- Benn, R. T., and Wood, P. H. N. (1972) Statistical Appendix: Digest of data on the rheumatic diseases — 4 Morbidity and mortality, and hospital services for rheumatism sufferers. *Annals of the Rheumatic Diseases*, **31**, 522-529.
- Benn, R. T., and Wood, P. H. N. (1975) Pain in the back: an attempt to estimate the size of the problem. *Rheumatology and Rehabilitation*, **14**, 121-128.
- Department of Health and Social Security. Selected statistics of hospital in-patient and out-patient activity.
- Wood, P. H. N. (ed.) (1977) 'The Challenge of Arthritis and Rheumatism — a report on problems and progress in health care for rheumatic disorders.' London, The British League against Rheumatism.
- Pilot Studies on Low Back Pain — a report by the Scottish General Practitioner Research Support Unit (July 1977).
- East Scotland X-ray Survey 1973-4.
- Report of the Working Group on Rheumatism in Industry, DE, April 1973.
- C. R. Hayne, The Physiotherapist in Industry, from an FCSP thesis, awarded 1977.
- Department of Health and Social Security. Selected statistics on physiotherapy and occupational therapy services.

Appendix B

Individuals and organizations submitting evidence

Anderson, D., DHSS Regional Medical Officer on use of bed board
Anderson, J. A. D., paper on sickness absence and back pain
Back Pain Association, statement and newsletter
Back Pain Association, newsletter
Bateman, H. A., Pressure Sealed Plastics Ltd., 'Sit-Easi inflatable back pad'
Blaikley, N. P. H. on Yoga
Breen, A. C., Anglo-European College of Chiropractic Ltd., paper on therapist overlap in a group of chiropractic patients
British Acupuncture Association
British Association for Rheumatology and Rehabilitation
British Association of Manipulative Medicine Ltd.
British Association of Occupational Therapists
British Chiropractors' Association
British Chiropractors' Association on the contribution of chiropractic to the understanding of back pain
British Medical Association
British Naturopathic & Osteopathic Association
British Orthopaedic Association
British Pro-Chiropractic Association
Burn, J. M. B., Consultant Anaesthetist, Southampton General Hospital, paper on the role of special clinics for treatment of back pain (with Langdon, L.) from Intractable Pain Society
Chartered Society of Physiotherapy
College of Traditional Chinese Acupuncture, UK
Collier, B. B., Consultant Anaesthetist, Pain Relief Clinic, Whipps Cross Hospital
Consumers' Association Publication, 'Avoiding Back Trouble' and Non-surgical management of lumbar disc diseases, *Drug & Therapeutic Bulletin*, 15, 77
Covell, Dr., paper on East Scotland X-ray Survey 1973-4
Cyriax, J. H.
Darlington Community Health Council
Disabled Living Foundation
Dove, C. I., British School of Osteopathy Ltd., on low back pain
Dow-Smith, G.
Ergonomics Society, comments and paper on back pain and lorry driving
Faculty of Anaesthetists
Faculty of Community Medicine
Faculty of Homoeopathy
Gardner, A. D. H., Consultant Orthopaedic Surgeon, Essex A. H. A., paper on the backache problem
Health Education Council
Inceman, H., paper on Rudolph Steiner treatment in cases of disc syndrome
Institute of Orthopaedic Medicine

Jones, H. M. on acupuncture
 L.A.M.P.S., National Physiotherapy Service
 Little, N., physiotherapist
 Lord, S. R., Anglo-European College of Chiropractic Ltd.
 Los, P., Bone Setter
 Lucey, J. F., Chief Medical Officer, Navy, Army & Air Force Institutes
 Mackey, Mona, State Registered Physiotherapist
 McTimoney, J., Chiropractor
 Murley, A. H. G., Consultant Orthopaedic Surgeon, Cambridgeshire A.H.A.
 Myers, J. A.
 Naylor, A.
 Newman, P. H., paper on surgical treatment for spondylitis and spondylo-
 listhesis
 Niagara Therapy (UK) Ltd., 3 papers on massaging back muscles
 O'Brien, J., press news item on backache wagon, *Telegraph*, 9/9/77
 Osteopathic Association of Great Britain on structure of practices (per
 K. Burton)
 Oxfordshire School of Chiropractic
 Pharmaceutical Society of Great Britain
 Pickard, J. M.
 Price, D. J., Postgraduate Adviser in General Practice, South West Thames
 Region, on acute backs in general practice
 Proprietary Association of Great Britain, paper on home medication in care
 of back pain
 Rose, M. J., paper on low back pain
 Royal College of Nursing
 Royal College of Physicians Standing Committee on Rheumatology and
 Rehabilitation
 Royal College of Radiologists
 Royal College of Surgeons
 Semmence, A. M., Principal Medical Officer, Civil Service Department, on
 preliminary report of Manchester Survey
 Society for Back Pain Research
 Society of British Neurological Surgeons
 Society of Occupational Medicine
 Society of Osteopaths
 Society of Registered Naturopathy
 Stallworthy, Sir John, British Medical Association
 Stubbs, D. A., Department of Human Biology and Health, University of
 Surrey, comment and paper, 'Radio pills: their use in monitoring back stress'
 (with Davis, P. R. and Ridd, J. E.)
 Thomas, B., Architect
 Trevethick, R. A., Chief Medical Officer, British Steel Corporation
 Whiting, F., Quaker Oats Ltd.

Appendix C

Material relevant to back pain

i General scientific papers

- Barker, M. E. (1977) Pain in the back and leg: a general practice survey. *Rheumatology and Rehabilitation*, **16**, 37-45.
- Breen, A. C. (1977) Chiropractors and the treatment of back pain. *Rheumatology and Rehabilitation*, **16**, 46-53.
- Crown, S. (1978) Psychological aspects of low back pain. *Rheumatology and Rehabilitation*, **17**, 114-124.
- Dossetor, A. E. (1975) Management of backache in general practice. *British Medical Journal*, **4**, 32-33.
- Edwards, B. C. (1969) Low back pain and pain resulting from lumbar spine conditions: a comparison of treatment results. *Aust. J. Physiother.*, **XV**, 3.
- Epstein, J. A., Epstein, B. S., Lavine, L. S., Carras, R., Rosenthal, A. D., and Sumner, P. (1973) Lumbar nerve root compression at the intervertebral foramina caused by arthritis of the posterior facets. *J. Neurosurg.*, **39**, 362-369.
- Epstein, J. A., Epstein, B. S., and Lavine, L. S. (1974) Surgical treatment of nerve root compression caused by scoliosis of the lumbar spine. *J. Neurosurg.*, **41**, 449-454.
- Epstein, J. A., Epstein, B. S., Lavine, L. S., Carras, R., Rosenthal, A. D. (1976) Degenerative lumbar spondylolisthesis with an intact neural arch (pseudo-spondylolisthesis). *J. Neurosurg.*, **44**, 139-147.
- Grantham, V. A. (1977) Backache in boys—a new problem? *The Practitioner*, **218**, 226-229.
- Grieve, G. P. (1970) Sciatica and the straight-leg-raising test in manipulative treatment. *Physiotherapy* (August 1970), 337-346.
- Grieve, G. P. (1975) Manipulation. *Physiotherapy*, **61**, 11-18.
- Grieve, G. P. (1976) The sacro-iliac joint. *Physiotherapy*, **62**, 384-400.
- Hansard, House of Lords, 22 February 1977 and 14 March 1977. Queen's Bench Division, 12 February 1977, *Times*.
- Hewitt, D., and Wood, P. H. N. (1975) Heterodox practitioners and the availability of specialist advice. *Rheumatology and Rehabilitation*, **14**, 191-199.
- Hood, L. B. and Chrisman, D. (1968) Intermittent pelvic traction in the treatment of ruptured intervertebral disc. *J. Amer. Phys. Ther. Assoc.*, **48**, 21-30.
- Inglis, B. (1977) Slipped discs—doubting Thomas's. *New Scientist*, 30 June 1977.
- Le Vay, D. (1967) A survey of surgical management of lumbar disc prolapse in the United Kingdom and Eire. *The Lancet*, **1**, 1211-1213.
- Lidstrom, A., and Zachrisson, M. (1970) Physical therapy on low back pain and sciatica. *Scand. J. Rehab. Med.*, **2**, 37-42.
- Maitland, G. D. (1961) Lumbar manipulation: does it do harm? *Med. J. Australia*, **11**, 14.
- Mathews, J. A. (1977) Backache. *British Medical Journal*, **1**, 432-434.
- Naylor, A. (1977) Surgical treatment in lumbar disc protrusion. *British Medical Journal*, **1**, 567-569.

- Paine, K. W. E., and Haung, P. W. H. (1972) Lumbar disc syndrome. *J. Neurosurg.*, **37**, 75-82.
- Salter, D. C. (1976) Some aspects of the prognostic detection of referred clinical signs. *Brit. Osteopathic J.*, **9**, 3-26.
- Shenkin, H. A. (1976) A new approach to the surgical treatment of lumbar spondylosis. *J. Neurosurg.*, **44**, 148-155.
- Shimoji, K., Matsuki, M., Shimizu, H., Iwane, T., Takahashi, R., Maruyame, M., and Masuko, K. (1977) Low-frequency, weak extradural stimulation in the management of intractable pain. *Br. J. Anaesth.*, **49**, 1081-1086.
- Sussman, B. J. (1975) Inadequacies and hazards of chymopapain injections as treatment of intervertebral disc disease. *J. Neurosurg.*, **42**, 389-396.
- Wagenhäuser, F. J. (1977) Epidemiology of postural disorders in young people. *EULAR Monograph No. 1*, 203-224.
- van Wely, P. (1970) Design and disease. *Applied Ergonomics*, **1.5**, 262-269.
- Wood, P. H. N. (1976) Epidemiology of back pain, in 'The Lumbar Spine and Back Pain', ed. Jayson, M.I.V. Tunbridge Wells: Pitman Medical Publishing Co. Ltd.
- Wood, P. H. N. (Ed.) (1977) 'The Challenge of Arthritis and Rheumatism—a report on problems and progress in health care for rheumatic disorders.' The British League against Rheumatism, London.

see also

Avoiding Back Trouble, ed. Rudinger, E. London: Consumers' Association, 1975.

The Book of the Back, by Inglis, B. London: Ebury Press, 1978.

ii Papers concerned with results of surgery for low back pain

- Armstrong, J. R. (1951) The causes of unsatisfactory results from the operative treatment of lumbar disc lesions. *The Journal of Bone and Joint Surgery*, **33B**, 31-34.
- Barr, J. S., Kubik, C. S., Molloy, M. K., McNeill, J. M., Riseborough, E. J. and White, J. C. (1967) Evaluation of end results in treatment of ruptured lumbar intervertebral discs with protrusion of nucleus pulposus. *Surgery, Gynaecology & Obstetrics*, **125**, 250-256.
- DePalma, A. F. and Rothman, R. H. (1969) Surgery of the Lumbar Spine. *Clinical Orthopaedics*, **63**, 162-170.
- Hagen, R. and Engesaeter, L. B. (1977) Unilateral and bilateral partial laminectomy in lumbar disc prolapse. A follow-up study of 156 patients. *Acta Orthop. Scand.*, **48**, 41-46.
- Hudgins, W. R. (1974) Compensation and success of lumbar disc surgery. *Texas Medicine*, **70**, 62-65.
- Nachlas, I. W. (1952) End-result study of the treatment of herniated nucleus pulposus by excision with fusion and without fusion. *The Journal of Bone and Joint Surgery*, **34A**, 981-988.
- Naylor, A. (1974) The late results of laminectomy for lumbar disc prolapse. A review after ten to twenty-five years. *The Journal of Bone and Joint Surgery*, **56B**, 17-29.
- O'Connell, J. E. A. (1951) Protrusions of the lumbar intervertebral discs. *The Journal of Bone and Joint Surgery*, **33B**, 8-30.
- Raaf, J. (1959) Some observations regarding 905 patients operated upon for protruded lumbar intervertebral disc. *American Journal of Surgery*, **97**, 388-399.

- Rowe, M. L. (1965) Disc surgery and chronic low-back pain. *Journal of Occupational Medicine*, **7**, 196-202.
- Slepian, A. (1966) Lumbar Disk Surgery. Long follow-up results from three neurosurgeons. *New York State Journal of Medicine*, **66**, 1063-1068.
- Young, H. H. and Love, J. G. (1959) End results of removal of protruded lumbar intervertebral discs with and without fusion. *AAOS Instructional Course Lectures*, **16**, 213-216.

iii Material relating to the status of osteopaths and chiropractors in other countries

Relating to the European Communities, Australia, Canada, Denmark and Netherlands, South Africa, and USA.

Pond, E., report on Osteopaths and Chiropractors in other countries.

iv Material relating to acupuncture

- Andersson, S. A., Ericson, T., Holmgren, E., and Lindqvist, G. (1977) Analgesic effects of peripheral conditioning stimulation—I. General pain threshold effects on human teeth and a correlation to psychological factors. *Acupuncture & Electro-Therapeut. Res. Int. J.*, **2**, 307-322.
- Andersson, S. A., Holmgren, E., and Roos, A. (1977) Analgesic effects on peripheral conditioning stimulation—II. Importance of certain stimulation parameters. *Acupuncture & Electro-Therapeut. Res. Int. J.*, **2**, 237-246.
- Bischko, J. J. (1975) Acupuncture research in Austria during the last ten years. *Acupuncture & Electro-Therapeut. Res.*, **1**, 45-49.
- Bossy, J., Golewski, G., Maurel, J.-Cl., and Seoane, M. (1977) Innervation and vascularization of the auricula correlated with the loci of auriculotherapy. *Acupuncture & Electro-Therapeut. Res. Int. J.*, **2**, 247-257.
- Chiao Shun-fa (1977) Scalp acupuncture in brain diseases. *Chinese Medical Journal*, **3**, 325-328.
- Chinese People's Liberation Army 202nd Hospital (1978) Acupuncture point injection in pediatric pneumonia. *Chinese Medical Journal*, **4**, 51-54.
- Cook, A. W., Tahmouresie, A., Oygar, A., Kleriga, E., Pacheco, S., Baggenstos, P., and Nidzgorski, F. (1977) Epidural electrical stimulation of spinal cord for intractable pain and other abnormal conditions. *Acupuncture & Electro-Therapeut. Res. Int. J.*, **2**, 259-270.
- Edelist, G., Gross, A. E., and Langer, F. (1976) Treatment of low back pain with acupuncture. *Canad. Anesth. Soc. Journ.*, **23**, 303-306.
- Fox, E. J., and Melzack, R. (1976) Comparison of transcutaneous electrical stimulation and acupuncture in the treatment of chronic pain. *Advances in Pain Res. and Therap.*, **1**, 979-801. (Also in *Pain*, **2**, 141-148 (1976).)
- Frost, E. A. M., Hsu, C. Y., and Sadowsky, D. (1976) Acupuncture therapy: comparative values in acute and chronic pain. *Advances in Pain Res. and Therap.*, **1**, 823-829. (Also in *N.Y. State J. Med.*, May, 695-697.)
- Ghia, J. N., Mao, W., Toomey, T. C., and Gregg, J. M. (1976) Acupuncture and chronic pain mechanism. *Pain*, **2**, 285-299.
- Heller, S. I. (1975) Medical recording and peer review. *Acupuncture & Electro-Therapeut. Res.*, **1**, 183-189.
- Katz, R. L., Kao, C. Y., Spiegel, H., and Katz, G. J. (1974) Pain, acupuncture, hypnosis. *Advances in Neurology*, **4**, 813-818.
- Kitahata, L. M. (1977) Acupuncture anaesthesia: a psychophysical study. *Acupuncture & Electro-Therapeut. Res. Int. J.*, **2**, 329-332.

- Kraus, H. (1977) Triggerpoints and acupuncture. *Acupuncture & Electro-Therapeut. Res. Int. J.*, **2**, 323-328.
- Ledergerber, C. P. (1976) Electroacupuncture in obstetrics. *Acupuncture & Electro-Therapeut. Res. Int. J.*, **2**, 105-118.
- Lee, P. K. Y., Modell, J. H., Anderson, T. W., and Saga, S. A. (1976) Incidence of prolonged pain relief following acupuncture. *Curr. Res. Anesth. Analg.*, **55**, 229-231.
- Levitt, E. E., and Walker, F. D. (1975) Evaluation of acupuncture in the treatment of chronic pain. *J. Chronic Dis.*, **28**, 311-316.
- Murphy, T. M. (1976) Subjective and objective follow-up assessment of acupuncture therapy without suggestion in 100 chronic pain patients. *Advances in Pain Res. and Therap.*, **1**, 811-815.
- Omura, Y. (1975) Patho-physiology of acupuncture treatment: effects of acupuncture on cardiovascular and nervous systems. *Acupuncture & Electro-Therapeut. Res.*, **1**, 51-140.
- Omura, Y. (1975) Electro-acupuncture: its electro-physiological basis and criteria for effectiveness and safety—Part I. *Acupuncture & Electro-Therapeut. Res.*, **1**, 157-181.
- Omura, Y. (1976) Acupuncture, infra-red thermography and Kirlian photography. *Acupuncture & Electro-Therapeut. Res. Int. J.*, **2**, 43-86.
- Richter, J. A., Baum, M., Kinkel, R., Bauerle, A., Heimisch, W., Amereller, H., Schumacher, F., Erdmann, K., and Von Bohuszewicz, U. (1975) Clinical experience with electrical acupuncture analgesia in 125 patients undergoing open heart surgery. *Acupuncture & Electro-Therapeut. Res.*, **1**, 143-156.
- Sato, T., and Nakatani, Y. (1974) Acupuncture for chronic pain in Japan. *Advances in Neurology*, **4**, 813-818.
- Spoerel, W. E., Varkey, M. and Leung, C. Y. (1976) Acupuncture in chronic pain. *Amer. J. Chinese Med.*, **4**, 267-279.
- Stewart, D., Thomson, J., and Oswald, I. (1977) Acupuncture analgesia: an experimental investigation. *British Medical Journal*, **1**, 67-70.
- Wolff, B. B. (1977) The role of laboratory pain induction methods in the systematic study of human pain. *Acupuncture & Electro-Therapeut. Res. Int. J.*, **2**, 271-305.
- Yamauchi, N. (1976) The results of therapeutic acupuncture in a pain clinic. *Canad. Anesth. Soc. J.*, **23**, 196-206.

Abstracts, etc.

- Brown, P. E. Use of acupuncture in major surgery. Extract from *The Lancet*, June 1972.
- Choh-luh, L. Some observations of experimental pain treated with acupuncture—presented at the meeting of the New York Society of Acupuncture for Physicians and Dentists, Inc., held in New York City, January 11-15, 1975.
- Clark, W. C., and Yang, J. Study of pain mechanisms: Acupuncture analgesia and hypnotizability—presented at the meeting of the New York Society of Acupuncture for Physicians and Dentists, Inc., held in New York City, January 11-15, 1975.
- James, B. Mechanism of acupuncture analgesia. Extract from *British Medical Journal*, February 1977.
- Ku, Y. L. Effects of acupuncture on pain threshold in human volunteers—presented at the meeting of the New York Society of Acupuncture for Physicians and Dentists, Inc., held in New York City, January 11-15, 1975.

- Lee, J. F. Death with dignity—treatment of cancer pain with acupuncture—presented at the Third Postgraduate Seminar and Workshop in "Acupuncture and Pain Control", held at the New York University Medical Center, September 24-28, 1975.
- Looney, G. L. A neurologic basis for acupuncture—presented at the meeting of the New York Society of Acupuncture for Physicians and Dentists, Inc., held in New York City, January 11-15, 1975.
- Mann, F. Acupuncture analgesia in dentistry. Extract from *The Lancet*, April 1972.
- Melzack, R. Pain and acupuncture—presented at the Third Postgraduate Seminar and Workshop in "Acupuncture and Pain Control", held at the New York University Medical Center, September 24-28, 1975.
- Omura, Y. Acupuncture, infra-red thermography and Kirlian photography—presented at the Third Postgraduate Seminar and Workshop in "Acupuncture and Pain Control", held at New York University Medical Center, September 24-28, 1975.
- Omura, Y. Electro-acupuncture for drug addiction withdrawal syndrome, particularly methadone, and individualized acupuncture treatments for the withdrawal syndromes of drug addictions and compulsive habits of excessive eating, drinking alcohol and smoking—presented at the meeting of the New York Society of Acupuncture for Physicians and Dentists, Inc., held in New York City, January 11-15, 1975. *Acupuncture & Electro-Therapeutics Research, The International Journal* (1975), 1.
- Pomeranz, B. Brain's opiates at work in acupuncture? *New Scientist*, 6 January 1977.
- Rickards, F. S. Acupuncture analgesia. Extract from *British Medical Journal*, January 1977.
- Ryan, C. Acupuncture for Nevada approved by Senate. *Nevada State Journal*, 29 March 1973.
- Shyh-Jong, Y. Acupuncture for painful neck conditions—presented at the meeting of the New York Society of Acupuncture for Physicians and Dentists, Inc., held in New York City, January 11-15, 1975.
- Teng, P. and Greenfield, W. The effect of acupuncture on sensations other than pain—presented at the meeting of the New York Society of Acupuncture for Physicians and Dentists, Inc., held in New York City, January 11-15, 1975.

Appendix D

Scientific evidence available on the treatment of back pain (listed in date order)

- Coomes, E. N. (1961) A comparison between epidural anaesthesia and bed rest in sciatica. *Brit. med. J.*, **2**, 20-24.
- British Association of Physical Medicine (1966) Pain in the neck and arm: a multicentre trial of the effects of physiotherapy. *Brit. med. J.*, **1**, 253-258.
- Glover, J. R. (1966) A clinical trial of rotational manipulation of the spine in back pain cases occurring in a factory. *Proc. roy. Soc. Med.*, **59**, 847-848.
- Mathews, J. A. (1968) Dynamic discography: a study of lumbar traction. *Ann. phys. Med.*, **9**, 275-279.
- Mathews, J. A., and Yates, D. A. H. (1969) Reduction of lumbar disc prolapse by manipulation. *Brit. med. J.*, **3**, 696-697.
- Dilke, T. F. W., Burry, H. C., and Grahame, R. (1973) Extradural corticosteroid injection in management of lumbar nerve root compression. *Brit. med. J.*, **2**, 635-637.
- Glover, J. R., Morris, J. G., and Khosla, T. (1974) Back Pain: a randomized clinical trial of rotational manipulation of the trunk. *Brit. J. industr. Med.*, **31**, 59-64.
- Kane, R. L., Leymaster, C., Olsen, D., Woolley, F. R., and Fisher, F. D. (1974) Manipulating the patient: a comparison of the effectiveness of physician and chiropractor care. *Lancet*, **1**, 1333-1336.
- Doran, D. M. L., and Newell, D. J. (1975) Manipulation in treatment of low back pain: a multicentre study. *Brit. med. J.*, **2**, 161-164.
(supplemented by a typescript with the same title made available by D. J. Newell)
- Gibson, T., Dilke, T. F. W., and Grahame, R. (1975) Chymoral in the treatment of lumbar disc prolapse. *Rheumatol. and Rehab.*, **14**, 186-190.
- Graham, C. E. (1975) Chemonucleolysis, a preliminary report on the double blind study comparing chemonucleolysis and intradiscal administration of hydrocortisone in the treatment of backache and sciatica. *Orthopedic Clinics of North America*, **6**, 259-263.
- Greenfield, S., Anderson, H., Winickoff, R. N., Morgan, A., and Komaroff, H. L. (1975) Nurse-protocol management of low back pain—outcomes, patient satisfaction and efficiency of primary care. *West J. Med.*, **123**, 350-359.
- Fox, E. J., and Melzack, R. (1976) Transcutaneous electrical stimulation and acupuncture: comparison of treatment for low-back pain. *Pain*, **2**, 141-148.
- Walker, W. R., and Keats, D. M. (1976) An investigation of the therapeutic value of the 'copper bracelet'—dermal assimilation of copper in arthritic/rheumatoid conditions. *Agents and Actions*, **6**, 454-459.
(supplemented by additional material provided by W. R. Walker)
- Bergquist-Ullman, M., and Larsson, U. (1977) Acute low back pain in industry. *Acta Orthopaedica Scandinavica*, Supplement No. 170, 9-117.
- Rutowski, B., Niedzialkowska, T., and Otto, J. (1977) Electrical stimulation in chronic low-back pain. *Brit. J. Anaesth.*, **49**, 629-631.
- Snoek, W., Weber, H., and Jørgensen, B. (1977) Double blind evaluation of

extradural methyl prednisolone for herniated lumbar discs. *Acta Orthop. Scand.*, **48**, 635-641.

Evans, D. P., Burke, M. S., Lloyd, K. N., Roberts, E. D., and Roberts, G. M. (1978) Lumbar spine manipulation on trial Part I—Clinical Assessment. *Rheumatology and Rehabilitation*, **17**, 46-53.

see also:

Roberts, G. M., Roberts, E. E., Lloyd, K. N., Burke, M. S., and Evans, D. P. (1978) Lumbar spinal manipulation on trial Part II—Radiological Assessment. *Rheumatology and Rehabilitation*, **17**, 54-59.

Appendix E

Work in progress on studies related to back pain (supplied on a confidential basis)*

- Ansell, B. M. (Division of Rheumatology, Clinical Research Centre)
- trial of the use of general practitioner services to answer simple questions (e.g. 'does infection precipitate prolonged episodes of back pain?')
 - assessment of patterns of chronic back pain referred to a special clinic
 - assessment of patients referred to a physiotherapy department
 - measurement of spinal movement in adolescents
 - assessment of epidural injections in the management of sciatic pain
- Brewerton, D. A. (Rheumatology Department, Westminster Hospital)
- studies of ankylosing spondylitis and related disorders
- Burke, M. S. (Department of Rheumatology, University Hospital of Wales)
- trial of lumbar spine manipulation
- Davis, P. R. (Department of Human Biology and Health, University of Surrey)
- back injury in industry
- Edwards, F. C. (Health and Safety Executive)
- evaluation of current advice on methods of manual lifting and handling at work with regard to the prevention of back pain
- Evans, C. D. (Rivermead Rehabilitation Centre)
- study of medical and heterodox treatment of low back pain
- Hooper, E. G. (Industrial Relations Department, The Electricity Council)
- report of working group on lifting and handling
- Jayson, M. I. V. (Rheumatology Clinic, Bristol Green Hospital)
- controlled trial of Maitland's mobilization in patients with low back pain
- Jennett, W. B. (Professor of Neurosurgery, University of Glasgow)
- study of the incidence of back symptoms in two working populations
- Kersley, G. D. (Bath)
- experience with a back pain clinic
- Kirkaldy-Willis, W. H. (Professor of Orthopaedic Surgery, University of Saskatchewan)
- pilot study to evaluate work of manipulative (chiropractic) treatment for low back pain
- Meade, T. W. (MRC/DHSS Epidemiology and Medical Care Unit, Northwick Park)
- multicentre controlled trial of physiotherapy in the management of patients with sciatic symptoms. (Coxhead & Troup)
(see also Coxhead, C. E. (1974) A clinical trial of the management of sciatica with or without low back pain. *Physiotherapy*, **60**, 72-74)
- O'Brien, J. P. (Director of Spinal Disorders Unit, Robert Jones & Agnes Hunt Orthopaedic Hospital, Oswestry)
- study of factors influencing disability in steel workers
 - methods of assessment of diagnostic indices in general practice
 - assessment of documentation of clinical parameters of backache in the general population
- Porter, R. W. (Doncaster Royal Infirmary)
- value of ultrasound in the diagnosis of conditions causing low back pain

- Semmence, A. M. (Principal Medical Officer, Medical Adviser's Office)
 — Manchester survey on backache
- Silverman, L. (Oxford Rehabilitation Research Unit)
 — low back pain, a review of the psychological literature
- Stokes, I. A. F. (Oxford Orthopaedic Engineering Centre)
 — low back pain and intra-abdominal pressure studies
 — topographic projects on the spine
- van Straten, M. A. (British Naturopathic and Osteopathic Association)
 — comparison of orthodox and unorthodox therapy in the treatment of back pain
- Sweetman, J. B. (Department of Community Medicine & Department of Rheumatology and Rehabilitation, Guy's Hospital)
 — study of back pain in industry
- Troup, J. D. G. (Department of Orthopaedic Surgery, University of Liverpool)
 — follow-up of patients after treatment or return to work for back or sciatic pain
- Wyke, B. D. (Neurological Unit, Royal College of Surgeons)
 — a back pain research bibliography and neurological mechanisms in back pain
- together with listing of current support by MRC for relevant studies.

*Sources for funding these studies have not been specifically noted, but they include MRC and the Health Department and voluntary organisations like the Arthritis & Rheumatism Council for Research and Tenovus Scotland.

Appendix F

Considerations relevant to therapeutic trials for back pain

F1 General Principles

F1.1 The only acceptable way of resolving uncertainty about any particular remedy or management policy is by the conduct of a controlled trial, with random allocation of study subjects to alternative therapy groups between which the only controllable difference is in the therapy to which the group is exposed.

F1.2 Although the controlled trial is now regarded as the only satisfactory way of evaluating the effectiveness of any treatment, major difficulties in the ease of applying this technique to different areas of health experience are not always appreciated. These are discussed in subsequent paragraphs.

F2 Ethical Aspects

F2.1 The degree of uncertainty about the effectiveness of nearly all methods of attempting to relieve back pain has been noted in the Report. In the face of this uncertainty no serious moral objections can be raised over whether to expose patients to or withhold from them any of the currently advocated methods of treatment. Of course, when proven effective therapies are already available in a particular medical field, a trial evaluating a new therapy cannot be carried out against a placebo for ethical reasons.

F2.2 Another component of the ethics of using any particular treatment is the potential to induce harm. The Report has drawn attention to the fact that this aspect has received insufficient study (Sections 4.7.1 and 10.5).

F2.3 Hitherto there have been ethical difficulties in the way of collaboration between orthodox and heterodox practitioners. It is encouraging that these need no longer be an obstacle to the execution of comparative trials (Report, Section 8.7).

F3 Variation in outcome determined by factors other than the therapeutic procedure

F3.1 *General*

The object of randomization is to ensure, as far as possible, that all the factors that influence outcome, known or unknown, are equally distributed in the groups. In the case of known factors the probability of mischance can be reduced by restricting the intake to a well defined group or by using a stratified design (see Section F4.2). However, if the residual variation generated by non-therapeutic factors is very large, a slight therapeutic effect can be obscured. This is particularly so with trials in which the outcome measure is the relief of pain, which is, of course, the main outcome measure in back pain trials.

F3.2 *Special problems associated with pain relief*

An individual's attitude to pain and its reduction is powerfully influenced by a variety of factors, such as his psychological make-up and his social, cultural, and occupational background, and by the possibility of compensation.

These factors are so important that they deserve independent study. In the meantime safety must be sought by the use of large numbers in the trials.

F3.3 Another possible approach is the use of a cross-over design, where each patient serves as his own control. Each patient is exposed to each of the therapeutic alternatives in a random order. The drawback to this approach is the danger of carry-over effects, which were apparently present in the study by Evans et al. (1978).

F4 Heterogeneity

F4.1 Differences between types of back pain and their underlying causes have also been difficult to identify. Although crude classifications have been employed (e.g. unilateral or bilateral pain, with or without leg pain, with or without neurological signs, etc.) these have proved to be insufficiently precise to produce satisfactory homogeneous sub-groups for trials.

F4.2 Much more attention needs to be directed to empirical differentiation between varieties of back pain being submitted to therapeutic trial, and to formulation of criteria by which these varieties may be identified in a reproducible manner. (A distinct but related problem is communication of results to others, so that the relevance of the results to the reader's patients can be assessed—see Report, Section 8.5.) Homogeneity would also be promoted by restricting eligibility for inclusion in a trial to those with specified characteristics (such as a particular sex or age range) or by adopting a stratified design wherein there is matching, with random allocation within defined subsets (such as particular age and sex groups, or according to factors like occupation or menopausal status).

F5 Difficulties in Assessing Outcome

F5.1 A favourable outcome is the shared desire both of patients and of all concerned with their well-being. This is an important source of bias in recording the end-point after therapy. When therapy is delivered via an anonymous and inanimate intermediary, such as a tablet or an injection, and the effects that are intended can be assessed objectively, then single or double-blind designs can protect against one or both of these influences. With back pain the overriding goal is subjective relief, so that unfortunately this rigour is difficult to achieve.

F5.2 Some degree of bias may be eliminated by ensuring that outcome is assessed professionally by someone other than the individual involved in administering the therapy, and by the use of measures like a visual analogue scale for quantifying pain status after treatment. However, the most relevant measure of outcome is obviously the relief of pain, and this remains notoriously difficult to assess without bias.

F5.3 Assessment of outcome by changes in phenomena associated with the pain can confer advantages in terms of objectivity and reproducibility. The Scientific Committee were particularly impressed by the ingenious use of hyperesthesia mapping for this purpose by Glover (1966). Less directly related measures such as alterations in mobility are vulnerable to discordance in outcome, and all trials using more than one end-point measure pose serious analytical problems when the results are not in agreement. Behavioural

measures are even more problematic. For example, return to work may at first appear to be meaningful in both social and medical terms, and yet it may nevertheless reflect little more than failure to appreciate the complex nature of the problem.

F6 Further Problems

F6.1 The essence of a controlled trial is comparison of effects, either with those of placebo or with those of other effective therapies. Obviously it is important for the trial design to incorporate control for influences associated with use of the therapies under study that are not themselves immediately related to the therapies. One example of this is the amount of bed rest for patients undergoing manipulative treatment. Another is the necessity to distinguish between effects attributable to a therapist rather than to the therapy administered by the therapist; one would like to be able to isolate the influence of features like personal interaction or the laying on of hands from what the hands actually do when they are applied.

F6.2 Great care is necessary to control all aspects of management apart from the therapies under study. This standardization needs to include what is communicated to the patients as well as the manner in which the techniques of therapy are carried out, both of which are particular problems with multi-centre studies like that on manipulation reported by Doran and Newell (1975). Symbolic aspects of therapy are also important so that the use of detuned short-wave diathermy as a control by Glover et al. (1974), although ingenious, nevertheless neglects the significance of physical contact between therapist and patient, independent of the nature of that contact. This is borne out by the apparently greater effect of an active as opposed to a passive placebo in the report by the British Association of Physical Medicine (1966).

F6.3 The readiness with which an individual's pain may be influenced by such factors as the sex, personality, mood, mien, conversation, or lightness of touch of the therapist can create difficulties that call for great care in the interpretation of results. These factors also have wider implications as attempts at standardization and control are particularly necessary for trials carried out simultaneously at different centres, or even by different therapists at the same centre.

F7 General Implications

F7.1 In spite of the difficulties noted the Scientific Committee considered that the problem of back pain is so important that attempts to carry out trials must be supported as a matter of urgency. The overall results of treatment for the milder forms of back pain are cheering from the point of view that most individuals get better whatever is done, but depressing because it appears to be so difficult to establish the effectiveness of all orthodox therapies. Manipulation seems to be the most promising treatment to study, although the sub-groups gaining benefit from such therapy need to be defined more clearly.

F7.2 The planning of controlled therapeutic trials for back pain will need very great care and will be likely to take a considerable time. It will not be easy to find ways of circumventing the difficulties that have been identified. Furthermore, dialogue between orthodox and heterodox practitioners is likely to be somewhat protracted, as differences in language and concepts are resolved.

However, on this basis it should be possible to develop agreed study protocols, providing close contact is maintained with statisticians and epidemiologists experienced in the design and execution of trials. It is in order to facilitate and promote these efforts that the Working Group has recommended establishment of an expert panel to advise DHSS (Report, Section 10.9 (ii)).

F7.3 There is, nevertheless, a fundamental dilemma. Certainly it is theoretically possible for randomization to control for unknown variation that is not related to treatment (Section F3.1, above). However, this can be accomplished only by the study of very large samples (drawing on experience in other branches of medicine, these may need to be of the order of 500 pairs or more). Studies of such magnitude would give rise to problems with the instability of assessments, either because of involvement of multiple centres or multiple therapists (Section F6.3, above) or, if these were limited, to instability over time within the same observers; the time scale of the latter alternative would also create its own difficulties in regard to aspects such as sustaining commitment to the study. The remedy may well be to start with more limited objectives, using experimental designs in an attempt to estimate the magnitude of the variations contributed by the various classes of factor noted in Section F3.2 (above), before embarking on a comparison of the effects of different therapies.

F8 Previous Experience

F8.1 The Scientific Committee was impressed by the difficulty encountered in trying to discover all the published trials relevant to back pain. The Committee is not even sure that it has succeeded in finding them all. There is a crying need for a critical summary of relevant trials to be available to every branch of medicine, and for this to be updated periodically. The Scientific Committee recommended that action be taken to overcome this problem.

F8.2 Although critical of many of the trials that have been published, the Scientific Committee wishes to express its admiration of the authors for venturing into this difficult field. They have at least helped to pinpoint the problems.

F8.3 The Scientific Committee did not consider it necessary to comment in detail in this Appendix on each of the trials it had reviewed. Nevertheless there are a number of points to which attention should be drawn.

F8.3.1 The best trials of the milder forms of back pain have been noted earlier in this Appendix (Sections F3.3, F5.3, and F6.2).

F8.3.2 As regards the more severe types of back pain the most striking findings were in the two trials of epidural injection therapy (Coomes, 1961, and Dilke et al, 1973). The principal criticisms these reports attracted were that the types of patient treated were defined inadequately, and that the comparative effect of injecting material like normal saline was not studied—an omission later remedied by Snoek et al (1977). The Scientific Committee was perplexed about the reasons why these reports had not had a greater influence on practice.

F8.3.3 It would be unfair not to mention the study of the effects of copper bracelets by Walker and Keats (1976). The results seemed to be impressive,

although the Scientific Committee remained sceptical; the study needs to be repeated in a better defined group of patients.

(papers cited in this Appendix are included in Appendix D).

Appendix G

Proposals for studies to document existing services for back pain

G1 Primary Care in Industry

G1.1 Published information on existing services for back pain in industry is scarce. Inquiries indicated that the quality of retrospective data on the use of such services, even where obtainable, would be of variable quality. Prospective collection of data was considered practicable and Dr Edwards organized a three month pilot study in 1978 to provide limited but detailed information from occupational health services in those industries which kindly agreed to co-operate. A report on this survey is at Annexe 1, together with the questionnaire that was used.

G1.2 From information collected for the recent Employment Medical Advisory Service survey of occupational health services in a sample of industries (December 1977*) it is not possible to make an estimate of existing services specifically for the treatment or investigation of back pain. It is therefore recommended that a national survey of all members of the Society of Occupational Medicine would be the most satisfactory and economical way of supplementing the sparse background information on existing services. Such a survey would involve the issue and processing of 1,250 questionnaires. The recommended questionnaire for the survey is at Annexe 2.

G2 Primary Care in General Practice

G2.1 Probably the great majority of those who seek help in the treatment of their back pain first consult their general practitioners. Very little information is available on what facilities exist to assist general practitioners in their diagnosis and management of back pain or on what facilities they would like to have.

G2.2 With the assistance of the Scottish General Practitioner Research Support Unit, for whose co-operation the Existing Provision Committee is most grateful, a survey financed by the Scottish Home and Health Department was conducted between March and July 1977 into the practices of twenty-five general practitioners in Scotland. This survey covered the management of individual patients and the facilities available to assist the general practitioners in that management. A condensed version of the report, less appendices, is at Annexe 3.

G2.3 The pilot survey indicated that there appeared to be sufficient interest among general practitioners to justify a national survey of the facilities available to them, but it is not considered that a prospective survey of the management

*'Prevention and Health, Occupational Health Services, The Way Ahead.' A discussion document issued by the Health and Safety Commission, London: Her Majesty's Stationery Office, 1977.

of individual cases over a given period could be justified on a national scale. What is recommended is that a simplified version of the available facilities questionnaire used in the pilot survey should be sent to a random selection of ten per cent of general practitioners in England and Scotland. The Existing Provision Committee consider that no worthwhile answer to the Working Group's first term of reference can be obtained without this minimal survey. The recommended questionnaire is at Annexe 4.

G3 Specialist Services

G3.1 A number of hospital specialties are involved in the investigation and treatment of back pain. Referrals to relevant consultants by general practitioners may well be dictated as much by the length of waiting times for consultant appointments as by the judgement of individual general practitioners in deciding what kind of specialist assistance is required. Investigation and treatment patterns are therefore likely to vary with the availability of consultant time and individual interests in back pain.

G3.2 In order that the differing patterns of hospital services for the investigation and treatment of back pain may be identified, the Existing Provision Committee recommends that a survey be conducted of all relevant consultants over a three month period, following discussions directed to securing the co-operation of the professional organizations of which the consultants are members. The recommended questionnaire for the survey is at Annexe 5.

G4 Ancillary Services: Radiography and Radiology

G4.1 There is a need to establish the extent to which X-rays of the lumbar spine sought by general practitioners for their patients with back pain actually assist in diagnosis and confer overall benefit, as opposed to their possible role as a means of buying time and satisfying the patient that treatment is being given.

G4.2 Dr Park, with the assistance of Dr C. J. Bulpitt, Epidemiologist at the London School of Hygiene and Tropical Medicine, has conducted two parallel pilot surveys of radiologists in ten teaching and ten non-teaching hospitals. These elicited information on the work loads of individual radiological departments over a period of one week, and provided data on patients referred for lumbar spine X-rays in the same departments during the same one-week period. The results of this survey will be passed to the Health Departments. The Existing Provision Committee recommends that the work be augmented by a wider survey making use of the same questionnaires, adapted as may be suggested by the results of the pilot survey, to cover a 30 per cent randomly selected sample of the approximately 1,300 active radiologists on the Register of the Royal College of Radiologists. This survey would resemble that conducted by the Royal College of Obstetricians and Gynaecologists (*British Medical Journal*, 11 March 1978). The recommended questionnaires are at Annexes 6 and 7.

G5 Ancillary Services: Physiotherapy

G5.1 The indications are that the patterns of involvement of hospital physiotherapy departments in the treatment of back pain, and the nature of the

treatments provided in response to consultant or direct general practitioner referral, vary considerably. Such are the variations, particularly in the types of therapy, that, in the opinion of the Existing Provision Committee, a limited and selective survey of physiotherapy departments would not provide sufficient information on which to base firm conclusions. It is therefore recommended that a survey be conducted which covers all hospital physiotherapy departments. The recommended questionnaire is at Annexe 8.

G6 General Comments

G6.1 The Existing Provision Committee recognises that its questionnaires represent relatively superficial enquiries, but it has been deterred from proposing more exhaustive surveys by the likely high cost and by recognition that only simple questionnaires which do not involve great expenditure of time are likely to be answered. The results of the pilot surveys have encouraged it to expect similarly good responses from the other surveys proposed.

Preliminary Report on Pilot Study of Facilities for Back Pain in Industry

A1.1 Introduction

The Existing Provision Committee agreed a simple questionnaire (attached) to be used as a means of acquiring preliminary information to indicate the type of services available to employees suffering from back pain, and also the way in which these services might be used. The enquiry concentrated on radiographic and treatment facilities at the place of work, use of NHS services, and the length of sickness absence from work due to back pain.

A1.2 Method

The questionnaire was designed for administration by selected occupational health departments (OHD) during the first quarter of 1978 to all persons who suffered from back pain with or without leg pain and who either presented or were referred to the OHD or who were given a health interview by the OHD on return to work after a spell of sickness absence due to this cause. The OHDs agreeing to take part included the car manufacturing industry (Vauxhall and British Leyland), British Steel Corporation, Guest Keen and Nettlefold, National Coal Board, the food manufacturing industry (General Foods and Cadbury-Schweppes), Central Electricity Generating Board, the chemical industry (Albright and Wilson), Standard Telephone and Cables, three group Industrial Health Services, and a university health service. The completed data are to be processed and analysed by Stuart Computer Services Limited.

A1.3 The Pilot Study

Thirty OHDs were issued with questionnaires, and by June 1978 responses had been received from 20. The total work force covered by these 20 OHDs is approximately 118,500, of whom 11,500 are employed by the National Coal Board (NCB). Persons with back pain seen during the period amounted to 1.1 per cent of the work force, though the rate was much higher in miners (3.5 per cent in NCB, compared with 0.8 per cent in the other industries). It must be appreciated that the overall incidence and prevalence of back pain in this work force is unknown; the rates quoted relate only to cases actually seen by OHDs during the study period.

A1.4 Services Available

Certain types of physiotherapy (various forms of heat treatment, exercise, and massage) were offered by the majority of the responding OHDs; only two departments offered none of these services. Manipulation and traction were practised occasionally in about a quarter of OHDs, and facilities for X-raying the lumbar spine were available in a similar proportion.

A1.5 Indicative Results

Only a part of the data has been examined, and that not in detail. However, the preliminary results give some indication of the situation.

A1.5.1 OHDs offering Treatment

Three OHDs covering a fifth of the work force reported in A1.3 (above), and excluding mining, have been analysed. All three departments offered physiotherapy, and these services were used in about half the cases presenting. In only one OHD were radiographic facilities available, but these were not used during the 3-month study period. The rates with which cases were seen by the three OHDs ranged from 0.7 to 2.8 per cent. Of the 215 seen three-quarters presented to the OHD with back pain; the remainder were interviewed on return from sickness absence. Of those presenting half were treated at work; one in eight of those treated and just under half those not offered treatment were referred to NHS services, mostly to general practitioners.

A1.5.2 OHDs not offering Treatment

Two OHDs have been analysed, but these covered only 2,750 employees. The rates with which cases were seen were 0.8 and 2.0 per cent, but the latter proportion is based on a very small sample. Half the cases seen presented with back pain and all but one were referred to their general practitioner; the remaining cases were interviewed on return from sickness absence.

A1.6 Conclusions

In this preliminary survey it was not felt possible to distinguish either the severity or the chronicity of the conditions encountered; clearly the more severe and more acute cases would tend to be treated or referred more promptly. Detailed analyses of sickness absence and utilization of NHS services in relation to the facilities available at the place of work can be carried out only when data processing has been completed. However, it is worth noting a preliminary impression, even though it is not possible to be definite at this stage. In the data analysed so far there is a suggestion that many of those not given treatment at the place of work had only short periods of sickness absence; one might reasonably infer that some of these, presumably milder, cases might have benefited from treatment at work, and that if this had been available they might have been able to stay at work without a short spell of sickness absence.

The Existing Provision Committee is appreciative of the co-operation by the staff of the OHDs that agreed to take part in this exercise.

Felicity C Edwards

July 1978

QUESTIONNAIRE FOR THREE MONTH PROSPECTIVE STUDY

A—Details of Industry

Please complete this sheet where appropriate and return it at the end of the three months (1 January 1978—31 March 1978)

INDUSTRY:

SECTION:

TOTAL NUMBER OF WORKFORCE AT RISK:

NUMBER OF EMPLOYEES INCLUDED IN THREE MONTH PERIOD:

(1) Referrals to Occupational Health Department

(2) Interviews on return after sickness absence

MINIMUM LENGTH OF SICKNESS ABSENCE, after
which employees are normally interviewed on return to
work in your industry:

WHICH OF THE FOLLOWING FACILITIES ARE AVAILABLE IN YOUR INDUSTRY?

TREATMENT

Physiotherapy

Exercise

Heat

Massage

Manipulation

Other (please specify)

X-RAY FACILITIES for the lumbar spine

The questionnaires were completed by Occupational Health Nursing staff/other
(please specify)

Occupational physician:

Date:

B—Individual Care Details

Forms for prospective collection of data in cases of *back pain, with or without leg pain*, during the three months 1 January 1978—31 March 1978.

Page 1 could be completed for every case presenting to the Occupational Health Department.

Page 1 and 2 to be completed for each case at the routine interview on return to work after your given period of sickness absence.

OCCUPATION:

AGE SEX
1 2 3

DIAGNOSIS:

4-7

(Leave boxes
4-8 blank)

PRECIPITATING FACTORS (e.g. injury):

☐ 8

TREATMENT GIVEN AT WORK:

No ☐ Yes ☐ 9

Physiotherapy

No ☐ Yes ☐ 10

Exercise

☐ 11

Heat

☐ 12

Massage

☐ 13

Manipulation

No ☐ Yes ☐ 14

Other (please specify)

No ☐ Yes ☐ 15

X-RAYS OF LUMBAR SPINE DONE AT WORK:

No ☐ Yes ☐ 16

REFERRED FROM WORK TO: General practitioner

No ☐ Yes ☐ 17

Hospital

No ☐ Yes ☐ 18

Other (please specify)

No ☐ Yes ☐ 19

SPINAL X-RAYS ARRANGED BY GENERAL PRACTITIONER:	No <input type="checkbox"/>	Yes <input type="checkbox"/>	20
DOMICILIARY VISIT BY CONSULTANT:	No <input type="checkbox"/>	Yes <input type="checkbox"/>	21
HOME TREATMENT (please specify details):	No <input type="checkbox"/>	Yes <input type="checkbox"/>	22
Medication		<input type="checkbox"/>	23
Bed rest		<input type="checkbox"/>	24
Traction		<input type="checkbox"/>	25
Spinal 'support'		<input type="checkbox"/>	26
Physiotherapy		<input type="checkbox"/>	27
Manipulation		<input type="checkbox"/>	28
Injection		<input type="checkbox"/>	29
Other (please specify)		<input type="checkbox"/>	30

HOSPITAL TREATMENT (please specify details):	No <input type="checkbox"/>	Yes <input type="checkbox"/>	31
(In-patient or out-patient)		IP OP	
Medication	32	<input type="checkbox"/>	33
Bed rest	34	<input type="checkbox"/>	35
Traction	36	<input type="checkbox"/>	37
Spinal 'support'	38	<input type="checkbox"/>	39
Physiotherapy	40	<input type="checkbox"/>	41
Manipulation	42	<input type="checkbox"/>	43
Injection	44	<input type="checkbox"/>	45
Other (please specify)	46	<input type="checkbox"/>	47
Surgery			
	No <input type="checkbox"/>	Yes <input type="checkbox"/>	48

TOTAL IN-PATIENT PERIOD IN WEEKS:	49	<input type="checkbox"/>	50
SPECIALIST DEPARTMENT ATTENDED (e.g. neuro/ortho/rheumat):		<input type="checkbox"/>	51

NUMBER OF WEEKS BETWEEN FIRST DATE OF SICKNESS ABSENCE AND:

(1) first X-ray		52	<input type="checkbox"/>	53
(2) start of treatment — at home	(If less than a week, code as one week)	54	<input type="checkbox"/>	55
— at hospital		56	<input type="checkbox"/>	57
(3) seeing a consultant — at home		58	<input type="checkbox"/>	59
— at hospital		60	<input type="checkbox"/>	61

TOTAL LENGTH OF SICKNESS ABSENCE IN WEEKS:	62	<input type="checkbox"/>	63
--------------------------------------------	----	--------------------------	----

QUESTIONNAIRE ON EXISTING SERVICES WITHIN INDUSTRY

Do not
complete
these boxes

INDUSTRY OR FIRM

ADDRESS

IN WHICH AREA HEALTH AUTHORITY IS THIS?

--	--

NUMBER OF EMPLOYEES:

--	--

Manual

--	--

Non-manual

--	--

--	--

WHICH OF THE FOLLOWING FACILITIES ARE AVAILABLE IN YOUR
INDUSTRY/FIRM FOR THE TREATMENT AND INVESTIGATION
OF LOW BACK PAIN?
(please tick as appropriate)

TREATMENT	YES	NO	
Physiotherapy			<input type="checkbox"/>
Manipulation			<input type="checkbox"/>
Traction			<input type="checkbox"/>
Other			<input type="checkbox"/>
Do you have trained physiotherapy staff?			<input type="checkbox"/>
Are such treatments ever given by other staff?			
Doctors			<input type="checkbox"/>
Nurses			<input type="checkbox"/>
Other			<input type="checkbox"/>
INVESTIGATION			
Spinal X-ray facilities (lower back)			<input type="checkbox"/>
Do you have a standard protocol for dealing with back pain? (If so, please attach details)			<input type="checkbox"/>
Do you use any pre-employment screening of the back? (If so, please attach details)			<input type="checkbox"/>
Do you have a programme of instruction in techniques of manual lifting and handling? (If so, please attach details)			<input type="checkbox"/>
Do you think such a programme of use in the prevention of back trouble?			<input type="checkbox"/>

Signature:

Date:

Name (in block capitals):.....

Position held:.....

Condensed Report on Pilot Survey of Facilities for Back Pain available to General Practitioners

A3.1 Introduction

The Scottish General Practitioner Research Support Unit (RSU) was invited to assist the DHSS Working Group on Back Pain by carrying out preliminary studies in general practice with the active participation of NHS principals. The project, funded by SHHD and co-ordinated by the RSU, was carried out during the months March to July 1977.

A3.2 Aims of the Studies

The project had the following aims:

- (a) To devise a form to collect data likely to give the greatest information about diagnosis and management of the types of backache commonly seen in general practice by general practitioners;
- (b) To devise a means of collecting this information without disrupting the normal running of general practice consultations;
- (c) To devise a form to collect data likely to give valid professional general practitioner opinion on the availability and functioning of various services relevant to diagnosis and management;
- (d) To define broadly the sort of problems likely to be encountered in a larger study, and to indicate the sort of results likely to be achieved.

A3.3 Method

A3.3.1 Forty general practitioners working in different practices, which had collaborated with the RSU in the past, were invited to assist in the project. It was intended to carry out the study in two phases:

Phase 1: Collection of information about each of a series of consultations occasioned by a patient with a main complaint of backache;

Phase 2: Obtaining professional opinions about services.

Twenty-five doctors indicated their willingness to help, and in the event 19 participated fully.

A3.3.2 In any proposed national study considerable attention will need to be paid to recruiting participating doctors. Those who co-operated did so without the offer of a fee for the considerable effort they put into the studies; they were motivated solely by their interest and desire to help with this enquiry. Their observations will be subject to bias of various kinds but this cannot be avoided. If a similar exercise is to be conducted nationally, an estimated £25 per participating doctor (to cover secretarial and other expenses at practice level) should be incorporated into the budget.

A3.4 Diagnosis and Management (Phase 1)

A3.4.1 The RSU devised a draft questionnaire for use by participating general practitioners at the consultation. Doctors were invited to comment upon the

form at a briefing meeting. As a result of the first meeting, the procedure to be adopted was agreed and the data capture form was finalised.

A3.4.2 This exercise proved to be vital to the success of the project. The participants, some of whom travelled considerable distances to attend, were made to feel they had some investment in the project and the co-ordinators learned much that was helpful for implementing the project. The main study should follow a similar pattern, with a named "recorder" responsible for each of a number of general practitioners in different areas. Appropriate allowance must be made for hospitality at such a briefing meeting.

A3.4.3 The participants returned completed forms by post at the end of the period of recording, April 1977. The estimation of up to 10 forms per participant was too low in two instances and 15 forms/doctor/month would be more than enough to cover a normal practice. Some participants had to be reminded to send in the forms.

A3.4.4 Ensuring the completeness of returns will be an important task for the recorder. While anonymity must be assured for the patient, the identity of each doctor must be known so that questions about responses on individual forms can be cross-checked. Failure to ensure this led to difficulties with Phase 2, obtaining opinions on services.

A3.4.5 RESULTS

Participants were invited to a meeting at which results of the survey were discussed. The important part of this exercise concerned comments on the form. The approach to obtaining information adopted in fact provided a good picture of new episodes. It was much less helpful in defining the on-going and chronic problem; at best, an inadequate cross-sectional view was obtained of diagnostic and management moves in these cases. It is strongly recommended that any proposed national study using the method piloted here to collect data on all doctor-patient contacts relating to back pain should focus attention on analysing the data relating to new episodes only, and augment the data in recurrent and chronic back problems by record-linked in-depth studies. This is necessary to prevent a distorted picture of the chronic back problem from emerging.

A3.5 *Services (Phase 2)*

The pilot study to survey general practitioner views of services was carried out as a separate exercise by postal questionnaire with a covering letter. There is no reason why the questionnaire devised by Dr Barker, and modified by the RSU (Annexe 4), should not be distributed with patient data forms at the first meeting. The covering letter used for the postal survey could be suitably amended to form the initial approach to enlist the co-operation of interested general practitioners. Participants seemed to approve of both the covering letter and the questionnaire in general. Detailed comments by general practitioners on the proposed questionnaire are available in the full Report from the RSU.

A3.6 *Summary*

This pilot project confirms the view that low back pain is a common problem about which remarkably little has been contributed to the literature by general

practitioners. It is possible to obtain useful information by encouraging general practitioners to co-operate and by making appropriate resources available. There appears to be sufficient interest among general practitioners to allow a National Study to go forward with a reasonable prospect of achieving a good descriptive analysis of salient problems at patient level and at the level of the organization of services.

The Research Support Unit acknowledges the help given by the participating general practitioners, Dr R. Covell, SHHD, and the Chief Scientist Organization.

J D E Knox
D W Dingwall
B S Hogg
July 1977

QUESTIONNAIRE ON FACILITIES AVAILABLE LOCALLY TO GENERAL PRACTITIONERS

1. NAME AND ADDRESS

Please tick the appropriate box

- | | | | |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----------------------------|
| 2. | Have you direct access to NHS Physiotherapy? | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| 3. | Have you open access to the full range of X-ray facilities <i>you</i> need to investigate back pain? | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| 4. | Are any laboratory tests which <i>you</i> would use in the diagnosis of back pain not available to you? | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| 5. | Would it help you if you were able to prescribe a standard lumbosacral support? | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| 6. | Would you like to be able to supply repeat prescriptions for surgical corsets initially prescribed by your local consultant? | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| 7. | Do you think that propaganda campaigns are useful in prevention of back disorders? | | |
| | 1. Nationally in the media | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| | 2. In GP waiting rooms | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| | 3. In Schools | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| | 4. In Industry | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| 8. | A number of heterodox practitioners operate outside the NHS. Would you like to be able to refer patients to these practitioners without ethical bar? | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| 9. | Have you ready access to an out-patient clinic in? | | |
| | Neurology | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| | Neurosurgery | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| | Orthopaedics | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| | Rheumatology | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| | Rehabilitation | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| | Intractable Pain | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| 10. | Which clinic do you feel best suits the patients referred for the first time with a back pain problem? (Please tick first preference) | | |
| | Neurology | <input type="checkbox"/> | |

- Neurosurgery ☐
- Orthopaedics ☐
- Rehabilitation ☐
- Rheumatology ☐
- Intractable Pain ☐

11. Can you estimate in weeks how long your back pain patients have to wait for an out-patient appointment?
12. Would you like to comment specifically on the services available for back pain patients in your area?
If so please use this space: .

QUESTIONNAIRE ON HOSPITAL SPECIALIST SERVICES

This form was designed to survey the existing provision for the investigation and treatment of low back pain with or without sciatica over a period. It is appreciated that hospital medical staff are busy people and, rather than count all your department's out-patient attendances, please could you survey the cases for which you are personally responsible to provide your average weekly figures by intermittent sampling? However, if more accurate figures of in-patient admissions can be obtained this would be of considerable benefit to the Existing Provision Committee.

HOSPITAL CONSULTANT SURVEY (Please tick one of the appropriate boxes)

Speciality—

Neurology ☐ Neurosurgery ☐ Orthopaedics ☐Rheumatology ☐ Rehabilitation ☐ Pain Clinic ☐Average Number of all new Out-patients per week Average Number of all return Out-patients per week Average Number of new Out-patients per week with back or back and leg pain Average Number of return Out-patients per week with back or back and leg pain Average Number of In-patients admitted with back pain or back and leg pain per week Average waiting time for all back pain Out-patients in weeks Average waiting time for all back pain In-patients in weeks

INVESTIGATIONS USED

Routine

Occasional

Never

Not Available

Haematological ☐ ☐ ☐ ☐Biochemical ☐ ☐ ☐ ☐Immunological ☐ ☐ ☐ ☐Standard Radiological X-Rays,
AP and Lateral ☐ ☐ ☐ ☐Standard X-Rays, Oblique ☐ ☐ ☐ ☐Myelography or
Radiculography ☐ ☐ ☐ ☐Venography ☐ ☐ ☐ ☐Discography ☐ ☐ ☐ ☐Tomography ☐ ☐ ☐ ☐Electromyography ☐ ☐ ☐ ☐Bone Scans (Scintigraphy) ☐ ☐ ☐ ☐Others (Specify)— ☐ ☐ ☐ ☐

TREATMENTS USED — contd. Routine Occasional Never Not Available

Medical Therapy

Analgesics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Muscle Relaxants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anti-inflammatory drugs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bed Rest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bed Rest and Traction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Physiotherapy and Physical Treatment

Heat or Local Physical Treatment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intermittent Traction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exercises	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manipulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Epidural Injection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Surgical

Discectomy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Decompression	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fusion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rhizotomy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Foraminotomy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (Specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Support

'Instant' Corset	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lumbo-Sacral Support (Individually Tailored)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brace	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plaster Jacket	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other Treatments (Please List)

QUESTIONNAIRE ON RADIOLOGICAL FACILITIES

For office purposes

☐☐☐

1-3

D ☐☐☐☐☐☐

4-9

PLEASE ANSWER THE QUESTIONS BY TICKING OR COMPLETING THE APPROPRIATE BOXES.

Ignore the numbers! They are for coding your replies.

PERIOD OF SURVEY: One week from Monday until Sunday

TOTAL X-RAY EXAMINATIONS:

Total lumbar X-ray examinations during period of survey including special procedures.

☐☐☐☐

10-13

Total X-ray examinations of all types for the period of survey.

☐☐☐☐

14-17

TYPES OF X-RAY EXAMINATIONS: Please tick if available.

Oil Myelography ☐ 18Water Soluble ☐ 19Lumbar Venography ☐ 20Radiculography ☐ 21Discography ☐ 21Radioisotope Scan ☐ 22Other (Specify) ☐ 23

WAITING TIME FOR X-RAY EXAMINATION: (LUMBAR SPINE ONLY)

*Standard (Simple) Examination**Special Procedure (Non-urgent cases)*None ☐ 1 24None ☐ 1 25Up to 7 Days ☐ 2 24Up to 7 Days ☐ 2 258 to 28 Days ☐ 3 248 to 28 Days ☐ 3 25Over 28 Days ☐ 4 24Over 28 Days ☐ 4 25

Is it usual practice for the hospital clinician to see the X-ray films with the patient on the day of the clinic attendance? (Lumbar Spine only)

☐ YES 1 26☐ NO 2 26

SPECIAL POINTS: (Your observations will be appreciated)

Estimated Production Cost of Standard Examinations (Excluding Radiologists' Interpretation and Capital Equipment Costs)

£ ☐☐☐

27-28

Estimated Production Cost of Special Procedures (Excluding Radiologists' Interpretation and Capital Equipment Costs)

£ ☐☐☐

29-31

☐ 7

80

QUESTIONNAIRE ON UTILIZATION OF RADIOGRAPHS

For office purposes

☐☐☐ 1-3☐☐☐☐☐☐ 4-9

PLEASE ANSWER THE QUESTIONS BY TICKING APPROPRIATE BOXES

Ignore the numbers! They are for coding your replies.

☐☐ 10-11

Period of Survey: One week from Monday until Sunday

PATIENT IDENTIFICATION:

SEX: Male ☐ 1:12Female ☐ 2:12Age (Years) ☐☐ 13-14

SOURCE OF REQUEST:

General Practitioner ☐ 1:15Rheumatology ☐ 3:15Neurosurgery ☐ 5:15

Orthopaedic (Including

Accident & Emergency) ☐ 2:15Neurology ☐ 4:15Other (Specify) ☐ 6:15PROVISIONAL DIAGNOSIS
ON REQUEST CARD:Not Stated ☐ 1/2 16Back Pain (Including Lumbago) ☐ 1/2 18Leg Pain (Including Sciatica) ☐ 1/2 20Exclude Neoplasm ☐ 1/2 22Back Pain + Sciatica ☐ 1/2 17Prolapsed Disc (or exclusion) ☐ 1/2 19Exclude Fracture ☐ 1/2 21Other (Specify) ☐ 1/2 23

RADIOGRAPHS TAKEN:

Antero-Posterior ☐ 1/2 24Lateral ☐ 1/2 26Coned Lumbo-Sacral ☐ 1/2 28Obliques ☐ 1/2 30Flexion/Extension ☐ 1/2 32Other ☐ 1/2 34

(E.G. S.I. Joints)

SPECIAL PROCEDURE:

Tomography ☐ 1/2 25Radiculography ☐ 1/2 27Oil Myelography ☐ 1/2 29Lumbar Venography ☐ 1/2 31Discography ☐ 1/2 33Radioisotope Scan ☐ 1/2 35Other (Specify) ☐ 1/2 36

RADIOLOGICAL FINDINGS:

Specific: Fracture ☐ 1/2 37Infection ☐ 1/2 38Neoplasm ☐ 1/2 39Spondylolisthesis ☐ 1/2 40Osteoporosis ☐ 1/2 41Ankylosing Spondylitis ☐ 1/2 42Disc Prolapse ☐ 1/2 43Spinal Stenosis ☐ 1/2 44Other (Specify) ☐ 1/2 45Pagets ☐ 1/2 46Normal ☐ 1/2 47*Non-Specific:* Spondylolysis ☐ 1/2 48Facet Arthrosis ☐ 1/2 49Lordosis ☐ 1/2 50Scoliosis ☐ 1/2 51Spondylosis (Including Single Disc Narrowing) ☐ 1/2 52Other (Specify) ☐ 1/2 53*Incidental:* Spina Bifida ☐ 1/2 54Lumbarisation ☐ 1/2 55Sacralisation ☐ 1/2 56Occulta ☐ 1/2 57Schmorl's Node ☐ 1/2 58Renal Calculus ☐ 1/2 59Disc Calcification ☐ 1/2 57Other (Specify) ☐ 1/2 60☐ 2 80

QUESTIONNAIRE ON PHYSIOTHERAPY SERVICES

For office purposes

☐☐☐☐☐☐ 1-6

PERIOD OF SURVEY: THREE MONTHS FROM TO INCLUSIVE

(Please tick or enter the numbers applicable in the appropriate boxes.

Where numbers are required the final digit should be in the right-hand box thus: ☐☐☒☐☐☐)

1. How many cases of low back pain and/or leg pain have been referred for physiotherapy during the period:

a. Conservative or pre-operative

☐☐☐ 7-9

b. Post-operative

☐☐☐ 10-12

(operative intervention implies major surgical procedure)

2. How many of these referrals were from:

a. Orthopaedic Department

☐☐☐ 13-15

b. Rheumatology Department

☐☐☐ 16-18

c. Neurology Department

☐☐☐ 19-21

d. Neurosurgery Department

☐☐☐ 22-24

e. A General Practitioner directly

☐☐☐ 25-27

3. If the following services are provided by physiotherapists at your hospital, please tick the appropriate boxes:

a. Localised Manual Vertebral Mobilisation (Grades I-IV)

☐ $\frac{1}{2}$ 28

b. Localised Manipulation (Grade V)

☐ $\frac{1}{2}$ 29

c. Traction

☐ $\frac{1}{2}$ 30

d. Exercises (all types)

☐ $\frac{1}{2}$ 31

e. Individual Posture and Ergonomic Advice

☐ $\frac{1}{2}$ 32

f. Group Training in Ergonomics Handling and Lifting

☐ $\frac{1}{2}$ 33

g. Adjunct Treatments (Heat, Ice, SWD, Microwave, Ultrasonic, etc)

☐ $\frac{1}{2}$ 34

Appendix G—Annexe 8 (continued)

4. If the following supports are available, please state the numbers provided for your own patients in the 3 month period specified:

☐☐☐ 35-37

- a. "Instant" corset (i.e. corset from supply available in the Physiotherapy Department for temporary loan or for permanent use on the payment of the prescribed cost.

☐☐☐ 38-40

- b. Individually tailored lumbar support prescribed by a consultant and obtained through the Appliance Officer.

☐☐☐ 41-43

- c. Plaster of Paris jacket.

☐☐☐ 44-46

5. What is the average time a patient must wait for a support prescribed by a consultant from the date of prescription? (Time in weeks)

☐☐ 47-49

6. If you have any general comments to offer on the services you provide or the difficulties you encounter in not being able to provide certain services at your hospital, please record these briefly below.

UNIT 1: THE ENGINEERING PROCESS

1.1 Introduction

1.1.1 The Engineering Process

The engineering process is a systematic approach to the design and development of products and systems. It involves a series of steps that are repeated and refined as the project progresses.

- 1.1.1.1 Identify the problem or need.
- 1.1.1.2 Define the requirements.
- 1.1.1.3 Develop a concept.
- 1.1.1.4 Produce a design.
- 1.1.1.5 Construct a prototype.
- 1.1.1.6 Test and evaluate.
- 1.1.1.7 Refine the design.
- 1.1.1.8 Produce the final product.

1.1.2 The Engineering Process

The engineering process is a systematic approach to the design and development of products and systems. It involves a series of steps that are repeated and refined as the project progresses.

1.1.3 The Engineering Process

1.1.3.1 The Engineering Process

1.1.3.2 The Engineering Process

1.1.3.3 The Engineering Process

1.1.3.4 The Engineering Process

1.1.3.5 The Engineering Process

1.1.4 The Engineering Process

The engineering process is a systematic approach to the design and development of products and systems. It involves a series of steps that are repeated and refined as the project progresses.

1.1.5 The Engineering Process

1.1.5.1 The Engineering Process

1.1.5.2 The Engineering Process

1.1.5.3 The Engineering Process

1.1.5.4 The Engineering Process

1.1.5.5 The Engineering Process

1.1.5.6 The Engineering Process

1.1.5.7 The Engineering Process

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