



The costs and benefits of active case management and rehabilitation for musculoskeletal disorders

Prepared by **Hu-Tech Associates Ltd**
for the Health and Safety Executive 2006

RESEARCH REPORT 493



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The cost of musculoskeletal disorders (MSDs) to employers is significant, with the most substantial cost component being lost time from work. This study sought to identify the evidence on cost-effective case management and rehabilitation principles for MSDs that could be applied by employers and healthcare providers to help those with MSDs stay in work or return to work.

An extensive literature review was undertaken which focused on high quality international scientific studies. There is good evidence that case management methods are cost-effective and stronger evidence that best practice rehabilitation approaches have potential to significantly reduce long term sickness absence. The review identified that programmes using case management and rehabilitation principles can be an effective intervention, and have been widely adopted in various industrialised countries. The key components for successful programmes were identified from the literature. Consultation (questionnaire and focus groups) with UK healthcare professionals and organisations indicated that a wide range of programmes were being implemented, although the structure and scope varied. Over a third of respondents had started their programmes in the last three years. The programmes were perceived to be effective, although few had cost benefit information to support this. Where organisations did have information on the costs and benefits of their programmes this suggested that they are cost effective. Through discussion with organisations the practicality of implementing these programmes, and obstacles to doing so, were identified.

An evidence-base model for managing workers with MSDs was developed based on this information. Consultation on the model with potential users suggested that it would be useful, and minor modifications were made to it based on feedback. The model is generally applicable to all types of organisation in the UK, and is relevant for all types of MSDs. It describes the principles to apply in order to integrate case management and rehabilitation with the workplace. This report includes the model and details the research that led to its development.

This report and the work it describes were funded by the Health and Safety Executive (HSE). Its contents, including any opinions and/or conclusions expressed, are those of the authors alone and do not necessarily reflect HSE policy.

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First published 2006

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ACKNOWLEDGEMENTS

The authors would like to thank all professionals, individuals, organisations and researchers who shared their experience and knowledge with the research team throughout the project. Their assistance and input is gratefully acknowledged.

We'd also like to thank the following professional bodies that advertised and supported the study:

Association of Occupational Health Nurse Practitioners (AOHNP)
Association of Chartered Physiotherapists and Occupational Health and Ergonomics (ACPOHE)
British Association of Occupational Therapists (BAOT)
British Chiropractic Association (BCA)
British Physiotherapy and Pain Society
British Osteopathic Society (BOS)
Case Management Society UK
Chartered Society of Physiotherapists (CSP)
Ergonomics Society
Institute of Safety and Health (IOSH)
Occupational Health Nurses Forum (OHNF)
Physiotherapy Pain Association (PPA)

Particular thanks to ACPOHE (Association of Chartered Physiotherapists in Occupational Health and Ergonomics), the Ergonomics Society and the Edinburgh branch of IOSH for hosting a focus group discussion at their conference / meetings.

The assistance of the following companies in providing information concerning their MSD management programmes is also gratefully acknowledged:

COPE	PES
East Anglia Ambulance Trust	RehabWorks
Ethicon	Royal Mail
Farnham Hospital	Sandwell and West Birmingham Trust
Glasgow City Council	Scottish and Newcastle UK
Gleesons	South West Trains
HBOS	Unilever
Honda of the UK Mfg	Unum-Provident
KSC Health Ergonomics	Wessex Rehabilitation
Lothian University Hospitals	West London Mental Health NHS Trust
Division of NHS Lothian	And others who wished to remain
Nationwide Building Society	anonymous

CONTENTS

EXECUTIVE SUMMARY	vii
1. INTRODUCTION	1
2. DEFINITIONS	3
2.1 Active case management	3
2.2 Musculoskeletal disorders (MSDs)	3
2.3 Rehabilitation	3
3. METHODS	5
4. LITERATURE REVIEW	7
4.1 Method	7
4.2 Active case management	7
4.3 Rehabilitation	19
4.4 Review of the grey literature	29
4.5 Summary	34
5. VIEWS OF STAKEHOLDERS ON EFFECTIVE PROGRAMMES FOR ACTIVE CASE MANAGEMENT AND REHABILITATION OF MSDS	41
5.1 Overview	41
5.2 Questionnaire for those with MSDs	41
5.3 On-line questionnaire for professionals	43
5.4 Focus group discussions	47
5.5 Summary of views of stakeholders	55
6. INFORMATION FROM COMPANIES ON MODELS OF ACTIVE CASE MANAGEMENT AND REHABILITATION PROGRAMMES	57
6.1 Methods	57
6.2 Findings	57
6.3 Reported challenges in implementing these programmes	88
6.4 Discussion	88
7. DEVELOPMENT OF MODEL	89
7.1 Overview	89
8. CONSULTATION ON MODEL	91
8.1 Overview	91
8.2 Written consultation	91
8.3 Focus group consultation	96
8.4 Revisions made and summary	100
9. USE OF THE MODEL	101
10. RECOMMENDATIONS	103
REFERENCES	105
APPENDIX 1 Literature review tables	119
APPENDIX 2 Findings of the on-line questionnaire	141
APPENDIX 3 Model for cost-effective management of MSDs in the workplace	179

EXECUTIVE SUMMARY

Overview

The burden of musculoskeletal disorders (MSDs) to employers and workplaces is significant; and the most important cost to employers and society is lost time from work.

‘Case management’ is a goal-oriented approach to keeping employees at work and facilitating an early return to work. There is good scientific evidence that case management methods are cost-effective through reducing time off work and lost productivity, and reducing healthcare costs. There is even stronger evidence that best-practice rehabilitation approaches have the very important potential to significantly reduce the burden of long-term sickness absence due to MSDs. The combination of case management with suitable rehabilitation principles is currently being used effectively in multiple settings throughout the UK, and there is growth within the case management sector. Current providers vary widely in quality and experience. There is limited professional regulation, although localised standards of practice have recently become available.

Many of the factors influencing the adoption of cost-effective case management and rehabilitation approaches rest with employers, and funders/commissioners of healthcare. It may be easier to integrate these practices into large and medium-sized workplaces, but there is no reason why the same principles cannot be applied to small businesses and the self-employed. It appears to be very timely for the distribution of information to employers and other key players about how effective case management and suitable rehabilitation approaches can be, and how applicable they are to UK settings. To this end, an integrated model specific to the UK has been developed.

An evidence-based model for managing those with MSDs was developed that is widely applicable to all types of industry and business in the UK. It describes the principles to apply in order to integrate case management and rehabilitation with the workplace. It was derived from high quality scientific studies, and research conducted into views on the applicability and effectiveness within the UK.

It is recommended that HSE distribute guidance based on this model.

Introduction

The cost of musculoskeletal disorders (MSDs) to UK business and society is substantial. HSE estimate that 1.01 million people are currently affected each year, resulting in 11.6 million lost working days (SWI 04/05). On average, each affected person took an estimated 20.5 days off work in that 12 month period. This equates to an annual loss of 0.50 days due to MSDs per worker in the UK.

It is recognised that while physical adaptations to the workplace may be helpful, they do not, of themselves, ensure successful rehabilitation for those with MSDs; additional approaches are needed. Active case management and rehabilitation are increasingly being adopted by UK organisations, but there is little systematically reviewed evidence of their efficacy.

This study therefore aimed to collate the evidence on the costs and benefits associated with active case management and rehabilitation programmes for those with MSDs; to identify potential motivators for, and obstacles to, the adoption of these programmes; and from this to develop a model programme based on the evidence and assess its acceptability to stakeholders.

‘Active case management’ describes the goal-oriented approach to achieving specific work retention and return to work outcomes. It is a strategy for supporting individuals (with MSDs) stay in work or return to work. In practice, case managers integrate clinical and occupational management with the needs of the individual to facilitate early return to work (or work retention).

‘Rehabilitation’ refers to restoration of productive activity. It should be closely linked to the workplace and may involve multi-dimensional methods to achieve work retention or return to work outcomes for employees with MSDs that have led to time off.

Methods

The research was conducted in two phases. In Phase 1, information was collected on different approaches to MSD rehabilitation and active case management. This was undertaken through:

- a literature review covering the international published literature and grey literature;
- consultation with those involved in providing or managing MSD rehabilitation or active case management programmes, concerning their views of the effectiveness of these programmes and the obstacles to their success; this was undertaken through an on-line questionnaire (126 respondents) and six focus group discussions (over 140 delegates);
- discussions with 26 organisations that had gathered information on the costs and benefits of the programmes they were running, with collection of this cost benefit information where possible;
- a questionnaire for those of working age with MSDs, concerning the obstacles to their returning to or remaining in work (75 respondents).

In Phase 2 a model for effective case management was developed, based on the findings of Phase 1, and potential users of the model were consulted concerning its scope, content, presentation and usability. This was done through:

- Electronic and paper circulation of the model, with invitation to respond; over 95 people received the model in this way, and 34 written responses were received.
- Three focus group discussions, attended by 26 delegates.

A final model was prepared following the outcome of the consultation.

Findings

Literature Review

An extensive and thorough review of the international and grey literature was undertaken, and the level of evidence demonstrated in published papers was assessed using the guidance published by the Oxford Centre for Evidence Based Medicine. The literature review showed that the case management and rehabilitation approach for MSDs can be an effective intervention, and has been widely adopted in other industrialised countries such as Australia, New Zealand, the US and Canada.

Active Case Management

From the literature it appears that for work/vocational rehabilitation the usual practice is to deploy a single case manager for an individual worker. The case manager can function as (a) “broker” who passes on information and arranges referrals without direct contact; (b) “generalist” who

provides both coordination and direct services such as advocacy, casework and support systems; or (c) “primary therapist” who supplements the therapeutic relationship with case management functions. It seems that the skill of individual case managers is more important than their professional training or background.

It may be concluded there is moderate evidence that case management approaches are effective and can yield a variety of benefits which are cost effective. This evidence pertains to using case managers as ‘brokers’ or ‘generalists’, but not as ‘primary therapists’; the potential for a conflict of interest when using the ‘primary therapist’ approach to case management has been widely recognised in various rehabilitation programmes. The benefits observed include reduced healthcare costs, reduced treatment duration, reduced sick-leave and time off work, improved worker productivity, reduced compensation claims and litigation, reduced claim duration and more rapid claim closure.

In summary, the key components of successful and cost-effective case management appear to be:

- Individual worker has their own case manager
- Case manager facilitates safe and sustainable return to work by recognising and addressing personal and occupational obstacles to secure safe and sustainable return to work
- Case manager interfaces with healthcare services, but is not also the provider of healthcare
- Best clinical practice guidelines are available and followed
- Case manager monitors all aspects of treatment – appropriateness, timeliness, adherence, outcome, and cost
- Case manager makes treatment funding decisions
- Duration management techniques are available (using normative data on likely absence durations for conditions, the case manager can identify when a case has exceeded a typical absence period, and this triggers a review of the case)
- Case manager liaises directly with employer about return to work
- Case manager negotiates transitional work arrangements
- Early intervention focus

Effective case managers:

- Help to define a health or injury problem
- Arrange specific healthcare
- Develop a clear plan for safe sustainable return to work
- Manage resources efficiently
- Proactively use resources to purchase interventions with known effectiveness, at the most beneficial time
- Interact with other stakeholders and adopt appropriate roles:
 - When communicating with an employer – emphasise the worker’s needs
 - When communicating with a healthcare provider – emphasise the employer’s needs
 - When communicating with the worker – emphasise early and sustainable return to work

MSD Rehabilitation

There is strong evidence that rehabilitation programmes using a cognitive-behavioural orientation and an activity focus are effective, and cost-effective at reducing pain and increasing productive activity in both the sub-acute and the chronic groups. There is also strong evidence that the use of

these interventions at the sub-acute stage can prevent the development of long-term problems and reduce time off work. Furthermore, there is good evidence that this is highly cost-effective, especially when the intervention is selectively delivered to individuals screened as having a high risk for a poor outcome.

The key components of good quality rehabilitation service delivery have been shown to include:

- An effective method to identify suitable cases is used with a standardised screening process
- Consideration given to the timing of the intervention; not too early and not too late
- Interventions are individualised by targeting specific obstacles to recovery/return to work
- The role of the case manager is integrated with the intervention through an agreed individualised rehabilitation plan
- The content of the intervention is:
 - Focused on return to work
 - Cognitive-behavioural in orientation (with a problem-solving approach)
 - Activity-based
 - Integrated with the workplace
 - Based on evidence-based protocols

The literature provided strong evidence on the cost-effectiveness of the approach. The study then sought to consider the applicability of these principles in the UK.

Consultation with professionals and those with MSDs

Consultation with professionals supporting those with MSDs, and with people who were experiencing MSDs, identified views of the scope and effectiveness of programmes for active case management and rehabilitation, and any benefits and obstacles that may be encountered with them. The consultation was undertaken through questionnaires and focus groups discussions.

Responses to the professionals' questionnaire were received from a wide range of different professions, although most were healthcare providers. A similar pattern was seen with the focus group discussions. The majority of programmes represented had been running for over 3 years, although more than a third had been running for less than 3 years.

There was a strong perception among professionals that programmes to actively case manage those with MSDs were likely to be cost effective, although only a minority of organisations had information to support this. However, there was anecdotal support for the view that they were likely to be cost effective.

Obstacles for individuals to stay in work or return to work were perceived to include:

- Nature of the injury or of the task meant that the individual may not be able to undertake their job.
- Individual psychological obstacles (e.g. fear of re-injury through work activities, loss of confidence, believing they shouldn't work if they experience discomfort, negative attitude to work or specific job, lack of motivation).
- Work pressures (likelihood of the individual not being able to only undertake 'light duties' or work at a reduced pace).
- Lack of suitable adjustments for the individual (both physical adjustments and adjustments to hours / duties).

- Lack of appropriate, timely advice / treatment / rehabilitation programmes (e.g. unable to access treatment if back at work, long referral or waiting times), meaning individuals did not get the treatment they required for their condition, or were (inappropriately) signed off work.
- Lack of support from management and colleagues, and lack of awareness of appropriate measures for those with MSDs.
- Management belief that individuals should be 100% fit before returning to work.
- Individuals not following best practice or implementing information that has been provided (e.g. poor posture, poor manual handling technique).
- Financial and legal concerns (e.g. individual potentially receiving reduced pay during a graduated return to work programme or being better off on Statutory Sick Pay than during a graduated return to work; organisation's legal standing if individual is back at work and is re-injured).

These concerns were echoed in the comments from those with MSDs. Respondents felt some pressure to return to work, but were concerned that this may increase their discomfort. Individuals also expressed the desire to be completely free of discomfort before returning to work. Some felt that disclosing the extent of their discomfort may suggest that they are no longer able to do their job as well as they used to. Some reported a loss of confidence in undertaking their job.

Organisation obstacles to return to work were also highlighted by those with MSDs, such as not being prepared to return to work with reduced paid hours or a lower paid role if they were unable to perform their normal job.

The main obstacles to effective delivery of these programmes were reported by organisations as a lack of awareness of the benefits of such a service and lack of commitment to it, lack of resources and lack of appropriately skilled service providers.

Perceived benefits of these programmes included:

- Quicker return to work for the individual
- Reduced sickness absence costs
- Improvement of the individual's functional ability
- Retention of skilled staff
- Improved morale
- Improved productivity

Information from organisations on the costs and benefits of their programmes

Twenty six organisations provided information on the way that they implemented a programme within their organisation. Where available, costs and benefit information was provided. It is difficult to compare the cost effectiveness of the different models due to the small sample size and differences in ways in which data are collected. Limited information was available, but indicated that with most programmes for every £1 spent there was a saving of £2-3. Specific figures ranged from no measurable saving (for a large company's programme which consolidated existing case management and rehabilitation practices across all sites) to £8 (for a rehabilitation programme for those on long term absence).

The different approaches can be summarised as:

1. Internal case management by Occupational Health department. Treatment or therapy provided on-site from a health care provider employed directly by the organisation
2. Internal case management by Occupational Health department. Treatment or therapy provided on-site from a health care provider contracted in to the organisation
3. Internal case management by Occupational Health / Human Resources. Treatment provided off-site by external supplier
4. Contracted therapist / treatment provider acts as the case manager. Treatment provided on-site
5. External case management, providing advice to the individual and referring for treatment, often with a third party.
6. Exercise and functional restoration programmes
7. Programme to create consistent message on MSD rehabilitation

There was no clear indication from the organisations that any approach offered a more beneficial return on investment, and it is thought that the most appropriate approach for an organisation will depend on the size and culture of the organisation and the nature of MSDs within the organisation.

Development of model

An evidence-based model for managing those with MSDs was developed that is widely applicable to the UK. This describes the principles of integrating case management and rehabilitation with the workplace. It applies equally to all industry and business types, all sizes of organisation, and all types of MSDs. It is based on the evidence obtained in the literature review, taking account of the response from UK professions concerning applicability and effectiveness within a range of settings.

The introduction to the model outlines who it is suitable for, and dispels myths commonly held in relation to MSD absence. These myths include:

- the employee must be 100% fit before they return to work;
- concern about a risk of re-injury through work activities;
- it's not the employer's problem;
- workers *must* be given light duties on return to work;
- a GP sick note means the worker cannot work;
- people with pain want to stay off as long as possible;
- the employer shouldn't contact people who are off sick.

There is a clear message in the model for all those involved on what they should do and why. The stages in case management come under the headings of:

- create the right culture;
- manage workers with MSDs;
- manage the return to work process;
- monitor and review the programme effectiveness.

Guidance is provided for all those involved in the management of MSDs (the individual, colleagues, employer, healthcare provider, and case manager). Guidance is also provided on helping people return to work.

The model contains two appendices: one gives guidance on writing policies and procedures in relation to an MSD management plan; the second outlines points to consider when setting up a programme.

Consultation on the model

Comments were provided from potential users of the model through a consultation process. In general it was well received, although there was concern about how easy it would be for Small and Medium-sized Enterprises to use. Minor clarifications were made to the model based on the comments received. The final version of the model is included as Appendix 3.

Conclusions

The international literature shows clearly that the costs of applying active case management for those with MSDs, and running rehabilitation programmes are outweighed by the benefits; there is good economic evidence that these programmes are cost effective. Evidence within the UK also suggests that these programmes are cost effective, and different ways of implementing these principles have been identified; the most appropriate type of programme for an organisation will depend on its size and structure. The key components of successful programmes have been identified, and include providing early access to appropriate advice, remaining at work or returning early, and the organisation staying in touch with the individual during absence. This guidance has been incorporated into a model of best practice for use by UK organisations; potential users have reported the model to be useful.

1. INTRODUCTION

In its drive to reduce business costs and to control social spending, the UK government through the Department of Work and Pensions (DWP) and Health and Safety Commission (HSC) set in place targets for reducing work related ill health and for improving safety. The HSC Strategic Plan for 2001/04 aimed at delivering these targets (as set out in Securing Health Together and the Revitalising Health and Safety initiative) – a strategy that will be adopted in Great Britain to 2010 and beyond⁽¹⁾. Within the Strategy, one Priority Programme is MSDs – the most common type of occupational ill health in Great Britain.

The cost of musculoskeletal disorders (MSDs) to UK business and society is well known. HSE estimate that 1.01 million people are currently affected each year, resulting in 11.6 million lost working days (SWI 04/05). On average, each person suffering took an estimated 20.5 days off work in that 12 month period. This equates to an annual loss of 0.50 days per worker. MSDs most commonly affect the lower back (almost half of those who suffer an MSD), the upper limbs or neck (just over a third of those who suffer an MSD), with fewer people experiencing problems in their lower limbs (almost a fifth). The cost to British society was estimated to be £5.7 billion in 1995/96 (HSE), and likely to be higher currently.

Government goals are unlikely to be met solely through primary prevention strategies, aimed at preventing work-related injury. The focus has therefore also turned to secondary intervention approaches, aimed at minimizing the impact of injury and ill health on productive activity, and facilitating an early and sustainable return to work.

While in many companies considerable effort has gone into making changes to the workplace that are likely to assist sufferers when they do return to work, there is a recognition that physical changes to the workplace are, of themselves, not sufficient to ensure successful rehabilitation. Evidence supporting the benefits of active case management exists, but much of it is based on international rather than UK literature. There was a need for a systematic review of the evidence, both from the literature and current practice in the UK, and gain an understanding of the mental models that are held by stakeholders of case management and rehabilitation process. In addition, in order to persuade businesses of the benefit of managing personnel who are absent from work because of MSDs, the costs and benefits of such interventions needed to be demonstrated and documented.

This study was undertaken against that background, and had the following aims:

1. Identify active case management and rehabilitation programmes for MSDs and review evidence as to their effectiveness (based on national and international literature);
2. Through contact with UK companies, identify examples of ‘best’ practice in active case management and rehabilitation that match evidence-based practices identified under objective 1;
3. Identify potential motivators for and obstacles to the adopting of these programmes, so that they can be targeted appropriately;
4. Based on this evidence develop model programmes and assess their acceptability.

HSE’s guidance ‘Managing sickness absence and return to work: an employers’ and managers’ guide’ (HSG249) sets out a strategy for managing sickness absence, and includes the concept of use of a case manager or co-ordinator for assisting in the return to work process. While the

guidance provides thorough general advice, the remit of this study was exclusively focused on musculoskeletal disorders, the most common occupational health issue. It was anticipated that there were particular ways of managing those with MSDs, and provision of therapy or treatment, which required specific advice for employers. It was anticipated that a model or models could be identified which demonstrated cost-effective ways of managing those with MSDs.

Recent changes in Incapacity Benefit (IB) aim to support and encourage those currently receiving IB in their return to work, with there being a clear focus on work activities. Other recent developments include the Pathways to Work initiative, which provides help and support to those on IB to enable them to return to work. This successful pilot programme is being extended into other parts of the UK. These initiatives will involve more active support from employers, GPs and the NHS to help people get back to work.

This has increased awareness of and interest in this area among employers and healthcare providers. As a result of this growing recognition, many professionals have started to offer case management and rehabilitation services in recent years. Many healthcare providers have extended their role to also undertake case management, while in other situations, insurance companies, or independent bodies are increasingly offering these services. These may be provided in-house, for example where an organisation has an in-house occupational health function; or may be provided by an external service provider.

The traditional route for healthcare provision in the UK has been through the NHS. However, in many parts of the country there can be long waiting times to see a healthcare professional (e.g. physiotherapist) in relation to a musculoskeletal disorder. Providing treatment in a timely fashion is recognised as assisting in recovery, and delays to treatment can result in increased chronicity of a disorder, potentially resulting in absence or increased time off work. To avoid this some organisations have elected to provide or pay for treatment, and also to adopt a case management approach to supporting their employees with MSDs. This has typically been done due to the perceived financial benefits of retaining people in work.

Despite an awareness that some organisations were adopting this approach, there had not been a formal review of the way that this was implemented, and the costs and benefits of this to organisations. It was also thought that if there was cost benefit evidence of the effectiveness of an active case management and rehabilitation programme, organisations could be persuaded of the business benefit in adopting such a programme. This study sought to identify the evidence for the effectiveness and costs and benefits of active case management and rehabilitation programmes, and from this to develop a model programme which could be implemented by organisations wishing to adopt best practice in this area.

2. DEFINITIONS

For the purposes of this study the following scope of these definitions was used.

2.1 ACTIVE CASE MANAGEMENT

This is the goal-oriented approach to achieving specific work retention and return to work outcomes. Active case management is usually undertaken by someone designated as a ‘case manager’. Case managers use a range of methods and techniques including, but not limited to, a screening and intake process; assessment; planning; service arrangement; and, monitoring and evaluation of outcome. Case managers provide coordination, facilitate communication, and work collaboratively with treatment providers, the employee, and the workplace to ensure an early and sustainable return to work. The case manager remains involved until a satisfactory outcome has been achieved.

2.2 ‘MUSCULOSKELETAL DISORDERS’ (MSDs)

Soft tissue pain or discomfort that may be associated with injury and results in limitation or disability. This definition excludes fractures, cancer, and rheumatic and degenerative diseases that may also result in discomfort and disability, and may require particular healthcare interventions. These are excluded as it is likely that the healthcare outcomes will be different to those expected from musculoskeletal disorders.

2.3 REHABILITATION

This refers to restoration of productive activity. The focus of this research was on ‘work rehabilitation’, which can also be described as ‘occupational’ or ‘vocational’ rehabilitation. It involves multi-dimensional methods to produce work retention and return to work outcomes for employees with injuries or diseases that have led to time off work. These methods include on-site workplace interventions.

There has been a change in the understanding of how to achieve effective rehabilitation, with the recognition now that the workplace is the key place for the employee to recover. Rehabilitation therefore needs to be focussed on the tasks that are required for work; with appropriate treatment and activities to encourage restoration of function for work activities.

3. METHODS

The research was conducted in two phases. In Phase 1, evidence was collected on different approaches to MSD rehabilitation and active case management. This was undertaken through:

- a literature review covering the international published literature and grey literature;
- consultation with those involved in providing or managing rehabilitation or active case management programmes concerning their views of the effectiveness of these programmes and the obstacles to their success; this was undertaken through an on-line questionnaire and six focus group discussions;
- discussions with organisations that had gathered information on the costs and benefits of the programmes they were running, with collection of this cost benefit information where possible;
- a questionnaire for those of working age with MSDs, concerning the obstacles to their returning to or remaining in work.

Based on the findings of the scientific literature review and the experiences of a variety of organizations, a model for effective case management was developed. This model was written with a focus on what employers (in organizations of all sizes from all sectors) might need to know and do, yet the principles outlined are likely to be of interest and value to professionals in the rehabilitation and case management industry as well as other sectors such as healthcare, insurance and law.

Phase 2 involved consultation with potential users of the model concerning its scope, content, presentation and usability. This was done through:

- electronic and paper circulation of the model, with invitation to respond either via a questionnaire, or directly; over 95 people received the model in this way, and 34 written responses were received.
- focus group discussions with interested parties. Three focus group discussions were held, and were attended by 26 delegates.

Based on the findings of this, a final model was prepared (see Appendix 3).

4. LITERATURE REVIEW

4.1 METHOD

A systematic literature search of Medline, Medline Daily Update, Medline Pending, Embase, CINAHL, AMED (Allied and Complementary Medicine Database), PsycInfo, Cochrane DSR (Database of Systematic Reviews), ACP (American College of Physicians) Journal Club, and DARE (Database of Abstracts of Reviews of Effects) was conducted in December 2004, and updated in August 2005, using Boolean search terms from the inception of the databases. In broad terms the search consisted of using established search strings designed to identify economic and cost-benefit studies in combination with a wide range of synonyms and keywords covering the search areas for “musculoskeletal”, and “case management” or “rehabilitation”.

The definitions of the terms ‘Musculoskeletal disorders’ (MSDs), ‘Active case management’ and ‘Rehabilitation’ as outlined in Section 2 were used for the literature review, and are based on definitions shown in Appendix 1, Tables A1 and A2. The tables that support the literature review are included in Appendix 1.

4.2 ACTIVE CASE MANAGEMENT

4.2.1 Development of definition and understanding

No single definition of case management exists. Historically, case management activities trace back to the 1800’s, but the exact beginning is difficult to determine (Center for Social and Community Development - School of Social Work Rutgers, 2004). Some believe the Massachusetts Board of Charities established the first case management programme in 1863 (Dill, 2001), while others credit a social worker called Mary Richmond from the early 1900’s as the first to define case management activities (Gutheil and Chernesky, 1984). Regardless of its origins, it is clear that case management became prominent in the 1900’s as a means to integrate independent services and later as a response to social events such as deinstitutionalisation. This means that over time case management became a more refined intervention to address difficulties posed by fragmentation or partial funding of services for persons in need of longer-term support or extended care. It has also been referred to as “care management”.

The term “case management” is currently used widely to describe a variety of activities involved in providing resources for people confronted with complex health, legal or social problems (Missouri Foundation for Health, 2003). Various types of case management are provided in an array of contexts spanning the legal system, schools, social work, community care for the elderly, social welfare systems, insurance and compensation systems, and a wide variety of healthcare settings. Case management has a different implementation history for each of these populations, but there are common features including the attempt to manage clients with long-term difficulties or problems through a process or system that has elements of fragmentation, complexity, restriction and/or change.

This lack of clarity may be attributed to the potentially divergent social goals of case management. Namely, coordinating and maximizing resources for clients, and containing costs of extended care or support (Brennan and Kaplan, 1993). Managed healthcare is a form of case management that focuses primarily on cost control. In contrast, many of the AIDS case management programmes, for example, focus on maximizing access to resources for clients, relegating cost control to a secondary goal (Cruise and Liou, 1993). This means that there is inevitably an inherent tension between the gatekeeper function (ensuring that scarce resources go

to the neediest), and the service advocate function (maximising services for a client, regardless of overall systems needs or costs) (Piette et al., 1990). Naturally, these potentially competing goals affect how programmes are implemented, and how outcomes are evaluated.

In the absence of a clear definition for case management and associated protocol, agencies and organizations have tended to develop case management programmes or models that address a particular set of local issues or problems (Rothman, 1992). These models are inevitably influenced by organisational culture (Piette et al., 1990). For example, if the goal is continuity of care and responsiveness to clients rather than cost containment, greater variability is observed in how case management is implemented. Adopting a flexible definition of case management is attractive, since this means it can be deployed as an intervention for addressing a variety of healthcare, or social ills. However, definitional ambiguity makes it more difficult to construct useful case management models, and to define best practice guidance or methods of evaluating outcomes.

Despite this, case management is now considered by many as an important intervention, although it remains somewhat indistinct and amorphous, and many still disagree about the practice of it (Rothman, 1992). Even within the areas of longest practice, researchers and clinicians have still been unable to agree on one widely accepted definition of case management (Baldwin and Woods, 1994, Dill, 2001).

Case management is a concept, a methodology, not a product or a recipe for better healthcare or rehabilitation. In practice, case managers often describe their work in practice as: “Doing whatever it takes, with whatever you’ve got, for as long as it takes, to get the job done” (Missouri Foundation for Health, 2003).

Case management occurs both as a concept at the systems level and as a process of service delivery. At the system-level case management is a strategy for coordinating the provision of services to clients within the system; and, at the client or service delivery level case management is a client-centred, goal-oriented process for assessing the need of an individual for particular services and assisting them to obtain those services. In healthcare settings case management may be delivered by interdisciplinary teams that allocate specific functions to each member, or as a comprehensive service centre that attempts to function as a “one stop shop”. In this approach it is frequently disease-specific, and therefore context-bound. Common examples include HIV, rheumatoid arthritis, mental health, or specific learning disabilities.

For work, or vocational, rehabilitation it is usual practice to deploy a single case manager for an individual worker. However, within this approach there are also a number of alternative models. The first can be described as the “broker model”, since it does not involve any direct provision of service, rather it is purely information and referral only. The second model is that of the “generalist case manager” who provides coordination of services as well as direct service functions such as advocacy, casework, and development of support systems. The third model is that of the “primary therapist as a case manager” and this focuses primarily on the therapeutic relationship with the client and supplements this intervention with traditional case management functions.

The key features of case management aimed at achieving RTW outcomes are that a single individual (the case manager) is responsible for promoting the overall process of safe and sustainable return to work. The case manager identifies necessary key actions to achieve the goal, but is not responsible for doing all of them. Actions are based on “ownership” of the problem (not

being at work), or responsibility toward it. The case manager actively engages all relevant parties in accepting ownership and responsibility for specific actions.

Definitions of case management vary between countries and the intended application. The Case Management Society UK defines case management as “a collaborative process which assesses, plans, implements, co-ordinates, monitors and evaluates the options and services required to meet an individual’s health, care, educational and employment needs, using communication and available resources to promote quality cost effective outcomes” (Case Management Society UK, 2004). A brief description of the overall philosophy of case management is also provided: “Taken collectively, the services offered by a professional Case Manager should enhance the quality of life for clients while potentially reducing the total overall cost of disability. Thus, effective case management will directly and positively affect the social, ethical and financial health of the country and its population. The role of a Case Manager is to collaborate with clients by assessing, facilitating, planning and advocating for health and social needs on an individual basis. Successful outcomes cannot be achieved without specialised skills and knowledge, such as those exhibited by a Case Manager, throughout the case management process”.

The Case Management Society of America provides the following definition: “Case management is a collaborative process of assessment, planning, facilitation and advocacy for options and services to meet an individual’s health needs through communication and available resources to promote quality cost-effective outcomes” (Case Management Society of America, 2004). Notes to define the philosophy underpinning case management are also provided: “Case management is not a profession in itself, but an area of practice within one’s profession. Its underlying premise is that when an individual reaches the optimum level of wellness and functional capability, everyone benefits: the individuals being served, their support systems, the health care delivery systems and the various reimbursement sources. Case management serves as a means for achieving client wellness and autonomy through advocacy, communication, education, identification of service resources and service facilitation. The case manager helps identify appropriate providers and facilities throughout the continuum of services, while ensuring that available resources are being used in a timely and cost-effective manner in order to obtain optimum value for both the client and the reimbursement source. Case management services are best offered in a climate that allows direct communication between the case manager, the client, and appropriate service personnel, in order to optimise the outcome for all concerned. Certification determines that the case manager possesses the education, skills and experience required to render appropriate services based on sound principles of practice”.

The Case Management Society of Australia has published a draft definition of case management (Case Management Society of Australia, 2004). This states: “First and foremost Case Management is a service delivery approach now widely adopted across diverse settings in the human services and health sectors. The best practices in Case Management require organisational arrangements to support service delivery, staff who have been trained for the approach and its application to the particular practice setting and strategies to ensure that the organization can be responsive to evidence from practice and advocate for systemic and policy change to support service delivery. The principles that underpin Case Management are individualised service delivery based on comprehensive assessment that is used to develop a case or service plan. The plan is developed in collaboration with the client and reflects their choices and preferences for the service arrangements being developed. The goal is to empower the client and ensure that they are involved in all aspects of the planning and service arrangement in a dynamic way. The Case Manager coordinates the process, consulting informal carers and key service providers to ensure that the plan is developed appropriately, clearly contracted and monitored for effective and financially accountable service provision based on specified and desired outcomes. The case

manager and the organization are expected to maintain quality in service provision for individual clients and the wider target population. In clinical settings the case manager may also provide specialist services to address particular needs of the client. The Case Management approach assumes that clients with complex and multiple needs will access services from a range of service providers and the goal is to achieve seamless service delivery. This assumption highlights that the concept of Case Management is based in service provision arrangements that require different responses from within organisations and across organisational boundaries. Case management is described as a boundary spanning strategy to ensure service provision is client rather than organisationally driven. Case Managers provide the coordinating and specialist activities that flow from the particular setting, programme and client population. However it is usual to identify the following process as core to Case Management: screening, assessment/risk management, care planning, implementing service arrangement, monitoring/evaluation and advocacy". They note that case management has been adapted to a wide range of settings including community care for the aged, and people with disability and mental health issues; acute health settings; injury management and insurance related areas; correctional services; court systems; in the management of chronic health conditions; child and youth welfare; at risk populations in schools; managed care and employment programmes.

4.2.2 Literature Review

There is a paucity of studies directly evaluating the cost-benefit of case management. There are many reasons for this, including problems with definitions and the overall complexity of the research task.

For the purposes of the current review it is necessary to distinguish between some broad conceptual areas: Treatment; Programmes; Vocational Rehabilitation; and, Case Management. These can be differentiated for convenience and the purposes of discussion, although there are clear overlaps.

"Treatments" involve the delivery of a defined healthcare intervention, procedure, or technique. Examples for treating MSDs include manual therapy such as manipulation (Gross et al., 2000b, Ernst, 2002, Assendelft et al., 2003), specific exercises (van Tulder et al., 2000b, van Tulder et al., 2000a, Bekkering et al., 2003), injection therapies (Nelemans et al., 2002, Yelland et al., 2004), surgery (Fouyas et al., 2002, Scholten et al., 2002, Gibson and Waddell, 2005), etc. This review does not focus on the effectiveness of treatments.

"Programmes" involve the delivery of multiple interventions in a package (CARF The Rehabilitation Accreditation Commission, 1998, CARF The Rehabilitation Accreditation Commission, 1999). They are usually provided following the completion of treatments, but under some circumstances may be offered concurrently. The most important example of these for MSDs are multidisciplinary, biopsychosocial programmes that are often called 'pain management programmes' (Gross et al., 2000a, van Tulder et al., 2001, van Tulder et al., 2002, Guzman et al., 2002a, Karalainen et al., 2001). Programmes should not be confused with provision of extended exercise therapy. The role of pain management programmes, by whatever name they are called, is now well established (van Tulder et al., 2002, Cutler et al., 1994, Guzman et al., 2002a, Karalainen et al., 2001, Flor et al., 1992, Turk, 1996b, Feuerstein and Zastowny, 1996, McQuay et al., 1997, Linton and Ryberg, 2001, Thorbjornsson et al., 2000, Williams et al., 1996). Terminology that is commonly and often interchangeably applied includes: Multidisciplinary/interdisciplinary (Loeser, 1991, Turk, 1996a, Turk, 1996b); Functional restoration (Isernhagen, 1995); Work Hardening (Schonstein et al., 2003c); Functional conditioning (Elders et al., 2000b); or, Pain management. Programmes are generally provided for people with persistent (chronic)

pain problems, such as chronic low back pain (CLBP). For this purpose CLBP is defined as “*activity intolerance due to lower back or leg symptoms lasting longer than 3 months (without a period free of activity limitation or pain)*”. However, there is important evidence that long-term problems may be *prevented* through the provision of Programmes during the *sub-acute* stage, between the “acute” and “chronic” periods (Linton and van Tulder, 2001, Linton and Ryberg, 2001, Linton and Hallden, 1998, Linton et al., 1989, Linton et al., 1993b, Linton et al., 1993a, Karjalainen et al., 2001a, Kendall et al., 1997, Pincus et al., 2002, Van den Hout et al., 2003). There is some uncertainty about the optimal timing for this, but indications are that it may apply to the 4- to 12-week from onset period.

One of the best definitions of an interdisciplinary pain rehabilitation programme available is that it provides “outcomes-focused, coordinated, goal-oriented interdisciplinary team services to measure and improve the functioning of persons with pain and encourage their appropriate use of health care systems and services. The program can benefit persons who have limitations that interfere with their physical, psychological, social, or vocational functioning. Information about the scope of the services and the outcomes achieved is shared by the program with stakeholders” (CARF The Rehabilitation Accreditation Commission, 1999). However, in practice few programmes provide specific RTW pathways, or even an occupational focus (Kendall and Thompson, 1998). For this reason, many individuals are referred to some form of vocational rehabilitation.

“Vocational Rehabilitation” also has a number of synonyms including occupational rehabilitation. In its broadest sense it refers to interventions and supports that help people get into work, and remain at work. However, this clearly embraces a wide variety of interventions, strategies or approaches (Linton, 1995, Loisel et al., 2003, Marnetoft et al., 1999, Chartered Institute of Personnel and Development, 2005), and specific techniques or tactics. These are too long to list here, and have already been comprehensively reviewed elsewhere (Williams and Westmorland, 2002, Carter and Birrell, 2000, Waddell and Burton, 2000, Irving et al., 2004, Verbeek et al., 2002, Guzman et al., 2002b, Pransky et al., 2002, Williams et al., 1998b), however they include methods such as graded programmes (Vlaeyen et al., 2001, Linton et al., 1999, Van den Hout et al., 2003, Lindstrom et al., 1992b, Lindstrom et al., 1992a, Vlaeyen et al., 1995, Ostelo et al., 2000); manager training, such as communication (Linton, 1991, Verbeek et al., 2002, McLellan et al., 2001, Guzman et al., 2002b); and, work trials, modified work, and workplace accommodations (Spitzer, 1993, Aitken and Cornes, 1990, Matheson et al., 1985, Niemeier et al., 1994, Schonstein et al., 2003c, Shaw and Feuerstein, 2004, Krause et al., 1998).

“Case Management” approaches may involve the use of “treatment”, “programmes”, and/or “vocational rehabilitation” (Lemstra and Olszynski, 2004). It may deploy some or all of these, or none at all, based on the premise that case managers describe their role as: “Doing whatever it takes, with whatever you’ve got, for as long as it takes, to get the job done” (Missouri Foundation for Health, 2003). Case management has a shorter history than either clinical management, or industrial (occupational) rehabilitation. Clinical management is invariably based on the “medical model”. This approach tends to work well with specific injuries such as fractures, or specific diseases such as infections. However, it is weak at both defining and dealing with common MSDs making it limited in what it has to offer the modern workplace.

Historically, vocational rehabilitation developed from military approaches. This was to remove a soldier from the battlefield, patch him up, and return him to fight another day. When applied to the workplace (the “industrial battlefield”) this led to the simplistic idea that a worker should be fully recovered before returning to work, and the “100% or Nothing” myth was born. Modern

occupational rehabilitation recognises that the place to deliver rehabilitation is the workplace itself, however this is still often neglected and rarely delivered in practice.

Case management approaches evolved in response to the limitations of both clinical management and occupational rehabilitation, and subsequently has been refined within the important and necessary milieu of cost-containment (Shaw and Feuerstein, 2004). Western industrialised societies have experienced explosions in the cost of healthcare, and the costs of work disability for MSDs. Long-term work disability is much more costly than healthcare, often by a factor of ten, and most funding systems have faced potential crises if trends for MSDs had continued unabated (Nachemson, 1994, Waddell, 1997, Waddell, 1998). This includes public systems funded by taxation, insurance schemes, and workers compensation systems. The need for effective cost-containment appears to be with us for the foreseeable future.

Case managers appear to occupy a unique role, with dual priorities: to meet the client's needs and make efficient use of resources. Effective case management has the opportunity to play a unique role in ensuring optimum outcomes from efficient use of resources. Most resources need to be deployed to obtain an early and sustainable return to work. Some case management skills may be unique, and are not derived from a specific profession or background. Skilled case managers exercise judgement and make decisions, and do not follow rigid protocols. In this manner, they are a valuable resource.

Case management may be an operational tool, rather than a model in itself. In many circumstances the vocational rehabilitation provider utilises field case management practises as their operational tool. As such the vocational rehabilitation provider is often considered the human face of injury management and a key independent person involved at the interface between the injured worker and the employer (Association of Rehabilitation Providers in the Private Sector, 2004). The funder, or insurer, may also provide case management services. These types of case management services are often delivered by telephone or conducted from an office, with periodic field visits on an as needed basis. It seems clear that there is a need for different types of case management to address different cases and different issues. It may be that the more complex injuries, the more complex workplaces and the more complex issues require the services of a field case manager, perhaps in the guise of a vocational rehabilitation provider.

The context in which active case management for people with MSDs may be successful in achieving a sustainable return to work can be open to debate. Two competing concepts appear worthy of consideration. The first is the suggestion that the roles of a healthcare provider can be combined with active case management. Certainly, it is true that modern best clinical practice strongly endorses the adoption of many of the same conceptual principles. That is, it is now widely believed that healthcare providers who provide self-management advice and problem-solving skills to their patients will produce better clinical outcomes and faster return to productive activity. However, this approach is predicated on the assumption that healthcare providers can, and will, readily adopt self-limiting approaches to their own treatment practices by using appropriate critical analysis of outcomes. The real-world observation that this occurs less frequently than would be desired has led to the second conceptual approach that suggests there is frequently a need to separate the provision of healthcare from the delivery of case management. Clearly this is not a hard and fast rule. However, the available evidence reviewed here that indicates case management can be both effective and cost-effective is substantially based on studies that utilised methods where case management and healthcare delivery were done in a conceptually separate manner. This provides important support to the conclusion that case management should not be the primary responsibility of healthcare professionals who are engaged in providing treatment per se.

There are probably two main reasons why this is the case. The first involves potential role confusion. Healthcare providers generally identify their principal role as one of advocacy for the patient, with only secondary interest in efficient use of resources and societal considerations such as the economic impact of work loss due to MSDs. In contrast to the majority of healthcare providers, case managers adopt different roles according to their context. For example, when communicating with an employer a case manager will often emphasise the worker's needs, but when communicating with a healthcare provider will emphasise the employer's needs, and when communicating with the worker will emphasise an early and sustainable return to work. Healthcare providers are not usually given, or wish to take, such a variety of roles. However, this type of role flexibility is a hallmark of effective case management.

The second major impediment to healthcare providers functioning as effective case managers at the same time as they are providing treatment involves a potential conflict of interest. Healthcare providers have an interest in delivering treatment. Objective assessment of progress and outcome in the treatment of MSDs requires extensive effort to avoid subjectivity and bias, since the variables involved are subjective and easily influenced. This means that healthcare providers are far more likely to over-service MSD problems than to under-treat them, and that their own perceptions of MSDs influence the advice they provide to their patients (Houben et al., 2005a, Houben et al., 2005b). There is substantial evidence for this problem drawn from the experience of healthcare funders throughout the industrialised world, however it remains an unpopular discussion with healthcare providers (Williams et al., 1998a, Cornes and Aitken, 1992, Cohen et al., 2000).

4.2.3 Cost-benefit analyses

A total of 21 relevant studies were identified to include in the review and these are listed in Table A3. A further 15 studies were identified as potentially relevant, but were excluded from the review due to the reasons outlined in Table A4.

For the purposes of this literature review a cost-benefit analysis was considered as an economic evaluation that compares the costs and consequences of two or more alternatives, where all the costs and consequences are converted to money values. It is clear that this research objective is often difficult to achieve in practice, and this is likely to be the reason for the small number of studies available.

Cost-benefit studies may be conducted from a variety of perspectives, for example, from the patient, healthcare provider, insurer/funder, or societal perspectives (Drummond et al., 1987, Drummond, 1987).

The quality of research evidence varies substantially. For this reason, a variety of methods have been developed within the evidence-based healthcare framework to differentiate the quality of individual studies (Dwairy and Kendall, 2002, Sackett et al., 1997a, Sackett et al., 1997b, Sackett, 1998, Wright et al., 2003, Dawes et al., 2005). This includes the development of meta-analysis techniques, and systematic reviews. The latter are epitomised by the Cochrane Collaboration. A pivotal component of interpreting evidence is the concept of the "levels of evidence". For example, a case series is one of a group of descriptive studies that by their very nature do not test the hypothesis of treatment efficacy, making them inappropriate to determine whether a treatment works or not (Carey and Boden, 2003). However, they are very useful studies to identify promising areas that warrant more research. The levels of evidence published by the Oxford

Centre for Evidence-Based Medicine in 2001 are used whenever relevant in this review (Phillips et al., 2001).

4.2.3.1 Qualitative studies

A qualitative interview study conducted in the U.K. during 2002 developed a consensus statement based on the views of 25 national experts (Beaumont, 2003). While they did not directly address the issue of quantifying cost-benefit it does acknowledge the crucial role played by GP's when they provide sick-notes, potentially triggering extended periods of absence from work that are costly to all stakeholders. Furthermore, there is explicit acknowledgement that "We should aim for the situation where anyone off work for a sustained period is supported by a clear rehabilitation strategy, which they have been involved in developing".

A survey of 23 insurance case managers' perception of back pain programmes was conducted in the Midwest of the United States (Haig et al., 2001). The results indicated that case managers welcome good quality programmes that emphasize timeliness, communication, a functional-restoration orientation, concrete programme goals and timeframes, involvement of doctors with knowledge about work disability, and rapid communication of patient compliance. Case managers may feel vulnerable, as they are responsible for large expenditures but are often very restricted in their ability to influence the behaviour of patients or providers and may not be able to determine if money has been well spent until after the fact. They perceive programmes to be cost-effective when a successful return to work outcome is achieved.

A comprehensive review of the implementation of managed care and case management in Washington State emphasised the role of occupational medicine and its focus on return to work combined with adequate communication with the employer (Lantsberger et al., 2004). The majority of injured workers had musculoskeletal problems, however the project covered all types of injuries. This project included a long-term review of claimants outcomes two years after injury (Schulman and Schwartz, 1997). Cost savings ranging from 6% to 50% were identified, along with significant reductions in days off work.

An Australian retrospective survey of the case managers role within a service provider organisation reviewed 172 closed case files (Russo and Innes, 2002). The goal of the study was to investigate whether the case managers professional background (occupational therapist, physiotherapist, or psychologist) influenced return to work outcomes. Small, but non-significant trends were observed indicating that perhaps the skill base of individual case managers may be more important than their professional training per se.

4.2.3.2 Case series

A descriptive U.S. case series study lacking report of quantitative data reported that a combination of clinical practice guidelines and provider education for MSDs, delivered to primary care with telephone access to specialist advice regarding treatment plans and need for specialty referrals led to significant reductions in healthcare use and costs, while high levels of patient satisfaction were maintained (Gatter and Klein, 1996). The authors concluded that this was a cost-effective approach. This study provides Level 4 evidence (Phillips et al., 2001).

A mixed prospective and retrospective cohort study in New York investigated the effect of case management on injury incidence, time loss, and patterns of musculoskeletal injury in a modern dance organisation (Bronner et al., 2003). It has been noted that professional dancers experience high rates of MSDs, especially of the lower limbs. Injury data was analysed for the 2-year period prior to intervention, and compared to the 3-year period following implementation of the case

management approach. The key outcome variables were the number of workers compensation cases filed, and the number of dance days lost due to injury. It was noted that the annual number of compensation claims was reduced from 81%, down to 17%, and the number of work days lost was reduced by 60% as well. The authors noted that, in addition to the cost-benefit obtained from the intervention, the effect of early and effective management of overuse problems was to prevent injuries becoming serious and to reduce the likelihood of excessive use of healthcare services. Furthermore, it was noted that both the dance company management and the dancers themselves supported the continuation of the programme. This study provides Level 4 evidence (Phillips et al., 2001).

An Australian study investigated the effect of an in-house early intervention case management system for professional musicians from a symphony orchestra that used an on-site physiotherapist (Milanese, 2000). A high incidence of musculoskeletal symptoms including back and neck pain, and shoulder problems was measured. However, despite this the model of healthcare delivery proved to be effective at reducing indirect costs such as travel costs, and was believed to have reduced direct costs as well due to reductions in time off work. This study provides Level 4 evidence (Phillips et al., 2001).

In a prospective case series, using an historical control, conducted at a regional medical centre in the U.S. state of Georgia a protocol was implemented for managing low back pain (Alday and Fearon, 1997). The protocol attempted to integrate the roles of doctors, physiotherapists, and case managers. It was noted that referrals occurred earlier than had previously occurred historically, and an overall RTW rate of 82% was observed. When “resolution of the case” was included among those not returning to work, the overall successful outcome was counted as 98%. The investigators compared the effect of the protocol on doctor referral to rehabilitation, rehabilitation treatment duration, visits, costs, return to work rate, and case resolution. This data was compared to a similar population seen in the same centre the year prior to implementation of the protocol. The results demonstrated that treatment duration was reduced by 41%, the number of patient visits reduced by 32%, and costs reduced by 32%. The authors concluded that the results from this study provide evidence of the efficiency and effectiveness of treating MSDs such as work-related low back injuries by protocol. Of note, they concluded that the most significant effect of the protocol was the inclusion of case management that facilitated timely resolution and prevented the occurrence of unresolved problematic cases. This study provides Level 4 evidence (Phillips et al., 2001).

A prospective case series using an historical control group was conducted at the Johns Hopkins medical centre in the United States (Bernacki et al., 2000). The intervention involved implementation of an early return to work programme, aimed at controlling both the incidence and costs of work-related illnesses and injuries. The major focus of the intervention was to use case management to facilitate acceptance of restricted work activities by employees and supervisors, as part of the RTW process. The programme incorporated employee and supervisory training and job accommodation, but it also included an industrial hygienist trained in ergonomics to facilitate the placement of individuals with restrictions. The RTW programme was studied over a 10-year period, comparing the number of lost workday cases, lost workdays, and restricted duty days before using a historical control group (1989 to 1992) and after (1993 to 1999) initiation of the programme. A significant decrease of 55% was observed in the rate of lost workday cases before versus after the return to work programme. This occurred despite there being no significant change in injury rates. The number of lost workdays decreased from an average of 26.3 per 100 employees before, to 12.0 per 100 employees after, the return to work initiative, indicating an effect from the intervention. However, it was also observed that the number of restricted duty days went from an average of 0.63 per 100 employees to 13.4 per 100 employees,

a 20-fold increase. This indicates that the reason there was such a reduction in lost workdays was in fact due to the increased use of restricted duty options. The results of this study suggest that a well-structured and case-managed early return to work programme can be an integral part of a comprehensive effort to control the duration of disability associated with occupational injuries and illness. It also indicates that to be most cost-effective, an early return to work programme must include the coordinated participation of healthcare providers, safety professionals, injured employees, and supervisors. This study provides Level 4 evidence (Phillips et al., 2001).

A prospective case series study using historical controls was conducted in the U.S. state of Oregon within the Kaiser Permanente managed care organization to evaluate the impact of a programme designed to prevent work-related disability among low back pain cases over a 5-year period (Feldstein et al., 1998). The intervention involved introducing a comprehensive package of provider training, screening cases, and the use of case management. Each contracted employer had a nurse or doctor case-management team assigned to it. The case management system provided direct feedback to doctors on modified work and writing sick-notes for time off by diagnosis. The key outcome variable was work days lost. Insurance data indicated that the average number of days off work in 1991 was 17.8 (N=808), and this reduced significantly to 15.0 in 1995 (N=691). The average cost of each claim was compared with two model Preferred Provider Organisations (PPO's). The first of these had an average claim cost of \$US 4683.93 (N=1964), and the second \$US 4379.33 (N=2466). The Kaiser Permanente cost was \$US 3013.05 (N=2413), significantly less by 33%. The authors of this study therefore concluded that the programme was highly cost-effective. However, they did not publish the actual direct delivery costs involved probably due to reasons of commercial sensitivity. This study provides Level 4 evidence (Phillips et al., 2001).

Another U.S. prospective case series using historical controls investigated the effect of case management in a population of 53 sign-language interpreters working at the National Technical Institute for the Deaf with work-related upper-extremity disorders (Feuerstein et al., 2000). The intervention involved 16.5 hours of contact time with each subject, delivered in groups. This was designed to (1) reduce musculoskeletal overexertion by reducing workload and biomechanical strain, while increasing flexibility and endurance through tailored exercise and pre-interpreting 'warm ups', (2) improve the ability of workers to manage job stress and musculoskeletal pain, (3) reduce biomechanical exposure through work organization and work style changes, (4) alter organizational sources of stress by improving supervisor's managerial skills to address work related upper extremity problems and provide increased supervisor support, and (5) educate workers and supervisors regarding the optimal utilization of health care resources, given the present state of the art in terms of clinical evaluation and management. The key outcome variables were the number of claims, the indemnity costs, and healthcare costs over the next 3-year period. It was observed that the number of claims reduced by 69%, indemnity costs fell by 64% and healthcare costs by a similar amount. The authors concluded therefore that this was a cost-effective approach. This study provides Level 4 evidence (Phillips et al., 2001).

The introduction of managed health care in Pennsylvania, incorporating a case management approach, provided the opportunity to compare costs for injured workers in a prospective cohort study using historical controls (Green-McKenzie et al., 1998). The intervention used proactive on-site case management at a medical centre, a preferred provider organization, safety engineering efforts and ergonomic controls. Each worker cohort was followed longitudinally for three years, before and after implementation. A 50% reduction in total costs was observed following the intervention. This was due to both a reduction in compensation for time off work and healthcare costs. The authors concluded that substantial cost reductions are achievable

without compromising quality of care. This study provides Level 4 evidence (Phillips et al., 2001).

The Amoco Corporation in Chicago implemented a disability management programme at the work site based on a case management approach, to enhance return to work outcomes (Kalina, 1999). The programme was designed to bring a standardized approach to managing an employee's illness or injury and to reduce sickness absence and costs, through ensuring they received optimum healthcare in the most cost-effective manner using clinical pathway guidelines. It was delivered by the in-house occupational health service. Results indicated that one site delivered a 5.6% reduction in days away from work, although details about numbers of cases and types of diagnoses were not published. Sites without the intervention were used as a proxy control group, and it was noted that during the period of study the sickness and disability remained constant at one site and continued to rise at another. The authors concluded that the case management approach deployed was cost-effective. This study provides Level 4 evidence (Phillips et al., 2001).

A case series conducted in the U.S. investigated the use of an early intervention approach to healthcare that emphasizes return to work within a managed care context (Matheson et al., 1995). The healthcare costs for 295 cases were compared to state and national figures, and it was observed that they were significantly lower for MSDs that involved time off work. Another case series by the same investigators described the outcomes for 281 workers with occupational back injuries looked after by an interdisciplinary managed care team (Matheson and Brophy, 1997). It was noted that an early return to the workplace was definitely viable for those with soft tissue injuries, and that the subsequent RTW rate was significantly better. This study provides Level 4 evidence (Phillips et al., 2001).

As noted above, proactive disability management practice among employers have been the subject of a number of studies associated with outcomes of reduced frequency and duration of disability. However, there have been few studies evaluating the effect of training supervisors or line managers. A case series investigated the impact on 108 supervisors who were provided with a 90-minute training package to reinforce a proactive and supportive response to work-related musculoskeletal symptoms and injuries among their staff (McLellan et al., 2001). Results indicated a post-training improvement in supervisor confidence to investigate and modify job tasks, to identify factor leading to the injury, to obtain suitable healthcare advice, and to answer their workers questions. Of note, 39% of supervisors reported a subsequent decrease in lot work time within their departments, while 10% reported an increase. The authors concluded this to be a cost-effective approach worthy of further research. This study provides Level 4 evidence (Phillips et al., 2001).

4.2.3.3 Non-randomised comparative studies

A case-control study in the U.S. investigated the effects of a 2-day training programme for nurse case managers on their implementation of workplace accommodations within a workers compensation healthcare system (Lincoln et al., 2002). Following the training 101 claimants were randomly assigned to case managers with and without training. The key outcome variable was the number of workplace accommodations used as part of the return to work process, in order to enhance outcomes. It was observed that the trained case managers were 1.4 more likely to use workplace accommodations. While this indicates a positive effect on changing behaviour, there were no direct indications that this actually resulted in better vocational outcomes. Therefore conclusions regarding cost-effectiveness cannot be drawn. This study provides Level 3b evidence (Phillips et al., 2001).

4.2.3.4 Randomised controlled trials

A Swedish RCT compared the role of proactive insurer-funded case managers combined with workplace ergonomic interventions, with that of traditional medical case management as a control group over a 1-year period (Arnetz et al., 2003). The major outcome variable was the amount of subsequent sick leave or time off work over the following year. 137 eligible patients were randomised following diagnosis of an MSD, and all had short-term sickness absence at the start of the study. That is, this was not an investigation into chronic or long-term MSDs. Injured workers were interviewed to determine personal, social, and occupational characteristics associated with their injury. One week later the employee, case manager, occupational therapist/ergonomist, and employer met at the workplace. An occupational assessment was conducted. Ergonomic improvements were made as needed and worker vocational training was conducted as needed. Employers were encouraged to undertake rehabilitative investigations and make necessary changes in the workplace. Following the intervention the average number of 145 days off work was significantly less for the intervention group, than the 198 for the control group. This resulted in an odds ratio of 2.5 for RTW in the intervention group compared to the controls. It is interesting to note that 84% of the intervention group completed their rehabilitation programme, whereas only 27% of the control group did. Furthermore, the time needed to deliver the rehabilitation package was only 59 days on average for the intervention group, but was nearly double that at 127 days for the control group. This no doubt contributed directly to the finding that a direct cost saving of \$US 1195 was made for each case (total patient reimbursement was \$US 9592 per person in the intervention group, and \$US 12197 for the control group). This was calculated as a cost-benefit ratio of 6.8. The authors concluded that the results of this study provide evidence for a combination of proactive case management in combination with ergonomic intervention, and recommended a focus on early return to work with an emphasis on functional capacity and employee ability. This study provides Level 1b evidence (Phillips et al., 2001).

An RCT conducted in Seattle in the U.S. investigated the effect of ‘subacute rehabilitative care’ on a mixed group of patients including MSDs with patient with nervous, or circulatory problems (Evans and Hendricks, 2001). Patients were randomised to an intervention group or a control group. The intervention group received outpatient care consisting of three physiotherapy sessions per week, a quarterly medical evaluation, weekly nursing visits, and weekly case management sessions in which the family member and patient problem-solved with a social worker around treatment and compliance issues. The control group received ‘usual follow-up medical care in a primary care clinic’. The key outcome variables were physical function, health, family function, and social support. These investigators reported that there was no significant effect of the intervention on any outcome variable. However, this study was of low quality given that it used a very heterogeneous sample, and less suitable measures with floor-effects. Direct costs were not measured. This study provides Level 1b evidence (Phillips et al., 2001).

An RCT was conducted using 284 coalminers with back injuries in the state of Virginia in the U.S. to investigate an early intervention approach (Greenwood et al., 1990). The goal of this study was to test an early intervention case management approach, begun within two weeks of injury. A nurse and counsellor offered guidance and support to patients with psychosocial risk factors, and coordinated their primary and specialist care and physiotherapy. If necessary they arranged referral to a psychologist. The results indicated that there was no difference in the time off work between the two groups. However, the early intervention group had increased healthcare costs. The authors concluded that this case management approach was insufficient to prevent extended disability due to low back pain, or to contain or reduce the associated healthcare costs. This study provides Level 1b evidence (Phillips et al., 2001).

The cost-benefit and cost-effectiveness of an integrated approach to managing occupational back pain after 4 weeks of absence from work was investigated in an RCT conducted in Quebec (Loisel et al., 2002). While these authors did not use the term ‘case management’ to describe their intervention (which they labelled the “Sherbrooke model”), they did use an approach that is congruent with this terminology. The study used four arms: (1) no occupational intervention, no clinical intervention, N=26; (2) no occupational intervention, plus clinical intervention, N=31; (3) occupational intervention, no clinical intervention, N=22; and (4) occupational intervention, plus clinical intervention, N=25 – the so-called Sherbrooke model. Follow-up after 6 years indicated that all four interventions had some cost-benefit, but that the Sherbrooke model was the best. This indicates that fully integrated methods of care may be the most cost-effective. This study provides Level 1b evidence (Phillips et al., 2001).

4.2.3.5 Systematic reviews

No systematic reviews of cost-benefit analyses for active case management approaches were identified.

4.3 REHABILITATION

The rehabilitation field is vast and the array of literature is unwieldy due to problems such as lack of consensus about definitions (Waddell and Burton, 2004). Thus, there are few definitive answers about what constitutes effective rehabilitation that are readily available.

4.3.1 Literature Review

It has been recognised for at least two decades that MSDs produce considerable human suffering (Bonica, 1990b, Bonica, 1953, Bonica, 1990c, Bonica, 1990a, Bonica, 1990d, Loeser et al., 2001). They are a significant burden on funding systems, healthcare services, employers and businesses, and society in general (HSE, 2000). There is evidence that a substantial proportion of GP workload is dealing with musculoskeletal complaints, almost as much as upper respiratory tract infections (McAvoy et al., 1994). Rapid growth in the number of reported cases, time off work, and associated costs has been observed across western industrialised nations. During the 1980’s and 1990’s near exponential growth occurred. Policy initiatives aimed at cost-containment, and effective methods of managing MSDs have been widely adopted in an effort to stave off the unsustainable burden on societies (HSE, 2004, DWP, 2002, DWP, 2003, DWP, 2004).

The initial response to the observed increases was to increase the availability, and types, of biomedical treatments available. This approach was a direct result of the classic medical model that assumes when a person presents with signs or symptoms these represent an underlying disorder that can be identified and treated. If this was not the case, then the alternative hypothesis was that the complaint must be psychosomatic in nature, which assumes that the fault was in ‘the mind’ of the patient. This meant that patients who failed to respond to therapy, or who had no objective signs to substantiate an organic diagnosis were consigned to the ‘all in the mind’ category with ensuing stigma. Not surprisingly, the sufferer invariably rejected this interpretation. The psychosomatic model also lent its support, perhaps inadvertently, to the notion that much complaint of industrial injury and illness involving MSDs was due to malingering or a factitious disorder. While malingering does undoubtedly occur, it is widely considered to be a relatively rare phenomenon (Main and Spanswick, 1995, Fishbain et al., 1999, Deyo, 2000, Main and Waddell, 1998b).

The range of available treatments for musculoskeletal problems has increased markedly over recent decades, and the range of potential interventions has become ever more diverse. Even cursory observation of contemporary media publications indicates that novel treatments remain highly newsworthy, and this probably helps to stimulate ongoing demand.

It became clear that despite the increased range of treatments, and ever-increasing expenditures on these, the problem of MSDs was not being effectively addressed. Rather, they continued to increase in frequency and cost. There were also some notable localised epidemics, such as the infamous Australian “RSI epidemic” of the 1980’s. This was later repeated during the 1990’s in New Zealand, where the same problem had been re-labelled as Occupational Overuse Syndrome (OOS). The steadily increasing financial burden from MSDs meant that it became impossible to doggedly pursue the singular approach prescribed by the biomedical model.

This set of circumstances led to the establishment of some task forces, and committees, in various countries (COST Action B13, 2003). Each was charged with trying to come up with a solution. A brief history of the key task force reports and guidelines for back pain problems is outlined in Table A5.

The prevalence of back pain is very high, as are other musculoskeletal problems. Furthermore, once both direct and indirect costs were included the total financial burden can only be described as “huge” (Bigos et al., 1994, Goossens et al., 2000, Clinical Standards Advisory Group, 1994b). It was also apparent that many patients with MSDs were receiving healthcare that was either inappropriate or less than optimal. However, systematic reviews of the evidence on effectiveness of treatments conducted during the 1980’s and early 1990’s were consistent in their condemnation of the overall poor quality. By the mid-1990’s however, sufficient high quality research was becoming available to provide a solid foundation for the development of evidence-based clinical practice guidelines (Bigos et al., 1994, ACC and the National Health Committee, 1997, ACC and the National Health Committee, 1999, Clinical Standards Advisory Group, 1994a, Waddell et al., 1996, Royal College of General Practitioners, 1999, Waddell et al., 1999, Koes et al., 2001, Bekkering et al., 2003, Bogduk, 1999, NHS Centre for Reviews and Dissemination, 2000, COST Action B13, 2003).

There is considerably less information available on the impact of these guidelines, especially on outcomes such as work and costs. A case-control study funded by the Federal Government was conducted in Australia to compare the safety, efficacy and cost effectiveness of evidence-based care (N=430) with usual care (N=83) for acute low back pain (McGuirk et al., 2001). The results reflect favourably on evidence-based healthcare. Significant differences were observed for pain, need for continuing care, cost, and consumer satisfaction. Costs were only calculated for the first 3 months of management. Evidence-based care involved longer and more frequent consultations. Consequently it was more expensive in these respects than usual care. These costs, however, were offset by minimal expenditure on investigations, particularly plain radiographs and CT-scans, and by far less expenditure on physiotherapy and other treatment services. In addition, the patients treated in evidence-based clinics had less spent on non-prescribed treatments. Consequently, the average cost per patient under evidence-based care was \$AUD276, whereas for usual care it was \$AUD472. This study provides Level 3b evidence (Phillips et al., 2001). Further evidence for improved clinical outcomes after implementing clinical practice guidelines comes from a Canadian RCT (Rossignol et al., 2000). However, costs savings through achieving more rapid RTW could not be demonstrated. This study provides Level 1b evidence (Phillips et al., 2001).

During the development of the back pain guidelines it became evident to the various task forces that a new paradigm for understanding and managing back pain problems was required, and that reliance on the classical biomedical model would continue to be inadequate (Deyo, 1993, Kendall, 1999, Deyo, 1996). The adoption of the biopsychosocial model became a standard recommendation (Waddell, 1992, Waddell, 1997). This was at least in part due to the rapidly growing evidence base indicating that psychosocial factors were implicated in the development of long-term persistent, or chronic problems (Waddell, 1998). This culminated in the development of the concept of Psychosocial Yellow Flags (Kendall et al., 1997), analogous to the widely adopted Red Flags. The Yellow Flags concept subsequently became widely adopted (Sullivan and Stanish, 2003, Broadhurst, 1999, Main and Waddell, 1998a, Newton-John et al., 2001).

Gradual recognition of the limitations to the biomedical model in dealing with MSDs led to new interest in a rehabilitation approach. In the pain management field, the history of deploying a rehabilitative model was already well established. This arose from two key historical developments. The first was the concept of pain as behaviour, articulated by Wilbert E. Fordyce (Fordyce, 1978, Fordyce, 1974, Fordyce et al., 1973, Fordyce, 1973, Fordyce, 1970, Fordyce et al., 1968b, Fordyce et al., 1968a); and the second was the development of the cognitive-behavioural model of chronic or long-term pain problems that stemmed from the success of the stress-inoculation approach with in the field of clinical psychology (Turk, 2003, McCracken and Turk, 2002, Turk and Okifuji, 2002, Flor et al., 1985, Turk and Rudy, 1987, Turk et al., 1985, Turk et al., 1980). The notion that individuals are active processors of information, and that this involves many levels of the central nervous system, is a key assumption for the cognitive-behavioural theory of pain (Turk and Rudy, 1989).

It is noteworthy that, in effect, the conclusion that a presenting MSD-related pain problem is a chronic one is ultimately arrived at by exclusion. The consequences of making a Type 2 error in which disease is present but not diagnosed may be severe. For this reason multiple diagnostic tests usually provide comfort to clinicians and patients alike. The conclusion that the presenting pain problem is chronic leads directly to the question of what will be most helpful to the patient. The rehabilitation approach to MSD-related pain problems has led to a useful heuristic that contrasts three different healthcare models:

- The *acute pain model* in which there is an active doctor who provides passive treatments, a passive patient who accepts and complies, and the goal is for a cure to the problem.
- The *rehabilitation model* in which there is an active team of health professionals, an active patient who participates in the process, and the major goal is for maximal restitution of function.
- The *chronic pain model* in which there is a supportive team of health professionals, a patient who is hopefully active and participates, and the major goal is to manage the problem.

The overall biopsychosocial or rehabilitative approach is now considered to be appropriate to all but the acute pain model, where an outright cure is sought. A more full discussion of strategies to prevent the development of long-term pain-related disability due to MSDs is below.

However, demonstration of the effectiveness of treatment and clinical management approaches for MSDs took many years to be completed (van der Weide et al., 1997). It is true to say that the role of pain management programmes, by whatever name they are called, is now well established (van Tulder et al., 2002, Cutler et al., 1994, Guzman et al., 2002a, Karalainen et al., 2001, Flor et al., 1992, Turk, 1996b, Feuerstein and Zastowny, 1996, McQuay et al., 1997, Linton and Ryberg, 2001, Thorbjornsson et al., 2000, Williams et al., 1996), including endorsement for effectiveness with both subacute and chronic problems from systematic reviews within the Cochrane

Collaboration (Karjalainen et al., 2001a, van Tulder et al., 2000c, van Tulder et al., 2001, van Tulder et al., 2002).

There are significant terminological problems in this area of healthcare with the terms “multidisciplinary/interdisciplinary”, “functional restoration”, “work hardening” “functional conditioning (Elders et al., 2000b)”, and “pain management” are often used interchangeably when referring to rehabilitative programmes. However, they may refer to very different services in real life. There is an important lack of standards for programmes in this area (CARF The Rehabilitation Accreditation Commission, 1999, CARF The Rehabilitation Accreditation Commission, 1998). However, it is clear that the most commonly used theoretical model is the cognitive-behavioural, and this remains the most widely researched to date. No matter what jargon or terminology is used, the two principal targets of programmes are:

- Distress reduction (including subjective pain)
- Activity/function/participation enhancement (including productivity)

There are a number of key features that successful programmes hold in common, including the following:

- Selected, motivated participants
- Pre-admission goal setting
- Structured timetable providing routine
- Defined timeframe for the programme
- Emphasis on participation in activity and exercise
- Self-management orientation
- Group programme, with individualisation
- Regular progress review, with feedback (often daily)
- Multiple interdependent therapeutic targets (including social, vocational, psychological, and physical)
- High intensity of input (e.g. >100 hours)
- Problem-solving training
- Relapse prevention approach
- Supportive follow-up emphasizing independence and self-management

There are also a number of important variations between programmes that depend on the case-mix, and clinical or healthcare context. These include:

- Addressing pain, medication, mood
- Occupational/vocational focus
- Target patient group (LBP, fibromyalgia, etc)

It should be emphasised that exercise programmes are not a substitute for the type of rehabilitation programme outlined above. In many countries healthcare providers do promote extended exercise therapy, but in a systematic review for the Cochrane Collaboration van Tulder et al (van Tulder et al., 2000a) concluded that (for CLBP) it is unclear whether exercise therapy is more effective than inactive treatments, or whether any specific type of exercise is more effective than another. Furthermore, the International Paris Task Force on Back Pain in 2000 (Abenheim et al., 2000) concluded that patients who have chronic low back pain should perform physical, therapeutic, or recreational exercises. However these conclusions were made with the caveat to “...[bear] in mind that no specific active technique or method is superior to another”. Another very recent review (Manniche et al., 2002) concluded that “the most effective exercise programme and the optimal combination of exercise and other effective treatment modalities for different subgroups of LBP patients remain to be determined”. This seems to be a reasonable summary statement. This means that admitting a patient to an extended exercise programme, of

any type, is unlikely to be a suitable substitute for a comprehensive multidisciplinary cognitive-behavioural programme that incorporates an activity and exercise component and that focuses on RTW outcomes.

Programmes are generally provided for people with persistent (chronic) pain problems, such as chronic low back pain (CLBP)(Tveito et al., 2004). However, there is important evidence that long-term problems may be prevented through the provision of Programmes during the sub-acute stage, between the “acute” and “chronic” periods (Linton and van Tulder, 2001, Linton and Ryberg, 2001, Linton and Hallden, 1998, Linton et al., 1989, Linton et al., 1993b, Linton et al., 1993a, Karjalainen et al., 2001a, Kendall et al., 1997, Pincus et al., 2002). There is some uncertainty about the optimal timing for this, but indications are that it may apply to the 4- to 12-week from onset period (Elders et al., 2000a).

4.3.2 Cost-benefit analyses

A total of 35 relevant studies were identified to include in the review and these are listed in Table A6. A further 14 studies were identified as potentially relevant, but were excluded from the review due to the reasons outlined in Table A7. For the purposes of this literature review a cost-benefit analysis was considered as an economic evaluation that compares the costs and consequences of two or more alternatives, where all the costs and consequences are converted to money values. It is clear that this research objective is often difficult to achieve in practice, and this is likely to be the reason for the small number of studies available. Cost-benefit studies may be conducted from a variety of perspectives, for example, from the patient, healthcare provider, insurer/funder, or societal perspectives (Drummond et al., 1987, Drummond, 1987). The quality of research evidence varies substantially. For this reason, the levels of evidence published by the Oxford Centre for Evidence-Based Medicine in 2001 are used whenever relevant in this review (Phillips et al., 2001).

4.3.2.1 Qualitative studies

The direct cost of sickness absence to businesses in the U.K. for the year 2001 was estimated at £11 billion per year by the CBI (Confederation of British Industry), and indirect costs to the nation were estimated as £23 billion per year (Beaumont and Quinlan, 2002, Confederation of British Industry (CBI), 2001). In the US the figure is estimated to be \$US 1.2 trillion annually in direct costs to companies (Fisher, 2003). The cost-effectiveness of many treatments or procedures for MSDs such as back pain have not been quantified (Goossens and Evers, 1997). It is known that almost none of the commonly used biomedical treatments for back pain problems have any significant impact on health status or RTW outcomes (Hansson and Hansson, 2000).

4.3.2.2 Case series

The effect of implementing a medical care utilisation review programme in the workers compensation system in Washington State in the US was studied in a retrospective case series that compared data for claims filed in the 2-months after implementation with historical data from before the programme (Battie et al., 2002). The back and neck injury cases were nearly all sprains and strains. Cases were followed for the next 2 years to determine the impact on compensation payments. No differences were observed between the before and after groups with respect to the numbers of days work loss, total healthcare costs, and compensation/disability awards for either permanent or partial loss. The authors concluded that positively influencing clinical outcomes through the use of a quality programme and treatment protocols is challenging. This study provides Level 4 evidence (Phillips et al., 2001).

A prospective case series conducted in North Carolina in the US investigated the comparative outcomes and costs of health care for 1555 consecutive acute low back pain cases seen by GP's (N=39 urban; N=48 rural), Chiropractors (N=32 urban; N=32 rural), and Orthopaedic Surgeons (N=29) (Carey et al., 1995). Follow-up was by telephone, with total duration of 24 weeks, or just under 6-months. The key outcome variables assessed were level of function, work status, use of healthcare services, and patient satisfaction. The total costs of healthcare were also calculated. No differences were observed for any of the outcome variables between the patients treated by different types of providers. However, there was a significant difference in the total cost of care. Orthopaedic surgeons were the most expensive, then the chiropractors, and the GP's were the cheapest. The authors concluded that these results provided evidence that outcomes are similar for acute low back pain patients irrespective of the type of care they receive, but that primary care providers are the least expensive. This study provides Level 4 evidence (Phillips et al., 2001).

Another US case series involved a retrospective review of 184 workers compensation claims for low back injuries that were treated by employer-retained doctors (company doctors) (Chibnall et al., 2000). The goal of the study was to investigate impairment ratings, costs, and duration from a number of variables using regression analysis. It was found that impairment ratings made by the company doctors were predicted by diagnosis, surgery, pain, the year the rating was made, and the clinic where the doctor worked. These findings suggest that impairment rating for compensation purposes is highly subjective. Diagnosis, medical tests, and impairment rating predicted claim costs. The effectiveness of treatment was not directly addressed. However, the results of this study indicate that for MSDs such as back pain the cost of a claim, and the associated level of disability, may be a result of treatment duration. This study provides Level 4 evidence (Phillips et al., 2001).

A Norwegian case series investigated predictors of not returning to work in a group of low back pain patients who attended a light mobilization programme (Haldorsen et al., 1998). The results supported the view that the prognosis for long-term pain is a multifactorial phenomenon depending on a combination of medical, sociodemographic, and psychological factors. It was concluded these could be identified, making it possible to classify patients into low or high risk of a poor RTW outcome. This study provides Level 4 evidence (Phillips et al., 2001). Another prospective Norwegian study investigated the accuracy of predictions for the length of sick-leave required in a mixed sample of workers with musculoskeletal and minor mental health problems, before a worker returns to work successfully. It was found that the workers were significantly more accurate in these predictions than trained medical personnel (Fleten et al., 2004). This study provides Level 4 evidence (Phillips et al., 2001). Taken together, the results of these studies underscore the complex interaction of factors that potentially influence the RTW process, and that successful RTW does not depend solely on biomedical factors.

A company-wide on-site rehabilitation workshop was implemented in a US case series for workers with industrial back injuries (McElligott et al., 1989). The plant had a baseline injury rate of 20% of employees per annum reporting back injuries, costing about \$US 920,00. Following introduction of the intervention, all employees who participated were successfully returned to work within 60 days, and the company saved about \$US 255,000 or more than 25% of costs. This study provides Level 4 evidence (Phillips et al., 2001).

A U.K. case series and descriptive set out to evaluate prompt access to physiotherapy in primary care for low back pain (Pinnington et al., 2004). Data from 614 patients indicated that prompt access to physiotherapy costs less per episode of backpain than conventional management in primary care. This study provides Level 4 evidence (Phillips et al., 2001).

A US case series investigated the effect of implementing standardized diagnostic and treatment protocols for musculoskeletal injuries in a public utility company with about 5300 workers (Wiesel et al., 1994). Results indicated that the number of days lost at work due to new injuries was reduced, the number of surgeries decreased, and overall costs decreased as well. This study provides Level 4 evidence (Phillips et al., 2001).

4.3.2.3 Non-randomised comparative studies

Multiple work-related musculoskeletal compensation injury claims were investigated in a prospective cohort study conducted in the US (Evans et al., 2001). In a group of N=395 cases who had been treated in a functional restoration programme to return them to work. The patients were divided into a group with a history of previous injury (N=172), and a group without (N=223) and followed prospectively. The key outcome variables were RTW, healthcare costs, recurrent injury, and case closure. No difference between outcomes for the two groups was observed at 1-year follow-up. These results indicated that the costs associated with treating recurrent injuries were similar to those of new ones. This study provides Level 2b evidence (Phillips et al., 2001).

A small (N=14) quasi-experimental study was conducted in Belfast to investigate the effects of a ten-week exercise programme on exercise and work capacity in a group of ambulance men (Gamble et al., 1993). The intervention group were given indoor soccer and circuit-training sessions. The outcome of interest was metabolic cost (work capacity) during a simulated emergency exercise, and it was observed that the intervention group had a significantly reduced result. No data on work loss, health care use, or costs were collected but it was suggested that this might be a cost-effective intervention. This study provides Level 3b evidence (Phillips et al., 2001), but the very small number of subjects suggest that it should be interpreted cautiously.

The effects on an early intervention approach to enhance RTW following carpal tunnel surgery were investigated in a case-control study (Goodman, 1992). The intervention group (N=44) were provided with early activation advice and encouragement to re-engage in productive activity and had a 98% RTW success rate, and returned to work significantly faster than the control group (N=23), which had only a 90% RTW success rate. Furthermore, it was noted that the direct costs were 58% lower for the intervention group. This study provides Level 3b evidence (Phillips et al., 2001).

A prospective case-control study was conducted in Sweden to investigate the cost-effectiveness of multidisciplinary rehabilitation programmes for patients with prolonged (chronic) MSDs, compared to usual primary care (Grahn et al., 2000, Grahn et al., 2004). Patient motivation was found to be a significant predictor of total costs. The motivated patients cost four times less than the unmotivated ones. This study provides Level 3b evidence (Phillips et al., 2001).

A Canadian cohort study investigated the effect of a back education programme delivered by a chiropractor to 92 fire-fighters, and compared the results to a control group in another municipality (Kim et al., 2004). Days lost from work was the key outcome variable. A significant reduction by 72% in days lost was reported over the 2-year programme period, resulting in both direct and indirect cost savings to the municipality. The authors concluded this was a cost-effective intervention. This study provides Level 3b evidence (Phillips et al., 2001).

A prospective cohort study compared on-site intervention to offsite work hardening in workers compensation occupational back pain and work-related upper limb disorder (Lemstra and Olszynski, 2003, Lemstra and Olszynski, 2004). Results indicated that the on-site intervention

resulted in lower injury claim incidence, duration, and costs than off-site work hardening. This study provides Level 3b evidence (Phillips et al., 2001).

A small cohort study (N=24) investigated the effect of a multidisciplinary vocational rehabilitation programme combined with case management for a group of unemployed sick-listed workers (Marnetoft and Selander, 2000). That is, they had no job to return to. At 1-year follow-up 54% of those in the intervention group had lowered their benefit levels, whereas only 26% of the control group had. The authors concluded this was a cost-effective intervention, although direct cost data was not published. This study provides Level 3b evidence (Phillips et al., 2001).

The effectiveness of providing injured workers with support groups as a low-cost intervention was investigated in a Canadian quasi-experimental study with non-equivalent control group (Mignone and Guidotti, 1999). However, no benefit was observed from the intervention. This study provides Level 3b evidence (Phillips et al., 2001).

A Swedish cohort study investigated the effect of an individual treatment programme delivered to pregnant women with back or pelvic pain (Noren et al., 1997). The goal was to reduce sickness absence. The women from the intervention group had significantly less sick leave during their pregnancy than controls. Furthermore, there were direct savings from the intervention to 54 women of \$US 53,000. This study provides Level 3b evidence (Phillips et al., 2001).

An Australian cohort study investigated the effects of an early intervention programme for coalminers with back injuries (Ryan et al., 1995). The intervention used a mixture of worker education and advice on activity, early reporting system for back injuries at work, rapid provision of first aid care when applicable at the mine, education of line managers and supervisors about back pain and back injuries, and attempts to influence the beliefs held by workers and managers about back pain. Injury claim rates, lost work time, and total costs all reduced, when compared to another mine in the same area. The authors concluded it was a cost-effective approach that was inexpensive and uncomplicated to deliver. This study provides Level 3b evidence (Phillips et al., 2001).

A small Dutch cohort study in a bus company investigated the effect of a back education programme (Versloot et al., 1992). The key outcome variable was absenteeism. Results indicated a reduction in the mean length of absenteeism, by as much as 5 days per employee per year. However, the incidence of absenteeism was unchanged. This study provides Level 3b evidence (Phillips et al., 2001).

4.3.2.4 Randomised controlled trials

A large RCT was conducted using about 4000 US postal workers, in an attempt to prevent the development of low back injuries in the workplace through the use of an educational programme, and thereby to reduce costs (Daltroy et al., 1997). The educational programme was delivered by physiotherapists and was modelled on the classical back school approach, training both workers and their supervisors. Follow-up was for more than five years, and during this time 360 workers reported a back injury. The education intervention did not reduce the rate of back injury reported, the cost of claims, the amount of time off work, the injury rate, or the rate of repeated injury after RTW. Instead it was found that the education intervention had the propensity to actually increase the report of back injuries, perhaps through raised awareness. The authors concluded that an educational programme was unable to produce any benefits. This study provides Level 1b evidence (Phillips et al., 2001).

About 700 low back pain patients were screened for putative risk of poor outcome in a U.S study, and high-risk patients were randomised to either a functional restoration early intervention programme or to no intervention (Gatchel et al., 2003). The intervention group was significantly less likely to develop chronicity. They had less time off work, used less healthcare and medication, and reported less pain. The intervention group cost significantly less than the no-intervention group. The authors concluded that the process of selectively intervening with a high-risk group of injured workers was very cost-effective. This study provides Level 1b evidence (Phillips et al., 2001).

The use of screening patients by risk of poor outcome was also investigated in a Norwegian RCT using 654 subjects with MSDs (Haland Haldorsen et al., 2002). Patients at least 8-weeks off work were classified as good, medium, or poor prognosis for RTW and randomised to a group receiving either ordinary treatment, light multidisciplinary, or extensive multidisciplinary treatment. The key outcome variable was RTW, and follow-up was completed at 14 months. It was observed that the patients classified with a good prognosis for RTW do equally well no matter which treatment they received. However, those with a poor prognosis did significantly better in the extensive multidisciplinary programme than those receiving ordinary treatment, with 55% returning to work versus only 37%. The authors concluded that multidisciplinary treatment is effective concerning RTW when it is delivered to patients who are most likely to benefit from that treatment. That is, patients need to be selected. Cost-benefit analysis indicated a saving of \$US 800 per patient over the 14-month period of the study. This study provides Level 1b evidence (Phillips et al., 2001).

The economics of a behavioural rehabilitation for chronic low back pain was investigated in The Netherlands in a rare example of good-quality health economic methodology (Goossens et al., 1998). Patients were randomised to either a behavioural programme (an operant programme with attention-control), or to a cognitive-behavioural programme (an operant programme with a cognitive component). The economic outcomes were the costs of the programme and other healthcare usage, costs for the patient, and indirect costs associated with lost productivity. The 3-year study determined that adding a cognitive component to a behavioural treatment did not lead to significant differences in costs and improvement in quality of life when compared with the behavioural treatment alone. Compared with the commonly delivered individual rehabilitation therapy it was concluded that the same effects can be reached at the same or lower costs with a shorter, more intense standardised group programme. The behavioural treatment alone was more effective than providing no treatment in the waiting-list control group. This study provides Level 1b evidence (Phillips et al., 2001).

The effects of an early intervention programme using 'light mobilization' was investigated in a Norwegian RCT using 457 patients with low back pain who had been off work for between 8 and 12 weeks (Hagen et al., 2000, Hagen et al., 2003). At 12-month follow-up it was observed that 68.4% of the intervention group had returned to work, whereas only 56.4% of the control group had. This modest gain was obtained in the first year, but by 3 years follow-up both groups were equal. However, a total saving of \$US 3,497 per patient in the intervention group was observed from that first year advantage obtained from the early intervention approach. This study provides Level 1b evidence (Phillips et al., 2001).

A Finnish RCT investigated the effectiveness of an early intervention programme for subacute low back pain (Karjalainen et al., 2004, Karjalainen et al., 2003). 164 patients were randomized to a mini-intervention group (A), a work site visit group (B), or a usual care group (C). Groups A (n = 56) and B (n = 51) underwent one assessment by a physician plus a physiotherapist. Group B received a work site visit in addition. Group C served as controls (n = 57) and were treated in

primary healthcare. All patients received a leaflet on back pain. The key outcome measures were pain, disability, specific and generic health-related quality of life, satisfaction with care, days on sick leave, and use and costs of health care consumption. These were measured at 3-, 6-, and 12-months. The results indicated that fewer subjects had daily pain in Groups A and B than in Group C. In Group A, pain was less bothersome and interfered less with daily life than among controls. Average days on sick leave were 19 in Group A, 28 in Group B, and 41 in Group C. Treatment satisfaction was better in the intervention groups than among the controls, and costs were lowest in the mini-intervention group. The authors concluded that the early intervention reduced daily back pain symptoms and sickness absence, improved adaptation to pain and patient satisfaction among patients with sub-acute low back pain, without increasing health care costs. They also noted that a work site visit did not increase effectiveness. The direct healthcare costs were 583 euros less per patient for the early intervention group than the controls. This study provides Level 1b evidence (Phillips et al., 2001).

A cognitive-behavioural intervention for sub-acute back and neck pain patients was investigated in a Swedish RCT that aimed to prevent long-term disability and work loss (Linton and Andersson, 2000). This intervention was superimposed on regular primary care. Participants in the intervention had a nine-fold reduction in risk of developing long-term sickness absence. Cost-effectiveness was not directly calculated, but with such a large relative risk it would undoubtedly be impressive. This study provides Level 1b evidence (Phillips et al., 2001).

The effect of offering modified work duties while receiving 100% of normal wages from a national insurer or a benefit so that the employer could obtain a substitute worker at no additional cost was investigated in a Norwegian RCT (Scheel et al., 2002a, Scheel et al., 2002b). However, no difference between groups was observed, indicating no benefit to clinical outcomes or costs due to work loss. This study provides Level 1b evidence (Phillips et al., 2001).

A Dutch RCT investigated the supplemental value from problem-solving therapy added to behavioural graded activity interventions for workers with subacute low back pain (van den Hout et al., 2003). The key outcome measures were days of sick leave and work status. The employees who received the combined intervention had significantly fewer days off work following implementation, than the control group who received only the behavioural intervention. The authors concluded this was therefore a cost-effective approach. This study provides Level 1b evidence (Phillips et al., 2001).

4.3.2.5 Systematic reviews

Systematic reviewers have generally bemoaned the quality of studies available (van der Weide et al., 1997), but this is an almost universal complaint from among their ranks. An early comprehensive attempt to provide a rigorous literature review of RTW work outcomes was completed in the mid-1990's. This three-part review covered acute interventions for low back pain (Scheer et al., 1995), discogenic back pain (Scheer et al., 1996), and subacute & chronic interventions (Scheer et al., 1997). The literature reviewed was drawn from the period 1975 through to 1993. It was observed that few good quality studies were available, and the effectiveness of most of the commonly used treatments or procedures of that time remained unclear. RTW work outcomes were even less likely to be reported. It was also noted that the knowledge that the small minority of chronic cases were responsible for the largest proportion of costs had not been translated into any effective management strategies.

A Canadian review focused on the evidence for secondary prevention of work loss following onset of work-related low back pain (Frank et al., 1998). They concluded their was strong

evidence that employers who promptly offer appropriately modified duties can reduce time lost per episode of low back pain by at least 30%. Furthermore, they noted the growing evidence base demonstrating that subacute intervention delivered between 3 and 12 weeks from time of injury has the potential to reduce lost time from work by 30% to 50%. Unfortunately these observations were not translated into direct cost-benefit calculations, however it is clear that they represent substantial savings (although the exact figure would be dependent on the context of the specific system involved).

The Cochrane Collaboration has produced a systematic review of multidisciplinary biopsychosocial rehabilitation for chronic low back pain that was last updated in February 2005 (Guzman et al., 2001). This review included 12 RCT's and concluded there is evidence that intensive multidisciplinary biopsychosocial rehabilitation with a functional restoration approach improves pain and function, and that less intensive interventions do not show improvements in clinically relevant outcomes. This study provides Level 1a evidence (Phillips et al., 2001).

There is also a Cochrane systematic review on the effectiveness of back schools for nonspecific low back pain (Heymans et al., 2004). The reviewers found moderate evidence suggesting that back schools, in an occupational setting, reduce pain, and improve function and return-to-work status, in the short and intermediate-term, compared to exercises, manipulation, myofascial therapy, advice, placebo or waiting list controls, for patients with chronic and recurrent LBP. However, methodological quality was found to be poor, and cost-effectiveness data was lacking.

The Cochrane systematic review on multidisciplinary rehabilitation for subacute low back pain concluded there is moderate evidence of effectiveness, and that a workplace visit might also increase that effectiveness (Karjalainen et al., 2001b). However, the Cochrane reviews for repetitive strain injuries and shoulder and neck pain found there was insufficient available evidence to draw conclusions (Karjalainen et al., 2000, Karjalainen et al., 2005). The Cochrane systematic reviews for physical conditioning programmes for workers with back and neck pain concluded that “programmes that include a cognitive-behavioural approach plus intensive physical training (specific to the job or not) that includes aerobic capacity, muscle strength and endurance, and coordination, are in some way work-related, and are given and supervised by a physiotherapist or multidisciplinary team seem to be effective in reducing the number of sick days for some workers with chronic back pain” (Schonstein et al., 2003a, Schonstein et al., 2003b).

4.4 REVIEW OF THE GREY LITERATURE

A total of forty-two organisations in six countries were contacted to request information about relevant in-house reviews or unpublished literature. Eighteen responses were received from four countries: Australia, Canada, The Netherlands, and the United States. This is summarised in Table A8.

4.4.1 Australia

Comcare ACT stated that they had only conducted a limited review with local physiotherapists to determine established protocols and practices in the management of musculoskeletal conditions and the return to work process (Stephens, 2005). However, this did not include a cost-benefit study.

The WorkCover Corporation of South Australia have promoted for at least the last two years “the best way to manage a work injury claim is to catch it quickly and focus the injured worker on their recovery... Statistics show that reporting an incident and making a claim within 24 hours of an injury will increase the speed of recovery and can reduce claims costs by up to 45 per cent” (WorkCover Corporation of South Australia, 2003). However, the basis for this assertion is not entirely clear. A project sponsored by WorkCover aimed to explore the impact that managers and co-workers have on recovery and outcomes such as RTW (Robertson, 2004). A training initiative for managers that emphasised open communication between all parties was piloted following an initial survey of workers and managers. It was found that this made a significant difference to the ways in which they would support an injured worker, and it was assumed that this had a beneficial effect on total cost of claims. However, information on outcome and costs was not directly collected.

The Australasian Faculty of Occupational Medicine and The Royal Australasian College of Physicians published a report entitled *Compensable Injuries and Health Outcomes* in 2001 (The Australasian Faculty of Occupational Medicine and The Royal Australasian College of Physicians, 2001). This report was not specific only to musculoskeletal injuries, but did make pertinent comments about rehabilitation and case management. For example, they noted that poor outcomes were likely to result from the management of initial treatment in non-specific musculoskeletal injuries, failure to identify psychosocial risk factors or ‘yellow flags’, failing to encourage resumption of normal behaviours as far as possible, failing to encourage return to work or normal activities. They also stated that poor outcomes could be attributed to handling of case management by insurers (for example, not developing appropriate return to work programmes nor monitoring these, not providing claimants with good information about the effects of long term sick leave, etc.); or, the handling of case management by treating doctors, including specialists (for example, not reviewing treatment by service providers and continuing treatment which is not helping, providing unnecessary treatment, not giving early referral to pain management programmes, not addressing psychological problems such as depression, etc.). Furthermore, they recommended that insurers should develop case management processes so they can identify at risk individuals and refer them for early intervention via appropriate medical management.

CRS Australia was known as the Commonwealth Rehabilitation Service until 1998. The original service began in the 1940’s to assist injured men and women from the armed forces and people on invalid pensions to return to the workforce, and provided vocational rehabilitation services through centres. The current focus of CRS Australia remains helping people with a disability or injury to get, and to keep, employment. CRS provides rehabilitation, injury and disability management services for different types of workplaces all over Australia. In 2003 a report on the cost-benefit of these services was published (CRS Australia, 2003). The careful cost-benefit methodology used assessed both private and public benefits, to calculate a “total social benefit”. The outcomes for more than 16,000 clients receiving vocational rehabilitation services over an 18-month period were reviewed. Slightly more than half of this client group were classified with “physical” injuries or disability. The proportion of these with MSDs was not specified. The key findings were that the average CRS Australia client has approximately 30.36 hours contact hours with CRS Australia, of which 25.91 hours are spent in a rehabilitation programme with the 4.45 hours being spent in pre-programme activities including referral and initial assessment. The average cost of delivering a programme to a CRS Australia client is \$4,397. The total social benefit per client participating in a rehabilitation programme was calculated as \$133,000. Approximately half the benefit was private, and the other half public. This represents an impressive cost-benefit ratio of over 30.

The following stated that they have not completed any relevant reviews or studies: WorkCover New South Wales (Watson, 2005); The Workplace Services organisation in Australia (Scott, 2005).

4.4.2 Canada

The Workers Compensation Board of Alberta stated that they have had a well-developed health care strategy since the mid-1990's and that a part of this strategy is a best-practice continuum of care for soft tissue injuries (Sorochan, 2005). They provided two presentations, one that outlined the strategy (Workers Compensation Board of Alberta, 2003b) and the second that contained some outcome data (Workers Compensation Board of Alberta, 2003a). Healthcare (case) management is conducted using 7 major components: evidence-based disability management tools; negotiation, procurement, contracting; authorised provider network; continuous improvement; coaching, mentoring, support; joint educational initiatives; and, programme development/pilots. Data is available for the period 1993 to 2003. Over this period the average number of physiotherapy treatments per (soft tissue/ musculoskeletal) claim reduced from 20.7 to 12.9. The average duration of physiotherapy treatments measured in number of calendar days reduced from 134.4 to 34 days. Over this period fitness-to-work (FTW) outcomes from physiotherapy treatment, and patient satisfaction remained relatively constant with very small declines. The length of stay in the occupational rehabilitation programme reduced from 58.9 to 28.9 days. The average cost per person served reduced from \$9,718 to \$3,553 Canadian. Finally, the RTW rate following the occupational rehabilitation programme increased from 31% to 60%.

The response from the Workers Compensation Board of British Columbia stated that they have not conducted any formal reviews or studies into the cost effectiveness of returning clients with musculoskeletal disorders to work, using case management and/or work rehabilitation for those with these conditions (Graham, 2005). However, they have operated with the Case Management model and clinical case planning to achieve "Maximal Medical Recovery (MMR)" in the most optimal time. They use Disability Guidelines to target recovery dates. In addition, they have established a network of Rehabilitation Providers of various levels of intensity to help achieve best clinical outcomes and RTW. Every provider is measured in RTW outcome. As a result they believe that they have reduced duration of claims, and therefore, reduction in wage loss where time-loss is a factor. They do measure short-term disability claim costs across the organisation on a regular basis giving some measure of cost effectiveness.

The Yukon Workers' Compensation Health & Safety Board stated that they have not conducted any reviews or studies. However, they do carry out an initial triage of all claims they receive and provide both rehabilitation services and active case management when these interventions are indicated. They also noted that the services they provide conform very closely to the definitions used in the current study being conducted for the HSE and that they consider them to be the current industry best practices (Lilles, 2005).

No response was obtained from the Workplace Safety and Insurance Board (WSIB) of Ontario in response to our request for information. However, the executive summary from a recent "value for money audit" conducted for them by Deloitte is available from their website (Workplace Safety & Insurance Board of Ontario, 2005). This review evaluated the Labour Market Re-entry (LMR) programme. The WSIB have concluded from their research that the best outcome for an injured worker and their employer is when the injured worker can return to their pre-injury workplace. When this is not possible, or seems unlikely, the WSIB then assesses whether the injured worker should enter into an LMR programme. The LMR aims to return the injured worker to suitable work that is safe, restores their pre-injury earnings as closely as possible, and matches

their abilities and skills. The auditors concluded that the LMR yielded a cost benefit of \$363m over the period 1998-2003, and that this indicates, "...the WSIB obtains value from the funds invested in the LMR programme". However, they added that "it is a matter of interpretation as to whether this equates to value for money from an outcomes perspective" because there were limitations in the quality of the data available. This audit review had no control group, or other comparison such as historical data.

The WSIB of Ontario has also published a report on a one-year evaluation of a programme of care for acute low back injuries (Workplace Safety & Insurance Board of Ontario, 2004). The implementation of this evidence-based programme in 2002 was aimed at providing the best healthcare interventions to restore workers to maximum function. The review included over 4,000 workers. The key financial outcomes observed were reduced lost time from work, resulting in lower loss of earnings costs; and, slightly higher payments to healthcare providers. However, it was found that overall costs reduced more than the healthcare costs increased. Unfortunately the actual costs were not reported.

The Institute for Work and Health in Toronto, Canada, has recently conducted a systematic review of workplace-based interventions for RTW (Franché, 2005). A summary of this review is publicly available, entitled *Workplace-based Return-to-work Interventions: A Systematic Review of the Quantitative and Qualitative Literature* (Franché et al., 2004). The reviewers set out to determine which workplace-based interventions are effective, and under what conditions. They concluded there is moderate evidence that early contact with the worker by the workplace, a work accommodation offer, and contact between the healthcare provider and the workplace significantly reduce duration of work disability and associated costs. They also found moderate evidence to support ergonomic workplace visits and "the involvement of an individual with responsibility for RTW coordination" in reducing absence / work disability duration and costs. Moderate evidence also supports educating supervisors and managers, and labour-management cooperation. They noted that certain intervention components were directly related to insurer (funder/payer) activity and decision-making, including the role of case management.

The Workplace Health, Safety and Compensation Commission of New Brunswick has conducted two studies on MSDs with case manager input (Stanley, 2005). The first of these addressed the problem of cumulative trauma disorders (CTD) (Workplace Health Safety and Compensation Commission, 1998a). CTD is also referred to in various countries by several other names including: repetitive strain injury (RSI); occupational overuse syndrome (OOS); work related musculoskeletal disorder (WRMSD); or, work-related upper limb disorder (WRULD). This project was initiated in response to a rapid rise in the number of CTD claims without obvious explanation. The major focus was to identify best practice, and this was subsequently implemented. Before the programme began it was found that only 44% of cases were returning to work, and 54% of those placed on a graded RTW (GRTW) programme returned to sustained employment. By 2000 73% of CTD cases were returning to work, and 71% of the cases placed on a GRTW programme were successful. It was assumed that this represented a significant cost-benefit. However, outcome and cost data was not collected to demonstrate this directly. The second project addressed the problem of reflex sympathetic dystrophy (RSD) (Workplace Health Safety and Compensation Commission, 1998b). The International Association for the Study of Pain (IASP) favours the term chronic regional pain syndrome (CRPS) Type 1, in place of RSD (Task Force on Taxonomy of the International Association for the Study of Pain, 1994). The goal was also to identify best practice, and implement this. In 1996-7 it was noted that the average RSD claim duration was 12.7 weeks compared to an average for the whole system of only 6.9 weeks, and the RTW rate was only 9.7% compared to 45.4% respectively. By 2000, following implementation of the programme, this had changed so that claim duration was 5.8 weeks

compared to 6.2 weeks for the whole system, and the RTW rate was 41% compared to 61.8% overall. Again, it can be assumed that this programme represented value for money but specific cost data was not collected and analysed.

The following stated that they have not conducted any studies or reviews: The Workers Compensation Board of Manitoba (Sexsmith, 2005), the Workers' Compensation Board of Nova Scotia (Boone, 2005), the Saskatchewan Workers Compensation Board (Scott, 2005).

4.4.3 The Netherlands

The Ministry of Social Affairs and Employment in The Netherlands stated that they do not conduct studies themselves and have not completed any reviews (Overbosch, 2005).

4.4.4 United States

The Ohio Bureau of Workers Compensation stated that they have not conducted any relevant reviews or studies (Brabb, 2005). They noted that their return to work programmes track the overall results for Ohio employers in comparison to the results prior to the implementation of a return to work program. However, they do not have any detailed information on MSDs, such as comparing case management and vocational rehabilitation results.

The Washington State Department of Labor and Industries stated that they have not completed any relevant studies or reviews (Silverstein, 2005). However, they are funding a PhD study that they described as a "limited exploratory study" that should be completed in 2006.

Professor Patrick Loisel responded that he was aware of only a single relevant study (Loisel, 2005), one that he had published in 2002 (Loisel et al., 2002). He also noted that he is currently conducting a cost-benefit study based on data collected for a RCT on back pain management for construction workers. However, only preliminary results will be available in late 2005.

The Case Management Society of America (CMSA) recommends some published studies (Marshall, 2005). These cover a number of issues such as management of mental health (Ziguras et al., 2002), diabetes (Norris et al., 2002), psychotic illness (UK700 Group, 2000), and cost-effectiveness of nursing case management (Allred et al., 1998, Allred et al., 1995). However, there are no studies or reviews listed that are relevant to MSDs or occupational rehabilitation.

An editorial from 1996 in the *National Underwriter* describes the results of a cost-effectiveness study for case management that would have been conducted in approximately 1988 (Editorial Comment, 1996). They stated "the (case management) process generated savings of \$11 for every \$1 spent. This survey was reportedly conducted by the Health Insurance Association of America (HIAA), which has subsequently become the organization called America's Health Insurance Plans (AHIP). It is not clear from the editorial what type of case management was studied, although reference was made to medical rehabilitation using case management as "a process which promotes quality care and cost-effective patient outcomes, involves assessing, planning, and coordinating and evaluating health-related services".

4.5 SUMMARY

Terminology is very important, since it is used in a variety of ways. For the purposes of this review there are three key terms:

1. ‘Musculoskeletal disorder’ refers to soft tissue pain or discomfort that may be associated with injury and result in disability.
2. ‘Active case management’ describes the goal-oriented approach to achieving specific work retention and return to work outcomes.
3. ‘Rehabilitation’ refers to restoration of productive activity.

4.5.1 Case Management – effectiveness and cost-benefit

A single definition of case management does not exist. However, case management is now widely considered to be an important intervention. It is a concept, a methodology, not a product or a recipe for better healthcare or rehabilitation. In practice case managers adopt an approach to “do whatever it takes, with whatever you’ve got, for as long as it takes, to get the job done”. Case management is not generally considered as a profession in itself, but an area of practice within one’s profession that involves a unique set of skills.

For work/vocational rehabilitation the usual practice is to deploy a single case manager for an individual worker. The case manager can function as (a) a “broker” who passes on information and arranges referrals without direct contact; (b) a “generalist” who provides both coordination as well as direct services such as advocacy, casework, and/or support systems; or (c) “primary therapist” who supplements the therapeutic relationship with case management functions.

There is a paucity of high quality studies directly evaluating the cost-benefit of case management, due to problems with definitions and complexity of the research task.

This review does not focus on treatments. Active case management needs to be differentiated from delivery of ‘treatment’ that involves the delivery of a defined healthcare intervention, procedure or technique. There is greater overlap between case management and ‘programmes’ or ‘vocational rehabilitation’. Programmes involve the delivery of multiple interventions in a package. Most programmes for MSDs tend to maintain a symptom-focus, and few provide specific RTW pathways, or even an occupational focus. Vocational rehabilitation refers to interventions and supports that help people get into work, and remain at work.

Case management may involve combinations of treatment, programmes, and/or vocational rehabilitation, or none at all.

Case management evolved in response to the limitations of both clinical/medical management and occupational rehabilitation. It has been refined further within the milieu of cost-containment, and this has emerged as one of the major strengths of case management.

The effectiveness of case management appears to depend on the model used and the way it is implemented. For this reason, case management for MSDs is most likely to be delivered using the “broker” or “generalist”. The potential for a conflict of interest when using the “primary therapist” approach to case management has been widely recognised in various rehabilitation programmes throughout the industrialised world.

Case management appears to be most effective, and most cost-effective, when it is deployed as a method for rationally managing the use of healthcare and rehabilitation resources, and as a

method for engaging employers to become effectively involved in work retention and the RTW process.

4.5.1.1 Case management evidence summary

Qualitative studies have indicated there is a reasonable expert consensus in the U.K. and other countries that when an individual is off work for any extended period that person should be supported by a clear RTW strategy, that high quality goal-directed vocational rehabilitation programmes can be very useful, and that the use of active case management to facilitate the RTW process can yield substantial savings and significant reductions in days off work. It seems that the skill of individual case managers is more important than their professional training or background. Information from these qualitative studies has a low level of confidence and is categorised as level 5 evidence.

Studies that observe the effects of system changes, and that make use of before-and-after measures without a direct control or comparison group, are invariably more straightforward to conduct and are therefore more frequently available. Unfortunately this research methodology does not directly test the efficacy of an intervention, restricting the ability to estimate cost-effectiveness. However, case series are useful to indicate areas of promise, and to justify the cost of more sophisticated research. Unfortunately, the effects of implementing policy initiatives and/or system changes (such as case management) are often only available from case series. It is hard to gauge whether consistent findings from many case series should be interpreted as more substantial evidence for an approach, or whether these findings are merely the result of prevailing fads and theories (Deyo, 1993, Deyo, 1991).

The results of several case series indicate that implementation of case management yields substantial cost-benefit. This evidence pertains to using case managers as ‘brokers’ or ‘generalists’, but not as ‘primary therapists’. The benefits observed include reduced healthcare costs, reduced treatment duration, reduced sick-leave and time off work, improved worker productivity, reduced compensation claims and litigation, reduced claim duration and more rapid claim closure. There was also some evidence that these benefits can be delivered without compromising worker satisfaction.

Some of the observed changes in the numbers of lost workdays were dramatic, e.g. up to 20-fold. Furthermore direct cost savings were calculated in some studies as 50% or even up to 70%. Several studies used historical controls, or trends, to provide estimates of the effects of implementing case management, and this provides slightly enhanced confidence in the results.

Many of the case series were conducted over extended periods, up to 10 years. Some were conducted across large populations when case management was introduced to big organisations, such as workers’ compensation boards. Some groups have reported large effects on claim durations and costs, such as 45% reductions. Others have used external auditors to assess ‘value for money’ and concluded there is positive cost-benefit, and some reported this ratio to be as high as 11. Information from these case series has a modest level of confidence and is categorised as level 4 evidence.

A single non-randomised comparative study on case management was identified. However, this case-control study did not investigate the effectiveness of case management per se, rather it investigated the impact of a training programme on the uptake of temporary workplace accommodations as part of the RTW process. While a positive impact was noted, no conclusions on cost-effectiveness can be drawn from this level 3 evidence.

Four relevant randomised-controlled trials were identified. The methodology for RCT's allows a direct test of the effectiveness of an intervention. However, they are limited in scale and the number of variables that can be measured due to higher cost and other practical considerations. Nevertheless, the results of RCT's are considered as level 1 evidence, only superseded by systematic reviews or meta-analyses of multiple RCT's. Of the four identified, two high quality studies reported significant cost-benefit from the use of case management, and two low quality trials reported negative findings. One of the lower quality trials used a very heterogeneous sample that included only a minority of subjects with MSDs, used less suitable measures with so called 'floor effects' where the measure lacks sensitivity below a certain range, and did not measure direct costs. The other low quality trial was an early attempt to select workers with low back pain who had psychosocial risk factors. The early intervention group did no better than the others, but it cost more to deliver this intervention. One of the high quality trials had a six-year follow-up period and found cost-benefit. The other used a shorter time period for follow-up but reported an impressive cost-benefit ratio of 6.8 for those who had case management combined with ergonomic advice. Information from these trials has a high level of confidence and is categorised as level 1b evidence.

In summary, it may be concluded *there is moderate evidence that case management approaches are effective and can yield a variety of benefits which are cost effective*. These include faster return to work, reduced claim costs, and shorter claim duration. However, this evidence only applies to case management that is delivered independently from the provision of healthcare. That is, this evidence does not apply to providers who are simultaneously delivering healthcare interventions and trying to be case managers to their patients.

In summary, the key components of successful and cost-effective case management appear to be:

- Individual worker has their own case manager
- Case manager recognises and addresses personal and occupational obstacles to secure safe and sustainable return to work
- Case manager interfaces with healthcare services but is not also the provider of healthcare
- Best clinical practice guidelines are available and followed
- Case manager monitors all aspects of treatment – appropriateness, timeliness, adherence, outcome, and cost
- Case manager makes treatment funding decisions
- Duration management techniques are available¹
- Case manager liaises directly with employer about return to work
- Case manager negotiates transitional work arrangements
- Early intervention focus

¹ 'Duration management' techniques refer to methods for managing the duration of lost time at work due to injuries/illnesses. The most common method used is a database of normative values for recovery periods by diagnosis and work type, which attempts to predict recovery periods. This can be used to establish expected time periods for recovery and return to work, to assist with planning an individually tailored rehabilitation plan, and as a basis for discussing sick certification with medical practitioners. There are a number of proprietary systems available including those from the Reed Group and Milliman in the US. Sophisticated case management software is usually integrated with this type of database to provide alerts for case managers that specific cases need further scrutiny, and possibly to trigger further action.

Effective case managers:

- Help to define a health or injury problem
- Arrange specific healthcare
- Develop a clear plan for safe sustainable return to work
- Manage resources efficiently
- Proactively use resources to purchase interventions with known effectiveness, at the most beneficial time
- Interact with other stakeholders and adopt appropriate roles:
 - When communicating with an employer – emphasise the worker’s needs
 - When communicating with a healthcare provider – emphasise the employer’s needs
 - When communicating with the worker – emphasise early and sustainable return to work

4.5.2 Rehabilitation for MSDs – effectiveness and cost-benefit

The rehabilitation field is vast and the array of literature is unwieldy, due largely to problems such as lack of consensus about definitions. There are a number of systematic reviews already available.

This review focused on the effectiveness of rehabilitation for MSDs that might be appropriately integrated with active case management approaches, and the cost-benefit from these methods. For this reason the focus is more on interventions for the sub-acute MSDs (4-week to 12-week from onset), than on the long-term or chronic group.

In a simple and ideal world treatment providers would cure and relieve all musculoskeletal symptoms through biomedical or biomechanical means. This naïve belief has led to the proliferation of a wide range of interventions and procedures. However, as the quantity of these has grown and the frequency with which they are delivered has increased, there has been a steady growth in functional disability associated with MSDs.

An important response to these limitations of the biomedical model in treating and managing MSDs has been the development of the biopsychosocial model. This approach has come to predominate evidence-based guidelines for the management of key musculoskeletal problems such as low back pain. There is moderately good evidence that implementing evidence based clinical management can improve both outcomes, and costs.

Current evidence-based guidelines invariably acknowledge the role that ‘multidisciplinary’ or ‘biopsychosocial’ approaches now have in the management of a subset of MSDs. It seems these methods are best reserved for those whose problem fails to respond to treatment, those with significant psychosocial problems, and/or those whose problem has become long-term or chronic.

4.5.2.1 Rehabilitation evidence summary

The effectiveness of MSD rehabilitation programmes using a cognitive-behavioural orientation – variously called ‘pain management programmes’, ‘functional restoration programmes’, or ‘vocational rehabilitation programmes’ – is now well established, with endorsement from systematic reviews including those completed by the Cochrane Collaboration. These programmes have twin goals of distress reduction and returning the individual to productive activity. It has to be emphasised that they are distinct from extended exercise programmes.

Of major importance has been the finding that such programmes can prevent the development of long-term or chronic problems, through provision in the sub-acute stage – for MSDs in the 4-week to 12-week period from onset.

A relatively small number of studies is available that have included a cost-benefit analysis for relevant rehabilitation programmes.

Data from case series has been used to demonstrate differences in the cost of various types of healthcare, while no difference in the quality of outcomes is observed. Other case series have indicated that prompt access to treatment may be helpful in reducing costs, that individuals at high risk for poor outcomes can be identified, and that implementing workplace rehabilitation approaches can reduce costs for time off work substantially (e.g. by 25%). Information from these case series has a modest level of confidence and is categorised as level 4 evidence.

Results from a number of non-randomised comparative studies have provided a number of conclusions including the following:

- the costs of treating injury recurrences are similar to those of new ones;
- early intervention following surgery for MSDs can improve the RTW rate and reduce direct costs by up to 58%;
- patient motivation is a significant predictor of costs, with unmotivated patients costing four times more than motivated ones;
- educating patients about their backs and improving their level of aerobic fitness may reduce days lost from work, but may not reduce the incidence of absenteeism;
- appropriate intervention (such as work hardening) reduces costs more when delivered onsite at the workplace than when delivered off-site;
- injured workers with no job to return to can be cost-effectively rehabilitated into the workforce;
- sickness absence in sub-groups (such as pregnant women with back pain) can be reduced with cost savings;
- early intervention approaches in workers doing heavy manual labour, such as coalminers, can be cost-effective;
- providing support groups for injured workers does not appear to provide any benefit.

Information obtained from these studies has a moderate to good level of confidence and is categorised as level 2 and 3 evidence.

A small number of RCT's are available from a variety of countries. The findings of these studies have indicated the following:

- Programmes providing education alone in the workplace do not reduce injury rates, or the cost of claims, and might even paradoxically increase the rate of reporting problems;
- The process of selectively intervening with a high-risk group of injured workers with back pain (through screening for risk or poor outcome) is very effective and cost-effective;
- Group programmes for chronic MSDs, such as low back pain, are more effective and more cost-effective than individual rehabilitation therapy;
- Early intervention using physical activity for sub-acute (8 to 12 weeks) low back pain speeds up the RTW process compared to no intervention, although this difference is lost by 3 years. However, the advantage in early RTW makes the intervention cost-effective;
- An early intervention programme for sub-acute low back pain was found to be cost-effective in reducing direct healthcare costs;

- A cognitive-behavioural intervention for sub-acute back and neck pain that was superimposed on regular primary care yielded a nine-fold reduction in subsequent work loss;
- Behavioural intervention for sub-acute low back pain can be improved with the addition of problem-solving therapy, and this makes the intervention more cost-effective due to reducing time off work;
- Modifying work duties while continuing to receive 100% of normal wages does not appear to confer any benefit on clinical outcomes, or costs;
- Modifying work duties while continuing to receive 100% of normal wages from an insurer or benefit so that the employer could obtain a substitute worker at no additional cost does not appear to confer any benefit on clinical outcomes, or costs.

Information from these trials has a high level of confidence and is categorised as level 1b evidence.

There are a number of relevant systematic reviews available. The key findings from these reviews include the following:

- A small minority of cases with chronic MSDs are responsible for the most costs;
- Employers who promptly offer appropriately modified duties can reduce work loss by at least 30% in workers with back pain;
- Intensive multidisciplinary biopsychosocial rehabilitation programmes are effective in reducing pain and improving function in chronic low back pain, and less intense programmes are not effective;
- Back schools delivered at the workplace may be helpful;
- Multidisciplinary rehabilitation programmes for sub-acute low back pain are effective, but it is not clear whether this extends to neck or shoulder pain due to lack of research.

Information from these reviews has the highest level of confidence and is categorised as level 1a evidence.

In summary, it may be concluded there is strong evidence that *rehabilitation programmes using a cognitive-behavioural orientation and an activity focus are effective, and cost-effective at reducing pain and increasing productive activity in both the sub-acute and the chronic groups.* There is also strong evidence that *the use of these interventions at the sub-acute stage can prevent the development of long-term problems and reduce time off work.* Furthermore, there is good evidence that *this is highly cost-effective, especially when the intervention is selectively delivered to individuals screened as having a high risk for a poor outcome.*

The key components of good quality service delivery appear to be:

- An effective method to identify suitable cases is used with a standardised screening process
- Consideration given to the timing of the intervention, not too early and not too late
- Interventions are individualised by targeting specific obstacles to recovery
- The role of the case manager is integrated with the intervention through an agreed individualised rehabilitation plan
- The content of the intervention is:
 - Focused on return to work
 - Cognitive-behavioural in orientation (with a problem-solving approach)
 - Activity-based
 - Integrated with the workplace
 - Based on evidence-driven protocols

5. VIEWS OF STAKEHOLDERS ON EFFECTIVE PROGRAMMES FOR ACTIVE CASE MANAGEMENT AND REHABILITATION OF MSDS

5.1 OVERVIEW

This section provides a summary of the outcomes of three methods of data collection, used to inform the development of model programmes for active case management and rehabilitation of MSDs. The three methods of data collection were:

1. A postal questionnaire for those with MSDs
2. An on-line questionnaire for professionals (involved in delivery of existing programmes)
3. Focus groups conducted with groups of professionals (involved in delivery of existing programmes).

5.2 QUESTIONNAIRE FOR THOSE WITH MSDs

5.2.1 Aim

The aim of this questionnaire was to establish the perceptions of employees with MSDs in relation to how these have been managed by their employer, any treatment / therapy obtained via work, and concerns about the impact of their MSD on their work and/or returning to work.

5.2.2 Sample

The questionnaire was distributed through occupational health and other professionals to individuals with MSDs within their company / client company. This was achieved using contacts into companies who were given an explanatory letter, and between 6 and 20 copies of the one page questionnaire with reply paid envelopes, which they were asked to issue to appropriate colleagues / patients. These professionals were mainly recruited through attendance at focus groups. Three outpatients / physiotherapy clinics, were also issued with copies of the questionnaire (240) and asked to distribute them to appropriate patients (i.e. those who were in employment).

Over 500 questionnaires were issued, from which 75 completed questionnaires were returned. The questionnaire was completed anonymously, so the source of the returns is not known.

5.2.3 Results

5.2.3.1 Nature of discomfort and associated absence

The following levels of MSDs were being experienced by those who returned the questionnaires:

- Respondents experienced discomfort in their back (47% of respondents), neck (41%), shoulders (35%), legs and feet (33%), arms, wrists and hands (24%).
- The prevalence of back pain and upper limb and neck discomfort is similar to HSE national statistics (2003/4) on site of MSDs. The prevalence of lower limb disorders in this sample is higher than that identified in HSE statistics (17%).
- 55% had experienced discomfort for more than 6 months.
- 72% had taken time off work due to their discomfort, 21% were currently off work.

5.2.3.2 Therapy provision

- 68% of respondents had been provided with some therapy or treatment for their discomfort (e.g. physiotherapy, chiropractic etc) by their employer.
- 89% agreed that the organisation should provide therapy for those with discomfort.
- 70% agreed that if the organisation provided therapy, they would be happy for the organisation to specify the therapy and provider they should go to.
- The majority (96%) agreed to follow the advice of an advisor or therapist provided by the organisation.
- 70% agreed that they should have time off work to attend clinics or appointments.

5.2.3.3 Employee perceptions and concerns

Respondents were asked whether they agreed / disagreed with a series of statements concerning their perceptions, experiences and obstacles to working.

- 70% felt pressure to be working at full capacity despite experiencing discomfort.
- Exactly half (50%) were concerned that any pain they experience at work will worsen their condition.
- The amount of support those with MSDs received from colleagues was mixed (38% agreed that colleagues were happy for those who experience discomfort to work reduced hours or undertake different tasks, while 22% disagreed).
- Just over half (54%) were confident that their manager understood the limitations their discomfort causes.
- 63% were happy for information about their discomfort to be shared between all relevant individuals in the company.
- 72% thought it is / would be useful to discuss their discomfort with other work colleagues who are experiencing similar problems.
- 42% thought that disclosing the extent of their discomfort might suggest that they are no longer able to do their job as well as they used to.

5.2.3.4 Return to work

Those who were absent from work were asked their view on a series of statements concerning their return to work. Twenty five respondents completed this section.

- Just over half (52%) reported being concerned about experiencing more discomfort on their return to work.
- Just under half (48%) reported wanting to be completely free of discomfort before returning to work.
- More than half (56%) reported that they would not be prepared to return to work with reduced paid hours or a lower paid role if they were unable to perform their normal job.
- About a quarter (24%) said that they did not feel confident about doing the same job as they previously did.
- 48% said they would feel more confident about returning to work if they did not have to work their full hours initially.
- In terms of keeping in touch with their colleagues or workplace, only 16% agreed that they would like someone from the company to visit them at home to see how they are progressing.
- Just over half (52%) were in favour with someone from the company phoning them regularly to see how they were progressing.
- Altogether 56% reported that they would like to visit the workplace regularly while off work to keep in touch with their colleagues.

5.2.4 Summary

Many individuals were receiving therapy paid for or provided by their organisation. There was a wide belief that the organisation should provide therapy or treatment, and almost all agreed that they would follow the advice of a therapist provided by the organisation.

Respondents were aware of pressure to return to work, but were also concerned that this may increase their discomfort. Some with MSDs may be reluctant to disclose the extent of their discomfort in case it affects their employer's perceptions of their ability to do their work, and some felt that disclosing the extent of their discomfort may suggest that they are no longer able to do their job as well as they used to.

Several obstacles to returning to work were reported by individuals. Some of these could be classified as 'yellow flags' (personal beliefs and attitudes that hinder recovery), including concern over experiencing more discomfort on the return to work, and the desire to be completely free of discomfort before returning to work. Others related to the individual's beliefs of the relationship between work and their discomfort, with some reporting a loss of confidence in undertaking their job. Almost half thought that a gradual return to work would help their confidence.

Organisation obstacles to return to work ('black flags') were also highlighted, such as individuals not being prepared to return to work with reduced paid hours or a lower paid role if they were unable to perform their normal job.

Many of these issues were also identified by health professionals as obstacles to individuals returning to work. It is important that they are addressed in order to help the individual return to work.

Supporting employees back into the workplace may include phone calls, workplace visits, and visits at home. The most well received of these suggestions was a workplace visit (56%), while the least popular was a visit by a colleague at home (16%). Any arrangements such as these should be agreed through negotiation with the individual.

The relatively small sample size means that these findings should be interpreted with caution, but they do give an indication of the issues and concerns experienced by individuals with MSDs.

5.3 ON-LINE QUESTIONNAIRE FOR PROFESSIONALS

5.3.1 Aim

A questionnaire for professionals was developed with a two fold purpose:

- To obtain information from professionals on any MSD rehabilitation and active case management programmes they were running, including to identify whether they had any data on the costs and benefits of these programmes
- To obtain the views of professional concerning the effectiveness of these programmes, and any benefits and obstacles that may be encountered through them.

5.3.2 Sample

The questionnaire was developed to be completed on-line and was available at www.hu-tech.co.uk/question-rehab.html. The link to it was advertised through professional newsletters and journals, meetings and websites of identified target professionals. This was done using a one page flyer which outlined the background to the study, and invited professionals to complete the on-line questionnaire and / or attend a public focus group meeting (see Section 5.4) and / or provide further information on the costs and benefits of these programmes within their organisation. This was issued through the following professional networks, who were also asked whether they would be willing to host a focus group discussion at one of their planned events:

Association of Chartered Physiotherapists and Occupational Health Ergonomists (ACPOHE); Association of Occupational Health Nurse Practitioners (AOHNP); British Association of Occupational Therapists (BAOT); British Osteopathic Society; British Physiotherapy and Pain Society; British Society of Rehabilitation Medicine (BSRM); Case Management Society; Chartered Institute of Personnel and Development (CIPD); Chamber of Commerce (in Edinburgh and London where the public groups were held); British Chiropractic Association (BCA); Chartered Society of Physiotherapists (CSP); Ergonomics Society; Federation of Small Businesses (FSB); Institute of Safety and Health (IOSH); Occupational Health Nurses Forum (OHNF); ROSPA; Society of Occupational Medicine (SOM); The Health Foundation; TUC; Working Backs Scotland.

This resulted in the following advertising of the study:

- An announcement on official Websites of BCA, CSP and AOHNP. An advert was placed on the Rehab Window website (www.rehabwindow.net).
- Flyers in delegate packs at conferences, including Case Management Association UK conference, BAOT Conference, Lexis Nexis MSDs Conference, Physiotherapy Pain Association Conference, OHNF (plus exhibition stand), ACPOHE Annual Conference.
- An announcement issued by email or letter to representatives of professional groups (FSB, TUC, CIPD, SOM, Chamber of Commerce).
- An announcement in professional bodies' newsletters and magazines (Safety and Health Practitioner, Osteopath Today, British Chiropractic Association).
- Details were also contained on the Hu-Tech website and the study was advertised through a client newsletter to over 600 individuals.
- Through personal contacts of the research team members.

The questionnaire ran from 1st February 2005 to 9th September 2005.

Altogether 126 unique responses were obtained.

- The majority of the respondents were physiotherapists (70), followed by occupational health nurses (19), and osteopaths / chiropractors (13).
- Only one individual classed themselves as a case manager; although others may have been undertaking case management they did not see this as their main profession.
- The majority worked for large organisations, with more than 250 employees (90 respondents).
- The majority of respondents were working in the the Health Services sector (79).

5.3.3 Results

The full results with individual comments are presented in Appendix 2. These are summarised in this section.

5.3.3.1 Provision of on-site occupational health function

- The majority of organisations (71%) had an on-site occupational health function.
- Half the organisations (48%) had a formal or documented programme for managing those with MSDs.
- Those reported to be involved in the programme for managing employees with MSDs included Occupational Health, Line Manager, HR and Health and Safety professionals.

5.3.3.2 Provision of therapy

- 71% of organisations provided therapy (e.g. physiotherapy, support groups etc) for employees with MSDs. All provided physiotherapy (n=89), 62 provided counselling and 26 provided Cognitive Behavioural Therapy (CBT).
- 66% said therapy was provided to all employees with any MSD, 26% for employees with MSDs that may be caused by other factors (e.g. sports injuries) but which may affect work, 8% only to employees with MSDs that appear to be caused by work.

5.3.3.3 Reasons for / against the organisation providing therapy

The primary reasons respondents gave as motivators for providing therapy were:

- To avoid chronic MSDs and associated long term absence
- To reduce costs and reap financial benefits
- To ensure duty of care

Where respondents felt that therapy should be limited to those whose MSD was caused or made worse by work, reasons for providing therapy to this selected group were:

- To use limited resources wisely
- Non-work related (or caused) injury was not considered to be responsibility of employer
- Employees should take responsibility for their own health outside work
- Therapy / treatment is also available through the NHS.

Some respondents considered that health was a dual responsibility of the individual and the employer, and both needed to take responsibility for prevention and treatment.

5.3.3.4 Effectiveness of programmes

Altogether 82% of respondents who ran case management / rehabilitation programmes thought that their programmes were either very or quite effective at enabling those with MSDs remain in work or return to work. A total of 95% of respondents thought that the benefits of the programme they ran outweighed the costs, although few had costed data to support this.

Not all respondents were running MSD management programmes. However, when asked for general views about the effectiveness of case management / rehabilitation programmes, 89% of respondents thought that programmes to manage those with MSDs are likely to be cost effective.

5.3.3.5 Obstacles to continue in work and/or return to work

Respondents were asked to identify three obstacles which may prevent an individual with an MSD from continuing in their work. They were also asked when what obstacles would prevent an employee returning to work. Many common themes emerged, and can be categorised as follows:

- Nature of the injury (reduced function, pain, fitness for work) meant that the individual may not be able to undertake their job.
- Nature of task (demands and actual nature of activities involved) may mean it could not be done by the individual, or that it may aggravate their symptoms.
- Individual's fear of aggravating their condition or re-injury through work activities.
- Individual psychological obstacles (fear of not being able to fulfil their duties, loss of confidence, believing they shouldn't work if they experience discomfort, apathy, negative attitude to work or specific job, motivation).
- Work pressures (likelihood of the individual not being able to only undertake 'light duties' or a reduced pace of work).
- Lack of suitable adjustments for the individual (both physical adjustments and adjustments to hours / duties).
- Lack of appropriate, timely advice / treatment / rehabilitation programmes (e.g. unable to access treatment if back at work, long referral or waiting times, GP providing inappropriate sickness certification), meaning individuals did not get the treatment they required for their condition, or were (inappropriately) signed off work.
- Lack of support from colleagues and their perceptions of the abilities of the individual to do their job.
- Lack of management support for the individual (including support to attend appointments in work time).
- Lack of awareness among managers / employees as to how to manage / support those with MSDs.
- Management belief that individuals should be 100% fit before returning to work.
- Individuals not following best practice or implementing information that has been provided (e.g. poor posture, poor manual handling technique).
- Financial and legal impact (e.g. individual potentially receiving reduced pay during a graduated return to work programme or being better off on Statutory Sick Pay than during a graduated return to work; organisation's legal standing if individual is back at work and is re-injured).
- Travel to work difficult for the individual.

5.3.3.6 Obstacles encountered with running these programmes

Respondents were asked to identify any problems they had encountered when setting up or running their rehab programme. These included (from most reported to least reported).

- Fellow workers (colleagues of the individual with MSDs) not understanding the abilities / limitations of the individual
- Management not understanding need for programme
- Cost of therapy provision
- Lack of line management commitment
- Lack of senior management commitment
- Lack of time for programmes

- Individual not willing to participate
- Statutory Sick Pay (SSP) not covering reduced hours (in a graded return to work programme)
- Lack of in-house skills for managing those with MSDs
- Lack of suitable therapy providers
- Employees self certifying sickness absence.

5.3.3.7 Main benefits of programmes

Respondents were asked to identify the benefits they thought would arise from these programmes. These included (from most reported to least reported).

- Quick return to work
- Reduced sickness absence costs
- Improvement of the individual's functional ability
- Retention of skilled staff
- Improved morale
- Improved productivity

5.3.4 Summary

There was a strong perception that programmes to actively case manage those with MSDs were likely to be cost effective, although a minority of organisations had evidence of this. However, there was anecdotal support for the view that they were likely to be cost effective. This highlighted the need for collection of data which would allow appropriate analysis to be undertaken.

In terms of overcoming obstacles to implementing these programmes, there is a clear need to communicate effectively with all those within the organisation concerning the approach adopted in such a programme. This includes managers as well as co-workers. Because cost is also seen as a barrier, a clear demonstration of the cost effectiveness of these interventions will help persuade managers of the benefit of these programmes. If managers are persuaded of the benefit of these programmes, appropriate resource (time and money) are likely to follow.

5.4 FOCUS GROUP DISCUSSIONS

5.4.1 Aim

Focus group discussions were held with interested parties, with the aim of:

- Identifying current perceptions of rehabilitation programmes
- Identifying conceptual obstacles to programmes
- Exploring motivational factors for employers, employees and their representatives in the area of rehabilitation

5.4.2 Data set

Six focus group discussions were conducted for Phase One. Three of these were public sessions (2 in London, 1 in Edinburgh), and three were held at existing meetings of professional bodies: ACPOHE Annual conference, IOSH local group, The Ergonomics Society Annual Conference. The public meetings were advertised through flyers and notices in newsletters and websites, as described in Section 5.3.2.

A total of approximately 140 professionals attended the sessions. The majority of the delegates were physiotherapists, although other professions were also represented including: health and safety advisors, health and safety professionals, case managers, occupational health advisors, occupational therapists, vocational rehabilitation consultants, Alexander Technique trainers, health and safety trainers, and ergonomists. Some worked in-house providing this service; others provided the service externally (e.g. as consultants).

5.4.3 Perceptions of existing case management and rehabilitation programmes

It was clear that there are a very wide range of different approaches currently being adopted; there was clearly a lack of a 'standard' approach. Even the meaning of the terms 'case management' and 'rehabilitation programmes' varied widely. There was however an almost universal consensus regarding the need for early referral to an occupational health service of some sort and the associated benefits of this. Some made use of in-house services, others contracted out the provision (with therapy provided off site), while others contracted out, but with therapy provided on-site. Some felt that it was more appropriate to have an in-house service as appropriate advice could be given concerning return to work and workplace changes, with knowledge of the individual and their work, and also the needs of the business. However, it was recognised that this relied on good resource from the company, and may not be appropriate in smaller companies.

The use of a 'case manager' is quite widespread, although the profession and role of this manager varies widely across different programmes. Some have an occupational health background (OHN/OHA), others are OTs, physiotherapists, and others do not have a medical or allied health background, but have received training to be case managers.

There was evidence of some 'conflict' between different professions about their role in the treatment / rehabilitation process and who should act as gatekeeper in addressing cases. For example, some believe that the case management role is to actively manage the case but not to provide services, while others feel the case manager should do both. This aside, it is felt that there should be more emphasis on 'vocational' considerations when making assessments, i.e. that the needs / abilities of the individual in relation to their work should be considered, and as far as possible work adjusted to enable them to remain in work or return to work. It is acknowledged that the GP is often the gatekeeper to a service, particularly for employees in SMEs who are less likely to have access to an in-house occupational health service. Concerns were raised about the lack of time and awareness among GPs regarding the vocational considerations required when considering an individual's rehabilitation, and it is perceived that many GP's lack interest in the RTW process. Many argued that physiotherapists should also have 'occupational' experience if they are to conduct an appropriate assessment and provide suitable treatment.

It is evident that there are problems with gaining senior management commitment to programmes; as a result of a lack of commitment, those programmes that are in place are not always what would be regarded as 'best practice' by the providers. This lack of senior management commitment is thought to be due, in part, to the lack of evidence base for the cost effectiveness of programmes. The lack of effective data gathering, monitoring and evaluation of programmes, which may be partly due to the complexity of cost benefit analysis required, contributes to the shortage of this information. Many delegates reported that it was difficult to obtain accurate and complete data on the costs of MSD related injury, sometimes because the data was collected by different departments, or because the data recorded was inadequate (e.g. not sufficiently detailed), or that management would not accept the added costs of collecting information. Confidentiality can also limit the sharing of information. If an organisation is to be

able to evaluate the impact of the service the aims and methods of evaluation (including what data is required and how this will be recorded and monitored) should be considered at the inception of the service. The model should therefore present the issues to consider in evaluating a service and outline the steps required at the planning stage.

It was reported that often employers are unwilling / unable to be flexible about return to work or encouraging retention through provision of alternative duties. We were told that, in practice, employers often find it difficult to implement a phased RTW programme, or to use light/selected duties. Discussion with the delegates led to the suggestion that greater awareness of the benefits of these programmes may help overcome this. A concern over what was meant by 'light duties' was expressed.

Reference was made to the differing philosophies of Private and NHS services. It was felt by some to be easier to implement a rehabilitation programme through a private service provider as there was more flexibility in approach and openness to new ideas. It was also pointed out that the referral and waiting list systems used by the NHS services do not readily allow for triage or prioritisation of RTW cases, and this sometimes undermines the process.

It was highlighted that there is a general lack of awareness among organisations about the possibilities and benefits of providing rehabilitation, this is particularly apparent in SMEs. Line managers have an important role to play in the process and greater awareness is required among all stakeholders if programmes are to be introduced and new and existing programmes are to be effective.

5.4.4 Obstacles to effective design, implementation and evaluation of these programmes

The organisational, managerial or conceptual obstacles to effectively running these programmes were identified by delegates as described below.

5.4.4.1 Psychosocial obstacles

There was a lot of reference to psychosocial obstacles to recovery and nearly all of the delegates felt quite strongly that it was important to investigate these as part of the initial and return to work assessment. The benefit of a clinical psychologist as part of the multidisciplinary team was highlighted by some. Other specific issues included:

- People become used to seeing doctors, and this leads to reinforcement of their condition and adoption of the 'sick role' (this is known as iatrogenesis). The benefit of early intervention and treatment helps to cut down on this psychological dependence; the provision of advice that encourages individuals to self-manage their own condition (as outlined, for example in *The Back Book*), also helps to reduce this dependence.
- If people don't like their work or have difficult relationships at work their motivation for full recovery is reduced significantly. It is important to have a team member who can identify psychosocial issues and address both the 'yellow' and the 'blue' flags and help to change attitudes.
- The team needs to find the right time to help a person get better – when the person is ready to. There was broad agreement that if the person does not want to get better the treatment provided will invariably be ineffective.

- If an individual was pursuing a claim against the employer they were often reluctant to take part in rehabilitation programmes, which were perceived as being aimed at reducing litigation against the company.

5.4.4.2 Culture and awareness

The importance of having the right workplace ‘environment’ for the success of programmes was universally emphasised, in particular the need for commitment to the programmes by all stakeholders. Lack of commitment is seen as an important obstacle to effectiveness of programmes.

- Lack of senior management commitment to a programme means that it can be under-resourced, not supported by policy and not communicated effectively to employees.
- Employees not taking responsibility for their own health / recovery. The perception of individuals (users) can be a significant obstacle to the success of a programme e.g. the expectation that one session will fix 5 years of pain and suffering.
- It was reported by some that Trade Unions can be resistant to a gradual return to work although it is not understood why this is the case.
- The culture in some organisations is that it is ‘normal’ for people to take sick leave, and almost that people are entitled to a certain amount each year. The provision of 6 months sick leave on full pay sometimes reduced the motivation for the individual to get better quickly.
- In some organisations HR are reluctant to encourage individuals to return to work (partly in case of claims being taken by the individual), so they do not question the length of time off suggested by the GP even when it appears to be inappropriate or excessive.
- Managers and individuals’ expectations regarding sickness absence was seen as an obstacle. In some companies there was reported reluctance to contact people at home as it could be seen as putting pressure on them.
- It was noted that team dynamics in the workplace can change quickly when staff are off work, and this can alter the ability of the individual to return. For example, some staff may feel that their responsibilities have been transferred to other colleagues; and many staff feel guilty about letting their colleagues down if absent.
- Some commented that other support programmes such as EAPs could be useful and sit alongside this sort of rehabilitation programme. There was thought to be some benefit in EAPs being provided externally, in order to improve outcomes due to the perception of greater objectivity and confidentiality.
- The way that accidents and absence are reported can encourage increased absence or mis-information about absence. E.g. if there is a weekly bonus scheme, those who become absent during the week due to an accident will get the bonus, while those who become absent due to illness will not – this leads to an over reporting of accidents. Some bonus schemes mean there is also a reduced motivation to return that week.
- One professional chiropractor identified that there is limited cost benefit evidence in the UK of the effectiveness of chiropractic or other therapies, so managers do not know which therapy to recommend individuals for. This is because the studies have not been done to demonstrate this; although there is evidence in other countries. Unless there is evidence of the effectiveness of the treatment, companies may be unwilling to recommend individuals for it.

5.4.4.3 Resourcing and financial

Costs for the organisation

- Cost of setting up a service (before the evidence of its impact can be guaranteed) is an obstacle to adopting programmes given the lack of cost benefit evidence currently available.
- The way that many organisations are structured financially means that those who pay for the service are not those who see the benefits, and this can have a big impact on the commitment of the organisation or individuals to the service. It was reported that where there had been investment in a service and improvements made, in some cases funds have then been withdrawn as the ‘impact’ becomes less marked.
- Lack of adequately trained personnel to deliver services.
- Lack of involvement of line managers, partly due to lack of time and knowledge. If rehabilitation is not emphasised as an important part of their duties they will not focus on it.
- It is costly and difficult for SMEs to set these programmes up, and to know where to get the support from. They can be difficult to co-ordinate, and, in an SME, may rely on the drive and initiative of one person.

Financial costs to the individual

- Some organisations require staff to take annual leave to cover their graded return to work before reaching previous hours / capability; this can be an obstacle to enabling gradual return to work.
- People becoming used to being off work / benefits of time at home, reduced costs of childcare etc means there can be less incentive for the individual to want to return to work.
- Some delegates referred to the tax implications of providing rehabilitation / physiotherapy – it can be seen as a perk of the job, which means the individual has to pay tax on the service. This can be an obstacle to an organisation providing the service; however it is possible to get round this by ‘prescribing’ the treatment (i.e. getting agreement from the GP for it).

5.4.4.4 Management of service

- Poor data collection and auditing means that the monitoring and evaluation of a service is not always easy. This does not help the case for future investment in services. Lack of good evaluation of services means there is a shortage of evidence based data to encourage employers to introduce services.
- The lack of control of the service providers can be an issue, e.g. inability of physiotherapists and other lead professionals at the centre of the programme to sign an employee off work or back on from sick leave means that the judgement about fitness for work is being made by someone who does not have as much information about the work requirements. If a person has been signed off work by their GP for three weeks the individual may not access the organisation’s service until after this time has lapsed. Alternatively if the service provider considers that the employee is able to return to work before the ‘sign off’ period, there can be reluctance by other stakeholders to allow that.
- Lack of communication between stakeholders and professionals (e.g. employee, Manager, HR and OH providers) was regarded as a significant barrier to effectiveness of

programmes, it is considered that lack of clarity of roles and formalised procedures may contribute to this lack of communication.

5.4.4.5 Variations in service delivery

- Line managers do not always follow the procedures outlined by the organisation, often delaying referral and this means that people are not always seen as soon as they should be (as outlined in a company's policy). Similarly the recommendations for restricted duties are not always well communicated to all stakeholders. This can have a knock-on effect of the service not being regarded as fair or equitable.

5.4.4.6 Work organisation

- Some organisations find it difficult to introduce gradual / phased return to work, e.g. off-shore work makes this particularly difficult. It may be regarded as 'too difficult to arrange'. If the benefits are not well understood employers may consider the setting up of arrangements to outweigh the benefits, particularly if the phased return is over a short time period. Raising awareness of the benefits of phased return to work may encourage employers to be more flexible, particularly if they are aware of the increased likelihood of a successful return to work and future retention.
- When there is a dispersed workforce it is difficult for them all to have equal access to the service. Those based at the centre where the service is provided have the best access to it; it is difficult to ensure remote / homeworkers / branch workers have good access to either this or an equivalent service.

5.4.4.7 GP involvement vs occupational physician

- There was comment that GPs sometimes have difficulty when signing people off from work as they have a confidential agreement with the patient, and may not be able to communicate as freely as they would wish with the employer.
- GPs were reported generally to be very pleased when there was an occupational physician or rehab service provider for their patient, as GPs were aware of their limitations in helping with rehab (e.g. knowing what tasks may be appropriate for the individual etc).
- There was some feeling that an occupational physician could bridge the gap between the GP and the workplace.

5.4.5 Motivational factors for running or taking part in these programmes

Delegates recognised that there were a range of motivators for the employer, individuals and those involved in providing the service as to why they should support or participate in the service. These motivators were:

5.4.5.1 Employers

- To reduce the costs of absence. However due to the lack of information most organisations have regarding the cost effectiveness of programmes, these benefits may not be seen to be greater than the initial cost of establishing a service.
- To prevent skills shortages, particularly when staff are very specialist and therefore difficult to replace, or replacement is expensive.

5.4.5.2 Employees

- To enable quicker return to work. The willingness to return to work is recognised as a critical factor in the success of programmes. One company represented, for example, have worked on changing the attitudes of employees as well as the nature of treatment to improve outcomes. However, employees do not always take responsibility for their own health (e.g. undertaking exercises etc) and therefore may not be proactive in facilitating their return to work.
- Other perceived benefits for the individual are feeling valued by the organisation due to the provision of the service; and reduced discomfort / improved health.

5.4.5.3 Health professionals or service providers

- To standardise procedures and ensure consistency of approach within an organisation. This was reported as the main reasons for developing structured programmes, particularly for organisations which had multiple sites.
- To clarify the roles and responsibilities of stakeholders.
- To encourage retention and quicker / sustainable return to work.
- To contribute to the overall performance of the organisation.
- To seek to deliver 'best practice'.

5.4.6 Key features that should be included in a model of best practice

Professionals in the focus group sessions suggested, based on their experience, that the following are the key features that should be included in a model of best practice.

5.4.6.1 Strong business case

Many of the delegates were working in services which needed to prove their cost effectiveness, and delegates were aware of the need for a strong business case to support the service; however, few had this information available. There was a need for a cost effective approach based on evidence, with clearly defined supporting policy and procedures covering:

- What is included in the programme (e.g. whether work and/not non-work related MSDs to be treated).
- Clearly defined roles and responsibilities of all those involved in the programme.
- Clear systems and procedures which are communicated throughout the organisation.

5.4.6.2 Culture

Employees, employers and service providers need to have shared goals in terms of rehabilitation for the organisation and individual. Communicating clearly on the role of each of the stakeholders will be essential to working towards these common goals. The organisations' systems and procedures need to support these goals, with a commitment from all parties concerned.

A number of delegates reported that for a programme to be effective it required not only good policies and procedures, but acceptance of and compliance with these by local line managers, to ensure that the individual was properly supported in work (e.g. appropriate workplace changes, time off to attend clinics, flexible working etc).

5.4.6.3 Evaluation and benchmarking

A means of recording the costs of MSD related ill health is essential to allow full evaluation of any rehabilitation programme. Feedback should be provided to all stakeholders so they are aware of the outcomes, both for individuals, and for the impact of the service. It was considered by some delegates that a national requirement for reporting sickness absence (similar to RIDDOR reporting) may assist in providing valuable benchmark data.

5.4.6.4 Case Manager

There was perceived to be a need for a 'case manager' to ensure quick response, co-ordinate treatment and liaise with stakeholders (specifically the individual, line manager, and a service provider, and HR as appropriate). However, there needs to be more clarity regarding what the role of a case manager involves and the skills required so that the most appropriate case managers can be identified. It was not felt that the case manager necessarily needs to be a certain 'profession' but rather the best person to fulfil the defined role, within the culture of the organisation (whether the case manager is in-house or externally contracted).

There was a consensus that case managers needed particular skills, specifically an understanding of the individual's task and job role, a knowledge of the organisation, ability to discuss and relate to stakeholders at all levels both within and out of the organisation. There were mixed views as to whether the case manager needed to have significant medical knowledge (e.g. be trained as an occupational health nurse, OT, physiotherapist etc). However, most felt that the skills required meant that this role could be undertaken by non-medical personnel. Some suggested that those who more fully appreciated the vocational element of rehabilitation would be more suitable than those who are limited to a medical model of rehabilitation. i.e. those who could identify appropriate workplace changes and encourage the individual to return to work with modified duties / workstation etc as well as considering the medical treatment opportunities.

5.4.6.5 Competence of professionals

Clarification of roles (outlining the key skills of case managers, rehabilitation specialists and GPs) may help in ensuring that service providers are competent. Those providing treatment and advice need to have knowledge of the work the individual undertakes to be able to provide appropriate treatment and action planning. Current gatekeepers (e.g. GPs) may lack the knowledge required, yet may be the first port of call for those without occupational health services, particularly SMEs. Provision of occupational health services for SMEs was regarded as important in ensuring that employees have access to appropriate support. It was noted that at least two professional organisations in the UK have developed standards for case managers recently. The CMSUK (Case Management Society of the UK) document has already been published, and the VRA (Vocational Rehabilitation Association) version was due for publication soon after the focus groups (spring / summer 2005).

5.4.6.6 Early referral and assessments

There was broad, strong agreement that early provision of suitable advice (e.g. what to expect, what the person should be able to do, how to manage pain / restrictions etc) is essential. It was also agreed that an appropriate assessment of the treatment required should be provided. Both these elements are usually contained in an initial assessment by the service provider. Some felt that it is possible to provide treatment too early, which is not always cost effective as recovery may occur without treatment. There was also broad agreement for the need to undertake an appropriate assessment for the individual's return to work – this should include an assessment of the tasks, equipment, organisation etc. In most cases this will require a workplace visit, but in

some cases it may be judged as not required due to the nature of the MSD, or similarity to jobs already assessed.

It is thought that a model rehab programme may need to present a good practice ‘Initial assessment’ and ‘Return to Work assessment’. Suggestions for these assessments were presented at some of the focus group sessions; there was a consensus that the model could be more like a tool kit with practical resources.

5.4.6.7 Flexibility

Delegates reported that programmes needed to be flexible to ensure individual cases are managed effectively (action based on an individual assessment rather than a standard response in terms of timescales or nature of treatment). Many delegates highlighted the importance of a multidisciplinary approach to ensure the right treatment/ involvement of different professionals. Treatment and rehabilitation should not just focus on the physical ability of the individual as psychological obstacles can play a significant part in determining / preventing recovery.

5.4.6.8 Involvement and communication

There was a reported need for involvement of all stakeholders in managing each case, with clear guidance on the role of each stakeholder, actions required, timescales and methods of communication between them. Some reported the effectiveness of case conferences, and regular review to ensure cases were dealt with in a timely manner and appropriate treatment provided.

5.4.7 Summary

Although a range of different professions were represented, common themes emerged from the discussions, with broad agreement on the elements required for successful case management. It was clear that there was a range of programmes in place, which broadly came under the banner of case management / rehabilitation; most had been initiated within the last 5 years, and many within the last 2 years. As such, delegates were yet to prove the effectiveness of these programmes.

Following the focus groups, some delegates provided further information about their programme as part of the study’s consultation process. Many also agreed to participate in further consultation on model programmes in Phase 2 of the study.

5.5 SUMMARY OF VIEWS OF STAKEHOLDERS

It is common for those with MSDs and those who have taken time off in relation to their condition to be concerned about their ability to work at full capacity, and its impact on their health, and also about other peoples’ perceptions of their condition. This was reported both by those who are experiencing MSDs and by professionals working with those with MSDs.

Most are happy for their employer to specify the kind of therapy they need and to follow the advice of their therapist. Therefore, any workplace programme has a key role to play, not just in providing therapy but, in raising awareness and supporting individuals by responding to their concerns, which can be a major obstacle to retention and/or returning to work.

The majority of workplace programmes provide therapy for all employees with MSDs, irrespective of whether this is caused by work; it was usually recognised that whatever the cause of an MSD it may impact on the individual’s work and therefore it was in the organisation’s interest to address it. Generally, organisations that only provided therapy for those with work

caused MSDs would prefer to extend the service to cover all causes of MSDs, but were constrained by financial restrictions.

The main obstacles to effective delivery of services were reported as lack of awareness of the benefits of such as service and commitment to it, lack of resources and lack of appropriately skilled service providers.

Based on the information generated in the first phase of this research, the key features of any workplace MSD case management / rehabilitation programme can be summarised as:

- Strong business case to persuade managers of the benefit of these programmes.
- Awareness within the whole organisation (management, individuals, HR, occupational health) of the benefits of a programme, and expectations of it.
- Supportive culture including commitment from senior management.
- Planned data collection, evaluation and benchmarking in order to ensure continual improvement of the programme and measure the economic impact.
- Effective case management.
- Competent professionals.
- Early referral and assessments of individuals into a case management programme.
- Flexibility to respond to each case appropriately, with a multidisciplinary approach, providing appropriate therapy as well as responding to individual concerns / psychosocial obstacles.
- Involvement of, and communication with, all stakeholders in tailoring a programme for an individual.

6. INFORMATION FROM COMPANIES ON MODELS OF ACTIVE CASE MANAGEMENT AND REHABILITATION PROGRAMMES

6.1 METHODS

Information was sought from organisations that were running active case management or rehabilitation programmes for those with MSDs. Of particular interest were organisations that had information on the costs and benefits of these programmes. Organisations were identified through adverts / notices in professional journals / newsletters (see Section 5.3.2); those who reported on the on-line questionnaire that they had some information and were willing to provide more details; those who attended the focus group discussions and had further information on the costs and benefits of their programmes. Some organisations were also identified through word of mouth.

Organisations that were identified as potentially having information on the costs and benefits of their programmes were contacted and either visited or a telephone interview was conducted. In this, information on the structure and scope of the programme was obtained, along with any information on the costs and associated benefits of the programme. Where it was available and possible, organisations provided documentation relating to the cost and benefits of their programmes.

6.2 FINDINGS

Data were collected from 26 organisations that identified that they had some form of information about the costs and benefits of an MSD management programme they were running. Other organisations were also contacted but did not have relevant or forthcoming data.

Most of those who provided data (17) were employers receiving or running a service in-house; six were providing a physiotherapy or rehabilitation service to clients (one of these had cost benefit data relating to 4 client organisations); two other respondents were NHS Trusts providing a service for patients.

A range of types of rehabilitation and case management programmes were undertaken by organisations. In many cases these were relatively new programmes (started within the last 5 years), although in several cases the programmes had been running for longer. The scope and nature of the programmes varied, depending on the organisation's structure, resources and needs.

Organisations were asked whether they had any information on the costs and benefits associated with their programmes. However, a limited amount of information was forthcoming, and it was not possible to undertake full cost-benefit analysis on it. Some of the difficulties in collecting and analysing these data were:

- Many organisations did not collect data, or did not collect it in sufficient detail to be able to determine the costs and benefits of their programmes e.g. the reason for a period of sickness absence was not recorded; or sickness absence data for short term sickness (less than 7 days) was not collated by the organisation.
- The incidence / reports of MSDs were not only affected by the case management / rehabilitation programme. In some organisations there were confounding factors such as

changes in process and equipment, an aging workforce, or a redundancy programme which increased the reports of MSDs.

- It was difficult to assigning the costs and benefits to a programme where a service had been running for a number of years and had evolved and changed over that time; there may not have been a clear ‘start point’ or good baseline data.

Cost information was generally better known than benefit information; furthermore, it was easier to quantify cost information if the treatment / therapy / rehabilitation / case management was contracted out.

Benefit information was harder to obtain. This was typically based on estimates of speed of returning people to work (with and without the service), for those who were absent. It was generally difficult to quantify the amount of absence prevented by running these programmes; some of the cost benefit information is based only on the speed of returning those to work who were absent, rather than the benefits of preventing absence, and could therefore be seen to be conservative.

It was difficult to identify and quantify indirect costs of MSDs, such as the costs associated with decreased productivity and reduced quality due to MSDs and no organisation had attempted to do this. In addition, costs associated with management time for managing those with MSDs (e.g. staff recruitment, overtime cover, retraining etc) were typically not known. Other studies have estimated these indirect costs to be between 1-2 times the direct costs (e.g. CBI 2001).

With the data available it was therefore not possible to undertake full cost-benefit analysis, with the exception of three organisations. Data relating to their costs and benefits are shown in Tables 2a, 2b, 3 and 4. Information about all the programmes is summarised below, grouped into approaches. An overview of the key components of the programmes and the cost benefit information where available is given in Table 1.

6.2.1 Internal case management by Occupational Health Department. Treatment or therapy provided on-site from a health care provider employed directly by the organisation

This model was adopted in three healthcare trusts, and had previously been adopted in a food manufacturing organisation. Either the occupational health department or the physiotherapy team act as the case manager; advice is provided (either by telephone or face to face contact), and staff advised to return to the service if their discomfort has not improved after a period (e.g. a week). Treatment is provided, based on an assessment of need. Workplace assessments are undertaken if required.

Two of the NHS Trusts had information on the costs and benefits of the service. Both Trusts regarded their service as being cost effective. Using the data available the research team estimate that for every £1 spent on the service there was a saving of between £1.48 and £3.38 (when taking a medium estimate – see Tables 2a, 2b and 3 for the breakdown of costs and benefits).

One organisation involved in food production had calculated that their service was at least paying for itself (i.e. if the physiotherapist was not available due to holidays etc, it was more cost effective to provide a temporary replacement than to not provide the service). No detailed cost benefit data were available.

6.2.2 Internal case management by Occupational Health Department. Treatment or therapy provided on-site from a health care provider contracted in to the organisation

This model is similar to that described in 6.2.1, but the therapy provided (physiotherapy) is contracted in, rather than being employed directly by the organisation. The treatment is still provided on-site. Two organisations (large food manufacturing, and vehicle manufacturing) were working in this way; no cost benefit data were available on this programme, but the programmes were perceived by the organisations to be effective.

6.2.3 Internal case management by Occupational Health Department / Human Resources. Treatment provided off-site by external supplier

In this model cases are managed internally by the Occupational Health department or Human Resources, and individuals requiring therapy (in all cases it was physiotherapy that was provided) received that off-site from an external supplier. The individuals were referred to this through the OH / HR department. In some cases the external supplier acted as the case manager after referral by the organisation.

Eight organisations provided details of how they were implementing this model. They represented: pharmaceutical, construction, light manufacturing, oil and gas, transport and financial services. One service provider described this model, where they sometimes acted as the case manager for their clients.

In these cases the cost of treatment was known by some of the organisations, but the internal management costs for case management were not known. Cost / benefit information provided by the different companies was:

- a. The cost of treatment was £25 per session (53 sessions were provided in one year to 8 people). Cost of absence per day was estimated by the company to be £70. They estimate that for every £1 spent there was a saving of at least £2.06 in prevented absence (based on one of the eight individuals known to have returned to work sooner because of the treatment); it is known that others were able to avoid absence, and incidence of repeated absence were reduced, although this has not been costed.
- b. Cost of physiotherapy was approximately £400 per person. No information on the benefit of the service was available, although the service was perceived by the company to be beneficial with people thought to be returning to work quicker.
- c. Cost of physiotherapy was approximately £500 per person. No information on the benefit of the service was available, although 30 of the 68 staff in the programme could continue with their normal job (i.e. without requiring restricted duties) and 26 of the 38 staff on restricted duties could return to their normal job. There is no information on the cost effectiveness of the programme.
- d. One organisation introduced an overall programme to manage sickness absence through a case management approach. This reduced sickness absence by 0.9% within the organisation; however this was not divided into cause of absence, so the impact on MSD management is not known. There was no information on the cost or financial benefits of the programme, although fast-track physiotherapy was perceived to be cost effective.
- e. In one organisation, for every £1 spent on physiotherapy, the organisation calculated that there was a saving of £8.12 through faster return to work (the fast-track physiotherapy

service avoided a 5.5 month NHS waiting list for treatment – which was the typical length of the local waiting list).

- f. In an NHS Trust there was a 42% reduction of MSD related sickness absence; not all of this was attributable to the case management programme (other initiatives were undertaken simultaneously to the programme being introduced), but it is estimated that for every £1 spent on fast-track physiotherapy there was a saving of £4.76.

All who were undertaking this type of programme perceived it to be beneficial, although full cost benefit data were not available.

6.2.4 Contracted therapist / treatment provider acts as the case manager. Treatment is provided on-site

Three organisations were providing case management / treatment (all physiotherapy) in this way. Individuals either self-referred to the physiotherapist or were referred through the Occupational Health Advisor. In one programme the evidence was that for every £1 spent on this type of service between £1.37 and £2.28 were saved (Oxenburgh et al 2003). In another programme the saving related to £1.71 for every £1 spent. It was estimated that approximately £10,000 was saved in travel costs by providing the service on-site (102 treatments).

One organisation did not have any cost/benefit information on this, but reported that the service was 'known' to have saved money.

6.2.5 External case management providing advice / referring for treatment

Five organisations were providing / using a service which offered telephone advice to individuals and case management, with identification of appropriate treatment / therapy and referral on to this. Only one of these organisations had information about the costs and benefits of this service: based on the information provided, it was estimated that for every £1 spent on the service there was a saving of £1.97. This included the cost of the treatment provided.

6.2.6 Exercise and Functional Restoration Programmes

These are programmes for those who are absent with MSDs (typically low back pain) or who experience chronic back pain. Those who suffer chronic low back pain, or repeated absences cost significant amounts to organisations as compared with those who do not experience chronic pain.

One physiotherapy service which undertook a functional restoration programme for those absent / with chronic pain reported that for every £1 spent there was a saving of:

- £2.71 (108 participants, Royal Mail)
- £2.44 (89 participants, Utilities) medium estimate cost figure; depending on the number of sessions received by the individual the benefit could be higher.
- £7.20 (8 participants, Ambulance Trust)

Based on the information provided, a back rehabilitation programmes (including group exercises) run by a city council was estimated to save between £1.57 and £4.61 for every £1 spent. The programme was perceived by the organisation to be effective.

Two NHS Trusts were providing back rehabilitation programmes. One did not have any cost/benefit data relating to this. However one organisation estimated that for every £1 spent (by the

NHS) there was a saving of between £2.18 and £8.04 (direct salary costs for the companies whose staff were treated).

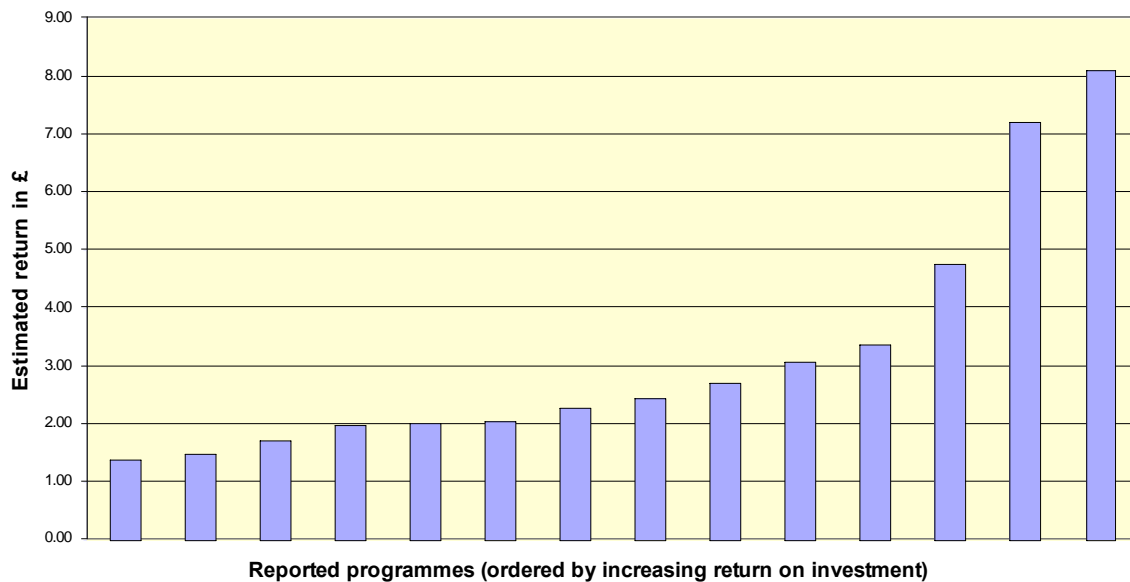
6.2.7 Programme to create consistent message on MSD rehabilitation

Two large, multi-sited organisations undertook programmes to ensure there was a consistent message on the management and treatment of MSDs within their organisations. Some fast track physiotherapy was already being provided, but not consistently within the organisations. The programmes particularly focussed on educating managers and all those involved in case management in an appropriate approach. One organisation (beer distribution) identified that for every £1 spent the company saved £2 (direct salary costs). The other organisation (pharmaceutical) did not identify any impact of the programme on long term MSD absences, although a significant impact on stress/ anxiety/ depression absences was recorded (the programme was addressing all work-related absences). The impact on short term absences was not measured in this organisation.

6.2.8 Indication of range of cost-benefit savings

Precise figures for the costs and benefits are based on assumptions, and must be treated with caution. However, taken together they indicate the typical range of return on investment associated with these programmes. Figure 1 shows the estimated return on investment for every £1 spent on the programmes reported; the bars on the graph are ordered by increasing return on investment, but it must be remembered that the data have been collected in different ways by organisations and that is not possible to directly compare the costs and benefits of different programmes to identify successful components. Figure 1 should be used for indication only of the range of return on investment for the reported programmes. This implies that for many programmes, the return on investment is £2-£3 for every £1 spent.

Figure 1: Showing the estimated return on investment for every £1 spent on the reported programmes



6.2.9 Details of costs and benefits of a range of UK programmes

Table 1 provides detail of these programmes, and the costs and benefits where these were known. However, organisations collected different data, and it is difficult to create a template by which all programmes costs and benefits can be compared. It is particularly difficult to estimate how much absence may have been saved by the programmes; good baseline data on absence prior to the programme is required to make these assessments, and this was not always available. Assumptions also have to be made concerning management time, and productivity.

More detailed costings relating to three organisations are provided in Tables 2a and 2b (same organisation, two consecutive years), Tables 3 and 4. In these tables, where precise figures are not known, a range of figures are presented representing a low, medium and high estimate (e.g. for line management time in managing those who are absent).

The costs per day (7.5 hours) and hour are based on the average annual salary cost divided by 220 (typical number of working days in a year), multiplied by 1.3 (to reflect non-wage labour costs). Where these are not known they are estimated (e.g. for management salaries), or are based on data on the average wage cost for different industry sectors from the HSE website: http://www.hse.gov.uk/costs/ill_health_costs/ill_health_costs_option1.asp.

Some data in Tables 2a and 2b is based on self-completed questionnaires given to employees 9 months following their treatment. Among other things, the questionnaire asked about whether the service had prevented absence, and helped the individual with their regular duties. Figures on prevention of absence are based on these responses. The figures relating to prevention of repeated absence are based on absence data for the group prior to the treatment and after the treatment.

Table 1: Summary of models of active case management and rehabilitation programmes

Glossary

FTE – Full Time Equivalent
 GP – General Practitioner
 OH – Occupational Health
 OHA – Occupational Health Advisor
 OHN – Occupational Health Nurse
 OP – Occupational Physician

Overview	Example	Details	Cost - benefit
1. Internal case management by Occupational Health (OH); in-house provision of treatment / therapy from internal supplier			
Internal case management by occupational health, with referral to in-house physiotherapist if required.	West London Mental Health NHS Trust	<p>NHS Trust with approximately 3,500 staff at approximately 30 sites. OH department (8 staff = 1 OP, 1 senior advisor, 3 OHA, 3 admin) supported by 4 physiotherapists providing clinics at 4 main sites.</p> <p>Employees with MSDs are referred to the OH department, either through line manager referral or self-referral. Manager referral is prompted by absence of >4 weeks (although sooner, and prior to absence, is encouraged). Cases are reviewed by the OH department, and referred to in-house physiotherapists if judged appropriate (cases are typically seen by physiotherapist within 2 weeks). Where appropriate, work site assessments for individuals are undertaken by the physiotherapists, and the findings are fed to OH department, who act as case managers. The programme has been running for several years.</p> <p>Self-referral to physiotherapy is no longer possible due to lack of funding, but when it was practiced it was thought to be beneficial as it allowed faster access to physiotherapy. Now all cases have to go through the OH department.</p>	No data available

Overview	Example	Details	Cost – benefit
1 (continued). Internal case management by Occupational Health (OH); in-house provision of treatment / therapy from internal supplier			
Internal case management by OH Physiotherapists. In-house provision of advice, and physiotherapy from day 1, if assessed as required.	Lothian University Hospitals Division of NHS Lothian	<p>An in-house physiotherapy and rehabilitation service is provided to staff in the Division (13,500 employees). Most referrals (85%) are self-referral. Others are through the line manager. Referrals are screened by telephone triage; high priority cases are seen within 48 hours. For the rest, advice is provided (written and verbal via telephone). Individuals are encouraged to self-manage and come back to the service if their discomfort has not improved in 5-7 days. Those who return are assessed and receive physiotherapy, advice and workplace assessments / return to work support as appropriate.</p> <p>The service was established in 1997; the estimated cost of initially setting up the service is £6,061 in staff time.</p>	<p>See detailed costing for the service running in 2003 and 2004 in Tables 2a and 2b.</p> <p>For every £1 spent on the service provision there was a saving of between £0.65 and £6.52 (medium estimate £3.08) for 2003 and £1.35 to £5.79 (medium estimate £3.38).</p>
	Primary Care Trust (NHS)	<p>NHS Trust with approximately 1,100 staff at approximately 200 sites. A physiotherapy programme (staffed by one 0.5 FTE) was piloted for 12 months (2003/04); it was run in the physiotherapy department at the Trust's main hospital. Most people self-referred; they received a 45 minute assessment and advice within 3 days of referring, with an average of 3 further 30 minute sessions, if required. 159 people were seen during the programme; 122 were at work, 37 were absent.</p>	<p>See detailed costing in Table 3. For every £1 spent on service provision there was a saving of between £1.31 and £1.62.</p> <p>There were fewer MSD related absences during the pilot (56 incidents in 12 months prior; 37 incidents during the programme). However, the average length of MSD absence was not affected (14 days both before and during pilot).</p>
	Food production	<p>An on-site physiotherapy service was provided for staff in a food production factory. Staff were assessed by the physiotherapist (or OHN out of hours), and provided with treatment if required. This was done as soon as the condition was reported to the service. It was perceived that the service was 'very helpful' in returning people to work or keeping them in work.</p>	<p>The physiotherapy service was calculated to be sufficiently beneficial to warrant the appointment of an extra full-time physiotherapist so that holidays / sickness absence were covered.</p>

Overview	Example	Details	Cost - benefit
2. Internal case management by Occupational Health (OH); in-house provision of treatment / therapy from external supplier			
Internal case management by occupational health, with referral to internally provided (contracted) physiotherapy if required	Unilever	<p>Food production facility with 500 staff.</p> <p>The programme is run by 2 on-site OHAs, a contracted physiotherapist providing 4 sessions per week, and a contracted OP providing 1 session per fortnight.</p> <p>Employees are encouraged to self-refer to OH if they have MS pain which has lasted >7-10 days. Most referrals are self referrals, or OH may contact an employee if informed through line manager, or through Med 3 certification. The OHA assesses the individual and provides advice; if appropriate they refer for physiotherapy. There is approximately a 2-3 week wait for physiotherapy; 8-10 sessions may be provided. The physiotherapist undertakes worksite assessments where appropriate. The OHA case manages: OH, physiotherapist and line manager are involved in case conferences.</p>	Data not available
Internal case management through occupational health, with referral to internally provided (contracted) physiotherapy and osteopathy if required, and on-site rehabilitation.	Honda of the UK Mfg	<p>Car manufacturing with 4,000 employees.</p> <p>The MSD management programme has run for 9 years; it includes prevention (ergonomics and pre-employment testing), on-site treatment (physiotherapy and osteopathy), and rehabilitation (work hardening and work shadowing).</p> <p>The on-site rehabilitation programme involves: assessment of the injury, development of the treatment programme, treatment with continual reassessment, matching the individual's capabilities to the demands of the process / tasks, process / task simulation exercises, process shadowing and return to work. Cases are managed by the OH staff.</p>	Benefits are seen in terms of good morale, low absence, decreasing number of accidents, reducing number of employer liability claims, and improved quality. However, due to many process changes and evolution of the programme over a number of years, it is not possible to undertake a cost benefit analysis.

Overview	Example	Details	Cost - benefit
3. Internal case management by Occupational Health (OH) / HR; external provision of treatment / therapy from external supplier			
Internal case management by occupational health, with referral to external physiotherapy or other treatment if required	Pharmaceutical factory	<p>Pharmaceutical company with 300 staff.</p> <p>Employees come to OH through self referral, line manager referral or HR referral if RTW. OH reviews and manages MSD cases; where appropriate they refer for up to 6 physiotherapy sessions, with review, provided by an external physiotherapist; employees attend in their own time.</p> <p>Use of the physiotherapy service started in 2004. Eight staff were referred in 6 months, receiving 53 physiotherapy sessions in total; several only required 1-2 sessions. The service provided relief from pain, accurate diagnosis of conditions and empowered employees to manage their condition.</p>	<p>The cost of the service was £1,325 in 6 months. The cost per day's absence is estimated at £91 (HSE estimated cost for manufacturing).</p> <p>It is reported that as a result of the physiotherapy 2 employees did not require time off work, which had been expected; 2 employees who had a history of repeated absence had significantly improved attendance; 1 employee awaiting NHS physiotherapy following an operation (likely wait >6 weeks), was able to RTW 6 weeks after the operation having received the company-provided physiotherapy; this was estimated to have saved at least 6 weeks absence (salary cost of £2,730). Another had been inappropriately informed they may require 6 months off work (salary cost of £11,830). Appropriate advice and treatment by the physiotherapist prevented this.</p> <p>Based only on the data relating to the case where 6 weeks absence is thought to have been saved it can be estimated that for every £1 spent on the physiotherapy</p>

			<p>programme (for all staff) there was a saving of £2.06 on speedier return to work.</p> <p>Including the data relating to a worker taking 6 months off work it can be estimated that for every £1 spent on the programme (for all staff) there was a saving of 10.99.</p> <p>The organisation perceives the service to be positive; employee feedback is very positive.</p>
	Gleasons	<p>Construction company with 1000 staff.</p> <p>The line manager should refer employee to OH after a significant period of sickness absence, or series of repeated absences. OH case manage, and liaise with the individual, GP, OP, and line manager. The company will pay for 4-6 physiotherapy treatments if required, or some staff receive it through the company's private health insurance.</p>	<p>The cost of physiotherapy treatment is about £400 per individual, but there is no data on the benefits. The service is perceived to be beneficial; staff are thought to return to work quicker having received physiotherapy.</p>
	Ethicon	<p>Manufacturing company with approximately 1,100 staff.</p> <p>Line manager or self referral to OH department; self referral to OH is encouraged as it is seen as quicker. OH screen cases, and refers for off-site physiotherapy if appropriate (there is typically a 2 week wait to see the physiotherapist).</p> <p>Workplace risk assessments and modifications are undertaken as appropriate by the OH department, who manage the cases.</p> <p>The number of physiotherapy sessions received by staff was high, partly due to a redundancy programme which confounded recovery.</p>	<p>The cost of physiotherapy was approximately £500 per individual. No benefit data, but 30 of 68 staff receiving physiotherapy could continue their normal job without restricted duties; 26 of 38 who had been placed on restricted duties could return to normal job having had physiotherapy. The programme was perceived to be very beneficial, and thought to have prevented people taking sick leave, and reduced the number on alternative duties.</p>

Overview	Example	Details	Cost - benefit
3(continued). Internal case management by Occupational Health (OH) / HR; external provision of treatment / therapy from external supplier			
	Oil and gas company	<p>Oil and gas production, with approximately 2,500 staff.</p> <p>Staff self refer or are referred by their line manager to the OH department. All cases are seen by the OP. Where an MSD is thought to be related to / affecting work, OH will undertake a worksite assessment and will consult with the line manager, individual and health and safety advisor. If appropriate the individual may be referred for physiotherapy and/or the physiotherapist may be requested to carry out an individual work site assessment and remedial action plan.</p> <p>The GP and OP will develop the RTW plan.</p> <p>If referred for physiotherapy through OH and the line manager for work related MSDs, the department will pay for the cost of treatment.</p> <p>Self referrals are given a 30% discount on the cost of physiotherapy whether the MSD is work- or non work-related.</p>	<p>No data available, but departments have been willing to pay for the cost of physiotherapy as they perceive it to be beneficial.</p>
	South West Trains	<p>Train operating company with 5,250 staff.</p> <p>Under the sickness absence management programme line managers should tell OH department if a staff member is absent >2 days with an MSD. OH case manage, and refer for further treatment if appropriate, this includes physiotherapy, and in some cases more complex treatment. Line managers are encouraged to keep in contact with the individual. OH and Personnel will assess the individual if they have been absent for >1 month. OH will undertake worksite assessments and modifications where appropriate. Case conferences with the manager and individual are held when appropriate. OH develops a RTW plan for the individual, and communicates this with managers.</p>	<p>All sickness reduced by 0.9% due to the sickness management programme (saving approximately 6,000 days), but there are no costs specific for MSDs related absences.</p> <p>Fast track physiotherapy is perceived by the company to be cost effective as compared with waiting for NHS treatment.</p>

Continued

Overview	Example	Details	Cost - benefit
<p>In house management of cases by trained HR personnel, with referral to externally supplied physiotherapy if required.</p>	<p>HBOS</p>	<p>Financial institution with 36,000 employees at over 1,000 sites nationally.</p> <p>HR support line managers in absence management; the line managers have responsibility for managing absence.</p> <p>All absence is referred to the HR admin centre. Cases are reviewed, and those which may benefit from external support (OP, physiotherapy and psychologists) are provided with this (which may include up to 8 sessions of physiotherapy). A trigger for external support is an absence of over 10 days. Following the series of treatment sessions there is a case conference (with absence champion, service provider manager, and physiotherapist). The outcome is discussed with the line manager, who owns the RTW plan.</p> <p>‘Absence champions’ (from HR department) work with the line manager as they manage the individual and implement the RTW plan.</p> <p>Health and safety advisors assess workstations as appropriate (prior to absence, or prior to RTW).</p>	<p>In one year (pilot in 2003), 19 MSD cases (with 15 of these absent) were fast tracked to physio. The total NHS waiting time for physiotherapy for these staff was estimated by the company as 2,540 days. The number of days off during physiotherapy was 573 (i.e. the physiotherapy helped them get back to work), thus saving 1,967 days. The company’s direct salary costs are given as £58 per day, giving a saving of £94,059. The cost of the physio was £11,576. This indicates that for every £1 spent on physiotherapy, there was a saving of £8.12 through faster return to work.</p>
<p>In house management of cases by OH with referral to external physiotherapy service.</p>	<p>NHS Trust, service provided by RehabWorks</p>	<p>An NHS Trust with 2,000 employees.</p> <p>Fast track referrals by OH department to externally provided physiotherapy service which provided advice and treatment.</p> <p>The programme ran for 9 months, during which time 104 people were referred, who were either absent or on restricted duties. Following the physiotherapy 103 were able to return to work.</p> <p>Note that a manual handling advisor was appointed into the Trust during the same time period, and some of the reduction in MSD related absence may be related to other activities than the fast track physiotherapy.</p>	<p>MSD related absence fell from 10,049 working days to 5,839. This equates to a direct cost saving of £218,030. The savings related to those that received physiotherapy are not known, but thought to be about £100,000.</p> <p>The cost of providing the physiotherapy was £21,000.</p> <p>It is estimated that for every £1 spent on physiotherapy there was a saving of £4.76.</p>

Continued

Overview	Example	Details	Cost - benefit
<p>External provision of physiotherapy; case management either undertaken by the company or service provider.</p>	<p>RehabWorks (service provider)</p>	<p>This physiotherapy service provider offers a range of services to organisations, including case management, treatment and Functional Restoration Programmes (FRP) (see below). Typically a company's OH department refers an individual to the service. The service provides telephone triage and advice on pain management and exercises. They have found that 50% of staff recover within 1 week and need no further treatment. If the individual is no better in 1 week they phone RehabWorks (or go to their OH department); they are encouraged to stay at work and may receive up to 6-8 sessions of physiotherapy; the physiotherapist will produce a plan for the individual, which may include workplace modifications. On average, 88% of staff recover following this. Of those who need further assistance they may attend a FRP; 95% of those who attend this are able to return to full duties.</p>	<p>Specific data on costs and benefits not available.</p>
<p>4. Internal provision of treatment / therapy from external supplier; therapist acts as case manager</p>			
<p>External physiotherapists acting as case managers, providing treatment at client's sites; individuals self referred.</p>	<p>COPE (service provider)</p>	<p>A physiotherapy organisation provided a service to 17 retail stores with 1,600 FTE employees. The service provided a physiotherapist at each store for approximately half a day per week. Staff self referred or were referred by their line manager. Few were long term absent; most were still at work or had had short term periods of absence. They were given advice, and treatment if appropriate. Workstation / workplace assessments were undertaken where it was thought work was causing or aggravating the condition. The Chartered Occupational Physiotherapists worked closely with the store managers on appropriate work / workplace changes. Case conferences were held if appropriate with the OHA, OP, HR and team manager.</p>	<p>It was reported by the company that during the time of the service provision (2 years) the number of incidents of injury was not affected; however the number of claims taken against the company reduced. Sales also increased in the stores where the service was provided as compared with other stores in the group. It was reported by Oxenburgh that for every £1 spent, the company saved between £1.37 and £2.28 with payback between 6 and 9 months (Oxenburgh <i>et al</i>, 2003).</p>

Continued

Overview	Example	Details	Cost - benefit
<p>External physiotherapist acting as case manager, providing treatment at clients' sites; individuals referred through OHA.</p>	<p>KSC Health Ergonomics (service provider)</p>	<p>This is an OH physiotherapy company, providing an on-site service to a range of companies.</p> <p>They do this on a sessional basis, typically being at a company for at least one session per week.</p> <p>Typically, staff are referred to the service from OH; the physiotherapist will try to see them within one week (depending on the number of sessions the company has requested). They provide advice and treatment; typically they are authorised to provide 6 treatment sessions before review by the client company. They also undertake worksite assessments where appropriate. They support the development and management of RTW plans, liaising with the OHA and line manager.</p> <p>They also provide training for OHAs on ergonomics and rehabilitation, and for staff on good working practices to reduce MSD risks.</p>	<p>In one company, over a 12 week period, 51 people were treated, receiving a total of 102 treatments, at a cost of £1,800. In that time they report that they saved at least 2 people 5 days sickness absence each (as they had been signed off by their GP, but the physiotherapist enabled them to stay at work), which was estimated would have cost the company £3,080 (based on their estimate of £44 per hour, and 35 hour week).</p> <p>For every £1 spent the company saved at least £1.71</p> <p>They estimate the time lost to site if 102 treatments had been received at an NHS clinic during work time would be £13,464 if all attended, and £6,732 if half attended (3 hours per session). Providing the service in-house meant time lost to site was estimated as £3,234 (28 mins per session + 15 mins travel), saving £10,230 in travel costs. The cost of providing a room to deliver the service in-house is unknown.</p>

Overview	Example	Details	Cost - benefit
4 (continued). Internal provision of treatment / therapy from external supplier; therapist acts as case manager			
Workstation assessment and physiotherapy treatment provided on-site by a contractor, paid for by company	Oil and gas production	<p>Oil and gas production, with 1,000 staff at this site.</p> <p>A physiotherapist is contracted in for 16 hours per week. Most of their work (75%) involves workstation assessments and MSD prevention, although they also provide advice and treatment for those referred with MSDs (either self referral or through OH department). 45 people have been referred in 6 months. Typically they receive up to 4 sessions of physiotherapy.</p>	No data available, but service 'known' to have been cost effective. One person with 6 months absences has been helped back to work through the service.
5. External case management, providing advice and referring for treatment			
External case management (telephone) providing advice on self management and exercises, but no treatment	Nationwide Building Society, using Cigna (service provider)	<p>Financial organisation with 16,000 employees over approximately 800 sites.</p> <p>External case management is provided. The triggers for contact with the case manager are an absence of >10 days; the 4th episode of absence in 12 months; workplace accident or injury; planned medical procedure; or concerns over the individual's health. Individuals are referred to the case managers through the line manager (who may be prompted to do so by HR).</p> <p>The case managers (who are OHNs dedicated to Nationwide's case management) provide telephone advice to the individual (self management), and liaise with HR, the line manager and health professionals as to appropriate treatment. They also develop a RTW plan. Treatment is not provided by the company, although the individual is encouraged to use their PHI (not all staff have this), or NHS or to self fund.</p>	No data available

Overview	Example	Details	Cost - benefit
5 (continued). External case management, providing advice and referring for treatment			
<p>Vocational case management through insurance company, at no extra cost to the company. They support the employer and their employees to identify options for return to work.</p>	<p>Unum-Provident (service provider)</p>	<p>The insurer employs about 30 rehabilitation consultants with experience in vocational rehabilitation who provide active case management services to a range of companies.</p> <p>They support companies in managing those employees who are absent, working closely with the OH and /or HR departments. The service provided to their larger clients is proactive and the vocational rehab consultants will typically get involved 4-6 weeks into the absence. They also provide assistance to those employees who have been absent in excess of 6 months when they are able to identify potential for a return to work and facilitate a plan of action with the agreement of all parties.</p>	<p>The service provider reports a 70% success rate in returning people with MSDs to work. They report that this proves the benefits of supporting people as early as possible in their absence from work.</p>
<p>External case management service, with referral for appropriate treatment, and advice to organisation as to effective management</p>	<p>PES (service provider)</p>	<p>PES provides case management to a range of companies.</p> <p>They described the pilot programme run at a utilities company. This involved assessment of 30 individuals with MSDs at the PES centre; some were absent, and some were at work on light duties. Following the assessment a rehabilitation programme was developed for each individual. PES identified suitable treatment providers for this, local to the individual. Physiotherapy was not provided by PES. Following completion of the treatment the individuals were reviewed again by PES. A RTW plan was developed for each individual.</p>	<p>The utility company reported the benefits to be:</p> <ul style="list-style-type: none"> • a 49% reduction in case length • employees back to full duties on average 75 days earlier. • average cost of intervention of £873 per case (evaluation, treatment and final assessment) • Programme cost was reported as £26,190. • Saving arising after removing programme costs was £25,500. • For every £1 spent there was a saving of £1.97

Overview	Example	Details	Cost - benefit
5 (continued). External case management, providing advice and referring for treatment			
External telephone case management service, with identification of appropriate treatment, and advice to the organisation as to effective management	Service provider	<p>This private health care provider offers external off-site telephone case management for their clients. Different models are used by different companies, depending on their needs and resources.</p> <p>They can refer people for physiotherapy, a functional restoration programme (3-4 weeks), or other treatment or assessment as appropriate; the cost may be taken by the employer or through PHI.</p> <p>They develop RTW plans, which are agreed by the individual, line manager and HR.</p>	No data available, although they report this programme helped one company (brewery), prevent 5 cases of MSD related ill-health retirement, and enabling the individuals to return to work, potentially saving ‘a lot of money’.
External absence management programme, with staff required to phone the service with any absence; work related cases are passed to the in-house OH department for case management	Sandwell and West Birmingham Trust	<p>NHS Trust with 7,500 staff based at 3 hospitals.</p> <p>There is an in-house OH department which employs approx 35 staff – including OP, specialist practitioners in OH, OHA, a nurse manager, a specialist practitioner in ergonomics, moving and handling co-ordinators and trainers, physiotherapist, safety advisors and specialists working with the PCT. Within this they have an MSD team (comprising of ergonomist, physiotherapist and moving and handling co-ordinator); this team reports on Trust MSD issues to the OH team, makes recommendations and monitors actions.</p> <p>In 2005 the OH team ran a 6 month pilot of a telephone absence management programme (this is an admin function only); all absent staff phone the external call centre, who take details, screen and pass to OH if work related. If it is an MSD or psychological issue, OH contact the individual (by phone), assess and provide advice. They may request the individual attends the department for a fuller assessment.</p> <p>In addition, managers can refer staff, and staff can self refer, to OH whether or not they are absent. Managers can also consult OH if they have concerns over workplace design issues etc.</p> <p>Staff referred to the service are assessed by an OH nurse (within 5 days), and can be referred for further treatment (physiotherapy, which is provided in house). OH liaises with the line manager, healthcare</p>	No data available.

		provider and develops the RTW plan.	
Overview	Example	Details	Cost - benefit
6. Exercise and Functional Restoration Programmes			
Functional Restoration Programme for those absent with chronic back pain – externally provided, paid for by company	RehabWorks	This physiotherapy service provider offers MSD related case management and treatment (see above) and functional Restoration Programmes (FRP). The FRP have been with those who have chronic LBP, and are absent from work or on restricted duties. Specific examples of work with companies are given below.	
		<p>Utilities</p> <p>A FRP was run for 89 staff who were either absent with MSDs, or had repeated episodes of MSD related absence. At the time of the programme 66 were at work, 23 were absent.</p> <p>Individuals were referred to the programme by the occupational physician. They attended between 4 and 12 sessions, each lasting 1 day. Those who were at work attended during work time.</p> <p>Following the programme there were clinically meaningful changes in pain rating (using the Numeric Pain Rating Scale); Oswestry Disability Index scores (from moderate disability to mild disability); and significant differences in Acute Pain Screening Questionnaire scores.</p> <p>There were also statistically significant changes in static strength and dynamic lifting abilities.</p>	<p>See detailed costing in Table 4.</p> <p>For every £1 spent on the programme the organisation is estimated to have saved between £1.33 and £4.14 (median figure of £2.44).</p> <p>Ill health retirements in the 2 years prior to the programme cost the organisation £262,584 (4 individuals) and £80,238 in the 2 years after (1 individual).</p> <p>Claims for back pain in the 2 years prior to the programme cost the organisation £282,016 (15 claims) and £20,440 in the 2 years after (3 claims).</p>

Overview	Example	Details	Cost - benefit
6 (continued). Exercise and Functional Restoration Programmes			
		<p>Royal Mail</p> <p>Case management was undertaken by the company's OH department. RehabWorks provided a FRP for 108 people identified by OH, who had at least 6-12 weeks absence, or episodes of repeated absence.</p> <p>The programme consisted of advice, exercises and work hardening.</p> <p>44 were on long term sick with an average absence of 31 weeks (a total of 26 person years), with a reported direct cost of £400,000.</p> <p>42 were on light duties for an average of 54 weeks with a reported direct cost of £333,000.</p> <p>22 had episodic absences, with an average of 7 weeks per person per year with a reported direct cost of £45,400.</p> <p>Ill health retirement was likely in 22 cases with a projected reported cost of £308,000.</p> <p>The total cost of MSD related injury for these 108 staff was therefore £1,086,000 before the programme.</p> <p>The cost of the programme was £198,000</p> <p>Following the programme 75 people were able to return to full duties. These represented the following costs:</p> <p>31 people who had been on sick leave for an average of 31 weeks (with a reported direct cost of £281,000).</p> <p>28 people who had been on light duties for an average of 54 weeks, with a reported direct cost of £222,000</p> <p>16 people who had episodic absences, for an average of 7 weeks with a reported direct cost of £33,000.</p> <p>The total saving of MSD related injury for these staff was therefore £536,000 after the programme.</p>	<p>For every £1 spent there was a £2.71 return.</p>

Overview	Example	Details	Cost - benefit
6 (continued). Exercise and Functional Restoration Programmes			
		<p>East Anglia Ambulance Trust (1,200 employees)</p> <p>In 2000 the Trust ran a FRP for 8 staff who were absent for between 9 and 15 months with low back pain, who had no foreseeable plan to return to work.</p> <p>The staff participated in an FRP alongside a gradual return to work, working as a ‘third man’ in a team and gradually reducing restrictions. The FRP lasted between 4 and 12 weeks. All returned to normal duties, with only one relapse of 60 days absence by one employee in the following year.</p>	<p>The direct cost of absence for these 8 workers was £107,080 (1,540 days) before the programme, and £4,172 (60 days) after the programme. The cost of the FRP was £14,292. Staff all returned to productive work. Ill health retirement and claims were avoided.</p> <p>For every £1 spent there was a £7.20 return.</p>
<p>Back rehabilitation programmes (group exercises) – provided in-house, paid for by the company, staff may not be absent</p>	<p>Glasgow City Council</p>	<p>Large city council with 35,000 employees over many sites. MSDs are referred to OH/HR through the absence management process. They are screened by OH/HR and referred to a private healthcare provider if appropriate. There they are assessed by a physiotherapy and either provided with up to 4 sessions of therapy or put on a back rehabilitation programme (piloted in 2001). Those who were thought would benefit were put on the programme; some were absent, some at work, and some returned to work during the programme. The programme consists of 12 sessions of 90 minutes over 6 weeks, combining exercise, advice and relaxation. This is conducted at council central facilities.</p> <p>Staff time to attend the programme (if working) can be estimated as 30 hours (including 1 hour travel time per session).</p> <p>The organisation report that there are indications (following 2 pilots) that the programme was more effective for those with acute rather than chronic LBP.</p> <p>The organisation considers the programme shows they are proactive in supporting those with MSDs, and it is perceived to be effective.</p>	<p>The Council estimate that the direct cost of the service provision will equate to between 2.1 and 6.0 days absence (or for every £1 spent there is a saving of between £1.57 and £4.61 assuming absence length is halved). Including the cost of staff time to attend the service, the service will equate to costing between 7.1 and 8.6 days per person.</p> <p>There are no data on the actual amount of absence it saved; absence levels are reported not to have changed significantly in recent years. However, the number of people who have gone through the programme is relatively low.</p>

Overview	Example	Details	Cost - benefit
6 (continued). Exercise and Functional Restoration Programmes			
Back rehabilitation programmes (group exercises) – provided by NHS, staff released by company to attend; staff may not be absent. (Cost of service provision borne by NHS, benefit felt by company.)	Farnham Hospital	<p>An NHS service provided for patients with chronic LBP, referred by GPs and consultants.</p> <p>Patients attend for a 45 minute group (12) session once per week for 8 weeks. The course involved advice and core stability exercises.</p> <p>Following the programme patients had a statistically significant reduction in Oswestry Pain Index Scores.</p>	No data available.
	Wessex rehabilitation <i>(Wright et al, 2005)</i>	<p>The Rehabilitation Department of a District Hospital compared the effectiveness of 2 fast-access evidence-based interventions for treatment of simple LBP (in 2000). Attendees were off work or on light duties.</p> <p>Group 1 (37 patients) received an advice booklet and one session of advice; Group 2 (43 patients) received advice booklet, back programme involving full assessment, individual treatment and exercise classes over 1-2 weeks. Group 2 showed a statistically significant pain reduction and improved speed of return to work compared with Group 1 (saving an average of 7 days).</p> <p>2 months following the programme 65% of Group 1 and 84% of Group 2 patients had returned to work or changed from adapted to full duties.</p>	<p>The cost of running the Group 1 programme was £8 – 17 per patient and of the Group 2 programme was £77 – 154 per patient (depending on numbers attending). The cost of the employee attending the course was not included. The benefit of returning patients to work 7 days earlier is estimated at between £336 and £620.</p> <p>Therefore, for every £1 spent (by NHS) on the Group 2 programme there was a saving of between £2.18 and £8.04 for the employer (direct salary costs).</p> <p>The Group 2 programme was calculated by the study team to provide an approximate cost saving of between £250 and £578 for every patient.</p>

Overview	Example	Details	Cost - benefit
7. Programme to create consistent message on MSD rehabilitation			
<p>Consistent message on rehabilitation consolidated across sites; roles clarified; fast track access to external physiotherapy and in-house OP provision.</p>	<p>Scottish and Newcastle UK</p>	<p>Beer distribution depot, with 2,000 employees at 35 sites.</p> <p>The OH team were aware of a lack of consistent management approach to absence and rehabilitation, so developed a programme to train line managers about the role of OH and sickness absence. They encourage line managers to become more active in managing those absent, and the employee to have more ownership of their treatment. An OHN assesses the individual and develops an action plan, which could include treatment, modified duties and workplace changes. An in-house OP and externally contracted physiotherapist are available. This has led to active management of those who were absent with MSDs.</p> <p>Following implementation of the programme, more than 85% of employees with MSDs returned to work within 6-8 weeks of reporting the MSD.</p>	<p>The company reports that in the first year (2003/4) the programme cost £95,000 to run, and led to a saving of £285,000 in salary costs. For every £1 spent the company saved £2 (direct salary costs). Similar savings were seen in the second year.</p>
<p>Consistent message on rehabilitation consolidated across wide number of sites through internal OH team; in-house physiotherapy programme already in place</p>	<p>Large, multi-sited company</p>	<p>Pharmaceutical company, with 19,000 staff over 21 sites.</p> <p>The OH team employs 64 staff of whom 49 are health professionals (including OHN, OP, physios); in 2003 they perceived the need to standardise on the approach to case management, for all occupational health issues. They developed a toolkit and training for OH team to provide a consistent message and treatment options. One benefit has been that GPs are now following the advice of the OH department, which has resulted in up to 40% of medical certificates being used for shorter periods (for all absences) i.e. staff are returning to work sooner.</p> <p>Following the initial programme (benefits reported opposite), a Musculoskeletal Impact Team has been set up to focus on greater education and awareness of MSDs to try to reduce MSD related absence. The organisation is planning an MSD awareness campaign aligned with the HSE Backs! 2006 campaign.</p>	<p>The company reports that programme was found to have no impact on costs of long term (>7 day) absence MSDs, although it had a significant impact on stress/ anxiety/ depression absences and other OH issues, resulting in significantly reduced costs.</p> <p>There may be a possible impact on the cost of short term MSD absences, but data for <7 day absences are not available.</p>

Table 2a: Data from Lothian University's Hospital Division of NHS Lothian of 13,500 staff - 2003

Data relates to the period 01/01/03 - 31/12/03. Service staffed by 4 FTE physios.

The service was started in 1997.

Costs of providing the service 2003

MSD case management	Low	Medium	High	Notes
Line management costs				
Number of staff seen	762	762	762	189 of these were absent; 573 not absent
Number of hours per case	0.5	1	2	
Cost per hour	22.93	22.93	22.93	Assume Manager's salary = £29,100
Total (£)	8,735.29	17,470.58	34,941.16	
Service provision costs (staff salaries)				
Total (£)	145,500.00	145,500.00	145,500.00	Service maintenance; not set up costs
Attendance of MSD sufferers during work time				
Number not absent	573	573	573	
Number of sessions	2	4	6	Varied from 2 - 6 depending on individual need.
Time per session (hours)	0.75	0.75	0.75	30 minutes contact + travel time
Cost per hour	13.70	13.70	13.70	Average D grade Nurse's salary = £17,394
Total (£)	11,775.15	23,550.30	35,325.45	
Costs of providing the service (£)	166,010.44	186,520.88	215,766.61	

Benefits of providing the service 2003

Preventing absence

	Low	Medium	High	
Number of staff able to continue in their work	176	176	176	573 (not absent)*31% said it prevented absence†
Estimated no days absence prevented/ person	1.00	10.00	20.5	20.5 = HSE figure for average MSD related absence
Costs per day	102.78	102.78	102.78	Average D grade Nurse's salary = £17,394
Total (£)	18,089.76	180,897.60	370,840.08	

Management time saved due to avoiding absence (project cost to manage staff replacement / investigate incident for those absent)

	Low	Medium	High	
Number of replacement staff	176	176	176	573 (no. not absent)*31% said it prevented absence ²
Number of hours	1.0	2.0	5.0	
Cost per hour	22.93	22.93	22.93	Assume Manager's salary = £29,100
Total (£)	4,035.20	8,070.40	20,176.00	

Speedier return to work

	Low	Medium	High	
No of staff returned to work 'earlier'	n/a	n/a	n/a	
No of days returned earlier	1,550.00	1,550.00	1,550.00	310 weeks phased RTW (average 1.6 per absence)
Productivity rate	0.50	0.75	1.00	
Costs per day	102.78	102.78	102.78	Average D grade Nurse's salary = £17,394
Total (£)	79,656.61	119,484.92	159,313.23	

Improved productivity / work without restrictions

	Low	Medium	High	
No staff whose treated MSD doesn't limit work	345	345	345	60.2% of those not absent (573)†
No of hours saved due to full productivity	3	6	9	
Costs per hour	13.70	13.70	13.70	
Total (£)	14,184.02	28,368.03	42,552.05	

Prevention of repeated absence

	Low	Medium	High	
No of staff prevented from repeat absence	232	232	232	39% of group (762) previously had; reduced to 9%†
No of days saved per person	1.00	10.00	20.5	
Costs per day	102.78	102.78	102.78	Average D grade Nurse's salary = £17,394
Total (£)	23,845.59	238,455.93	488,834.65	

Total benefit of providing the service (£)

Low	Medium	High
139,811.18	575,276.88	1,081,716.01

Low cost estimate : low benefit estimate =	0.84	3.08	5.01	= High cost estimate : high benefit estimate
High cost estimate: low benefit estimate =	0.65	(med : :med)	6.52	= Low cost estimate: high benefit estimate

² Based on self-report via questionnaire 9 months following physiotherapy

Table 2b: Data from Lothian University's Hospital Division of NHS Lothian of 13,500 staff - 2004
Data relates to the period 01/01/04 - 31/12/04. Service staffed by 4 FTE physiotherapists.

The service was started in 1997.

Costs of providing the service 2004

MSD case management	Low	Medium	High	Notes
Line management costs				
Number of staff seen	738	738	738	260 of these were absent; 478 not absent
Number of hours per case	0.5	1	2	
Cost per hour	23.64	23.64	23.64	Assume Manager's salary = £30,000
Total (£)	8,723.16	17,446.32	34,892.64	
Service provision costs (staff salaries)				
Total (£)	150,000.00	150,000.00	150,000	Service maintenance; not set up costs
Attendance of MSD sufferers during work time				
Number not absent	478	478	478	
Number of sessions	2	4	6	Varied depending on individual need.
Time per session (hours)	0.75	0.75	0.75	30 minutes contact + travel time
Cost per hour	14.13	14.13	14.13	Average D grade Nurse's salary = £17,932
Total (£)	21.19	42.38	63.58	
Costs of providing the service (£)	158,744.35	167,488.70	184,956.22	

See notes in section 6.2.9 for further explanation.

Benefits of providing the service 2004

Preventing absence

	Low	Medium	High	
Number of staff able to continue in their work	115	115	115	478 (not absent)*24% said it prevented absence [†]
Estimated no days absence prevented/ person	1.00	10.00	20.5	
Costs per day	105.96	105.96	105.96	Average D grade Nurse's salary = £17,932
Total (£)	12,185.40	121,854.00	249,800.70	

Management time saved due to avoiding absence (project cost to manage staff replacement / investigate incident for those absent)

Number of replacement staff	115	115	115	478 (not absent)*24% said it prevented absence [†]
Number of hours	1.0	2.0	5.0	
Cost per hour	23.64	23.64	23.64	Assume Manager's salary = £30,000
Total (£)	2,718.60	5,437.20	13,593.00	

Speedier return to work

No of staff returned to work 'earlier'	n/a	n/a	n/a	
No of days returned earlier	3,985	3,985	3,985	797 weeks phased RTW (average 15 days per absence)
Productivity rate	0.50	0.75	1.00	
Costs per day	105.96	105.96	105.96	Average D grade Nurse's salary = £17,932
Total (£)	211,125.30	316,687.95	422,250.60	

Improved productivity / work without restrictions

No staff whose treated MSD doesn't limit work	344	344	344	72% of those not absent (478) [†]
No of hours saved due to full productivity	3	6	9	
Costs per hour	14.13	14.13	14.13	
Total (£)	14,582.16	29,164.32	43,746.48	

Prevention of repeated absence

No of staff prevented from repeat absence	87	87	87	17% of 738 expected, but reduced to 6% [†]
No of days saved per person	1.00	10.00	20.5	
Costs per day	105.96	105.96	105.96	Average D grade Nurse's salary = £17,932
Total (£)	9,218.52	92,185.20	182,987.62	

Total benefit of providing the service (£)

249,829.98	565,328.67	918,370.44
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Low cost estimate : low benefit estimate =	1.57	3.38	4.97	= High cost estimate : high benefit estimate
High cost estimate: low benefit estimate =	1.35	(med:med)	5.79	= Low cost estimate: high benefit estimate

Table 3: Data from a Primary Care Trust (NHS) with 1,100 staff
Data relates to 2002 - 04. Service staffed by 0.5 FTE physiotherapist

Costs of providing the service 2004

MSD case management	Low	Medium	High	Notes
Line management costs				
Number of staff seen	159	159	159	37 of these were absent; 122 not absent
Number of hours per case	0.5	1	2	
Cost per hour	23.64	23.64	23.64	Assume manager's salary = £30,000
Total (£)	1,879.38	3,758.76	7,517.52	
Service provision costs (staff salary)				
Total (£)	16,994.00	16,994.00	16,994.00	Service maintenance; not set up costs
Attendance of MSD sufferers during work time				
Number not absent	122	122	122	
Length of initial session (hours)	1.25	1.25	1.25	45 mins + travel (of 30 mins) * 1 initial session
Length of subsequent sessions (hours)	3	3	3	30 mins + travel (of 30 mins) * 3 sessions
Cost per hour	23.64	23.64	23.64	Assume average salary = £30,000
Total (£)	10,815.30	10,815.30	10,815.30	
Costs of providing the service (£)	29,688.68	31,568.06	35,326.82	

Notes:

- The average salary for the PCT staff is taken as £30,000; this includes GPs, nurses and allied health professionals, and administrative staff.
- Management costs are taken as £30,000 (range of £23,000 – 31,000 are quoted as a practice management salary, www.nhscareers.nhs.uk)

Benefits of providing the service 2004

	Low	Medium	High	
Preventing absence				
Estimated no days absence prevented	259.00	259.00	259.00	786 days before programme, 527 after
Costs per day	177.27	177.27	177.27	Assume average salary = £30,000
Total (£)	45,912.93	45,912.93	45,912.93	
Management time saved due to avoiding absence (project cost to manage staff replacement / investigate incident for those absent)				
Number of replacement staff	19	19	19	56 people absent before the programme; 37 after
Number of hours	1.0	2.0	5.0	
Cost per hour	23.64	23.64	23.64	Assume manager's salary = £30,000
Total (£)	449.16	898.32	2,245.80	
Speedier return to work				
No of staff returned to work 'earlier'	n/a	n/a	n/a	Not known
No of days returned earlier				
Productivity rate				
Costs per day				
Total (£)				
Improved productivity / work without restrictions				
No staff whose treated MSD doesn't limit work	n/a	n/a	n/a	Not known
No of hours saved due to full productivity				
Costs per hour				
Total (£)				
Prevention of repeated absence				
No of staff prevented from repeat absence	n/a	n/a	n/a	Not known
No of days saved per person				
Costs per day				
Total (£)				
Total benefit of providing the service (£)	46,362.09	46,811.25	48,158.73	

Low cost estimate : low benefit estimate =	1.56	1.48	1.36	= High cost estimate : high benefit estimate
High cost estimate: low benefit estimate =	1.31	(med:med)	1.62	= Low cost estimate: high benefit estimate

Table 4: Data from a Utility company
Data relates to 2002 - 04

Costs of providing the service

MSD case management	Low	Medium	High	Notes
Line management costs				
Number of staff seen	89	89	89	89 people; 66 not absent
Number of hours per case	1	2	5	
Cost per hour	22.92	22.92	22.92	Assume manager's salary = £30,000
Total (£)	2,039.88	4,079.76	10,199.40	
Service provision costs				
Total (£)	81,631.00	81,631.00	81,631.00	Includes set up and service maintenance costs
Attendance of MSD sufferers during work time				
Number not absent	66	66	66	
Number of sessions	4	8	12	Reported between 4 and 12 sessions per person
Time per session (days)	1	1	1	Each session was 1 day
Cost per day	115.00	115.00	115.00	HSE data
Total (£)	30,360.00	60,720	91,080	
Costs of providing the service (£)	114,030.88	146,430.76	182,910.40	

Benefits of providing the service

Preventing absence

	Low	Medium	High	
Estimated number of days absence prevented	1,115	1,115	1,115	1631 days before; 516 days after
Costs per day	115.00	115.00	115.00	
Total (£)	128,225.00	128,225.00	128,225.00	

Management time saved due to avoiding absence (project cost to manage staff replacement / investigate incident for those absent)

	Low	Medium	High	
Number of replacement staff	21	21	21	Number of absences prevented (23 absent before programme; 2 left, the remaining returned to work)
Number of hours	1.0	2.0	5.0	
Cost per hour	22.92	22.92	22.92	Assume Manager's salary = £30,000
Total (£)	481.32	962.64	2,406.60	

Speedier return to work

Number of staff returned to work 'earlier'				Those absent returned at start of programme; this is accounted for in the avoidance of absence above.
Number of days returned earlier				
Costs per day				
Total (£)				

Improved productivity / work without restrictions

	Low	Medium	High	
No staff whose treated MSD doesn't limit work	18	18	18	27 working with restrictions before prog.; 9 after
Productivity level improvement	0.25	0.50	0.75	These 18 returned to full duties from restricted
Annual salary cost	25,300	25,300	25,300	
Total (£)	113,850.00	227,700.00	341,550.00	

Prevention of repeated absence

No of staff prevented from repeat absence				Not relevant, because the data relates to a group who were experiencing MSDs rather than the whole workforce. The amount of absence prevented for this group is shown above.
No of days saved per person				
Costs per day				
Total (£)				

Total benefit of providing the service (£) **242,556.32** **356,887.64** **472,181.60**

Low cost estimate : low benefit estimate =	2.13	2.44	2.58	= High cost estimate : high benefit estimate
High cost estimate: low benefit estimate =	1.33	(med:med)	4.14	= Low cost estimate: high benefit estimate

6.3 REPORTED CHALLENGES IN IMPLEMENTING THESE PROGRAMMES

Organisations that provided more detailed information on the costs and benefits of undertaking active case management often identified some of the challenges they faced when implementing these programmes. These included:

- Gaining local management support for the programme, and giving them support in undertaking it, particularly where there is a workforce which is geographically dispersed.
- Concern of managers about ‘forcing’ people back to work too soon.
- Organisations with a large and disparate workforce where they have to use a number of service providers (e.g. for physiotherapy) find it difficult to ensure consistency of physiotherapy treatment and the messages given to staff.
- Organisations with off-shore workers face challenges in providing people with therapy, as it is not practical to provide therapy off-shore, and when staff are on-shore (off-duty) they are widely dispersed.

6.4 DISCUSSION

The data it has been possible to collect does not allow full cost benefit analysis to be undertaken. The confidence that can be ascribed to the data may be questionable in some cases. However, taken together, the body of evidence indicates that these types of programmes are cost effective, with return on investments being in the order of £2 - 3 for every £1 spent, although this is based on a limited number of programmes with high variation in the method of estimating the costs and benefits. There are insufficient data to be able to determine whether one model of active case management and rehabilitation is more cost effective than another. It is known from the literature that the small number of people with chronic MSDs result in disproportionate cost, due to prolonged sickness absence and ill health retirement. It is thought that the most appropriate model will depend on the size and culture of the organisation and the nature of MSDs within the organisation, and it is not possible to use this cost benefit information to inform that decision, except to say that the literature shows that can be very cost effective to provide rehabilitation for those on long term sick.

Where no cost benefit information was available the subjective response of the organisations was that the programmes were effective and cost effective. Some of the benefits seen were in terms of improved morale and perceived prevention of absence, both of which are difficult to quantify. No organisation which had started such a programme had stopped it due to evidence of it not being cost effective.

There is evidence that these programmes, in a variety of delivery methods, are cost effective.

7. DEVELOPMENT OF MODEL

7.1 OVERVIEW

The information obtained in Phase 1 of the study was circulated to the research team, and considered in the development of a model of successful, cost effective case management and rehabilitation.

A 2 day meeting was held on 25th / 26th September 2005 which was attended by the research team and two HSE project officers. In this meeting the evidence collated in Phase 1 (reported in Sections 4-6) was reviewed, and the key principles for an MSD rehabilitation / case management programme were identified.

Because it had not been possible to identify the effectiveness of different models based on the data collected in Phase 1, one model was developed, which had suggested actions as ‘minimum’ and ‘additional’ (Table 1 in the model), such that the model should be able to be used by those who had no such programme in place, and who may have limited resources (being able to implement the minimum recommendations) and those organisations which may have greater resources, who also may implement the ‘additional’ recommendations.

In order to keep it simple, the same model was developed for all MSDs, without distinguishing between types. It was thought that the same guidance would be appropriate for all forms of MSDs, although it was important to recognise the evidence relating to maintaining activity for different MSDs. There is strong evidence that the most effective way to manage back pain is to maintain activity and minimise any work absence, as opposed to resting. Although there is less evidence for this being the appropriate method of managing upper limb pain, it is held to be the most effective method; acute inflammatory conditions of the upper limb (e.g. tenosynovitis) may be an exception, for which (temporary) rest seems more appropriate. This was written into the model under the key concepts section, sub-heading “The importance of the ‘Stay in Work’ culture and the ‘Keep Active’ message”.

The research team were aware of the broad range of situations in which the model may be sought to be applied:

- Different sizes of organisation, from very small to very large;
- Organisations with no (or limited) knowledge of occupational health issues to those that had an on-site occupational health team;
- For individuals who had a short term MSD which had only a minor impact on their work to individuals with a chronic condition which might result with a significant period of time off work.

It was therefore necessary for the document to be written in such a way that it could be used by those who had limited knowledge and experience of these issues. It also needed to be sufficiently non-prescriptive to allow organisations to adopt the principles in the ways which were going to best meet their requirements. It also needed to be applicable for non-complex cases and more complex cases, which will require different levels of involvement by the case manager. General recommendations were therefore needed.

A second meeting of the research team was held on 23rd November 2005 to finalise details of the model. The eventual model essentially represents a synthesis of the scientific evidence, shaped based on anecdotal reports of stakeholder experiences. It intends to provide a range of components and concepts that might be implemented in a variety of scenarios; it contains information that is likely to be of value to a wide variety of players, including employers, professionals in the rehabilitation and case management industry as well as other sectors such as healthcare, insurance and law. The final

draft was circulated for comment in December 2005; the outcome of the consultation is discussed in Section 8.

8. CONSULTATION ON MODEL

8.1 OVERVIEW

In order to establish whether the proposed model was applicable, and likely to be useable by those potentially involved in the management of individuals with MSDs, a consultation exercise was undertaken. The aim was to determine the model's usability and usefulness, and any suggested changes to improve clarity.

The views of potential users of the model were sought in two ways:

1. through individual comments on the model, including optional completion of a questionnaire;
2. through discussion at three focus group meetings.

8.2 WRITTEN CONSULTATION

8.2.1 Sample

The model was distributed electronically in December 2005 to those who had taken part in the initial focus groups, or completed the on-line questionnaire in Phase 1, or who had expressed interest in another way. It was also circulated to ACPOHE, the Occupational Safety and Health Ergonomics Network, POOSH Scotland (Professional Organisations in Occupational Health), Healthy Working Lives, Chartered Institute of Personnel and Development; Confederation of British Industry; Federation of Small Businesses, and Trade Union Congress. An invitation to comment was also issued to delegates at the Royal College of Nursing Occupational Health Nursing Annual Conference. A short questionnaire was sent with the model, asking for views in relation to the scope, structure, ease of understanding, appropriateness and usefulness. Over 95 people received the model in this way, and it is known that some forwarded it to their colleagues.

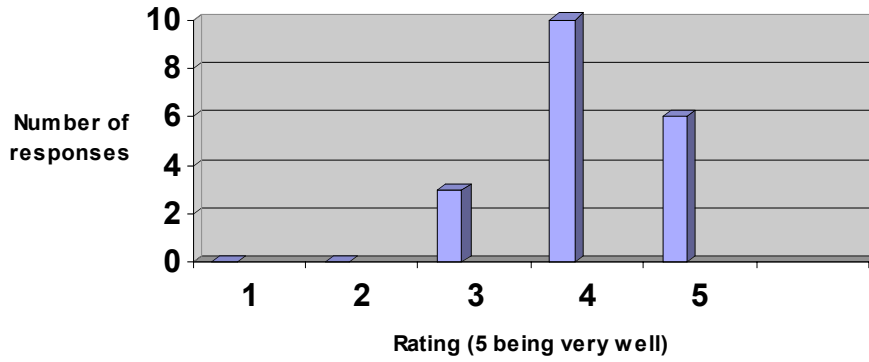
Altogether 34 people responded to the consultation exercise, with 19 doing so via the questionnaire, and others providing written comments. Professions represented by those who responded were: Physiotherapist (8); Ergonomist (5); Occupational therapist (2); Occupational physician / GPSI (GP with special interest) (2); and one each of the following: Human Resources; Occupational health nurse; Health and safety advisor / Registered Safety Practitioner; Back Care Advisor; Occupational Health Clinician; Medical Director; Psychologist; Scientist; former lecturer in health studies; Moving and handling Specialist Advisor; Researcher; Risk manager; Chamber of Commerce officer. Four respondents did not specify their profession.

8.2.2 Rating of usability of the model

Respondents were asked to rate their views in answer to the following questions. Altogether 19 people completed this on the questionnaires.

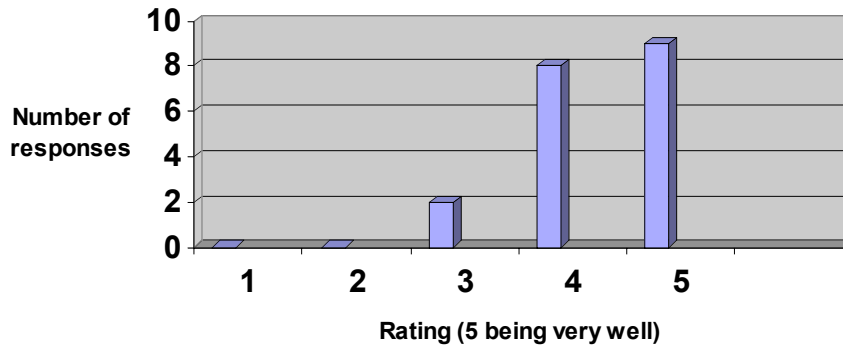
8.2.2.1 Scope of the model

How well do you think this model covers all relevant issues?



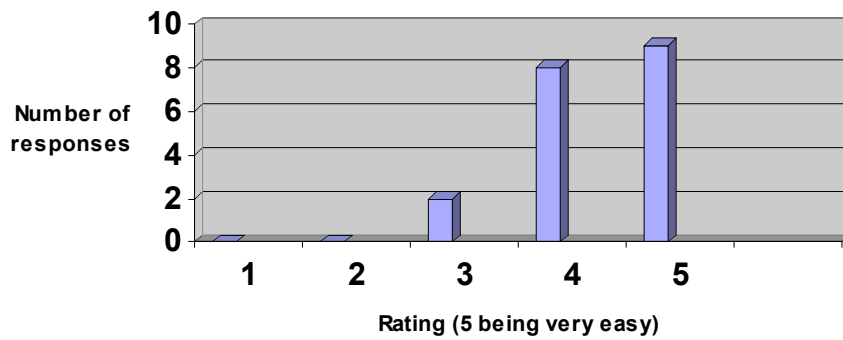
8.2.2.2 Structure of the model

How well structured do you think this model is?



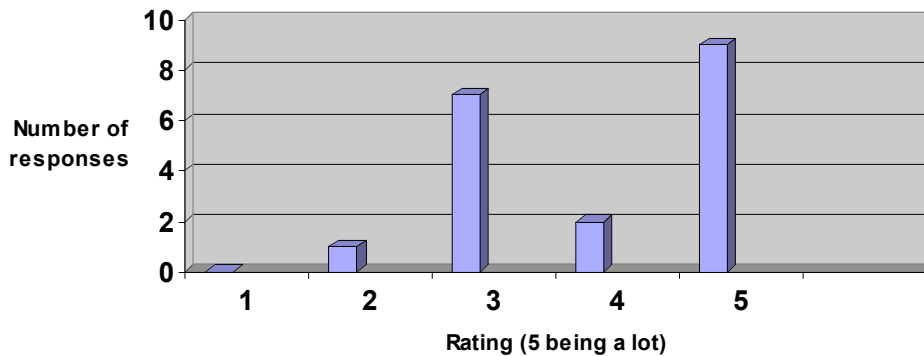
8.2.2.3 Ease of understanding

How easy did you find it to understand this model?



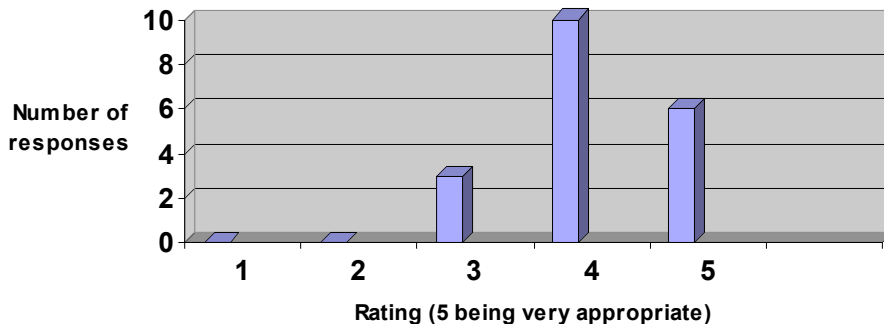
8.2.2.4 Usefulness

To what extent do you think this document will increase employers' knowledge and understanding of how to manage MSDs?



8.2.2.5 Appropriateness

How appropriate do you think this model is for a range of different audiences?



8.2.3 Comments on the model

The comments were reviewed by the research team, and where appropriate were incorporated into the revised model, which is presented in Appendix 3.

Appendix B and C were added in the document, to help organisations practically implement the guidance.

Several comments related to specific issues which individuals were interested in (e.g. the role of their own profession in case management). These comments had to be balanced against the overall emphasis of the document, and the desire to keep it simple and generic.

General comments relating to the document and its presentation are outlined below.

8.2.3.1 Length and style

Several reported that the structure and layout were clear, and the charts and flow diagrams helpful. However, there was a general feeling that the document was long, repetitive, and needed to be written in a more accessible / punchy style, particularly for SMEs and those who may not be familiar with some of the terminology or concepts.

8.2.3.2 Presentation

There was a suggestion that it would be helpful to have alternative ways of presenting this information e.g. through a visual (e.g. Powerpoint) presentation, which organisations could use to

show to senior management to persuade them of the value of these programmes. It was thought that if this were prepared by HSE it would have more weight with Unions and managers than an internally produced document. Another asked for further support for communicating the model such as attendance/ presentation at a company Health and Safety Conference.

Another suggested a best practice checklist would help companies know where to start, and help them to navigate through the document.

There were also requests for further guidance for those undertaking the case management function, particularly when this was to be fulfilled by someone not experienced in this area.

8.2.3.3 Definition and scope of Case Management

There was some concern and confusion about the role of the case manager. The definition of the role of the case manager was expanded based on requests for further clarification of this role. This was to encompass the full range of those who may adopt case management principles – from line managers or other non-healthcare managers who could manage simple cases; through to those who may undertake case management full time and have a healthcare background.

Some respondents expressed concerns over how an in-house manager would be chosen to undertake case management. Further clarification of the skills they required were included. It was recognised that they may require training, and some respondents questioned where this would be available.

As a result, more guidance was included in the model on how to select a case manager if an external service was required.

There were requests for further emphasis on how the case management function should work e.g. proactive case management, monitoring of treatment and challenging it when clinicians exceed recommended guidelines etc.

Some respondents expressed concern over the ability of someone undertaking a case management function who did not have a medical background, specifically relating to MSDs, to understand how MSDs affect work ability, and then to make judgements on screening/ acceptance of referrals, appropriate treatment being provided in a timely and effective manner, continuation of treatment, appropriate work adjustments etc. If a non-medical person were to case manage, one respondent thought that there should be strict guidelines for both the screening and return to work role, with appropriate points for referral to an occupational health specialist. It was clarified in the model that for more complex cases further assistance should be sought.

There were also concerns about medical confidentiality regarding the individual's condition and treatment options if these were shared with a non-medical case manager. A comment concerning medical confidentiality was added in Appendix C.

8.2.3.4 Usability by SMEs

Respondents thought the model was well written for larger and multidisciplinary audiences, but there was concern that it was too long for SMEs to read and understand, particularly as they may not be familiar with some of the concepts and terms. A shortened, simplified version for SMEs was thought to be beneficial, using checklists or signposting to facilitate reading it. There was also a suggestion that a different model may be required for SMEs.

Some respondents expressed concern over where SMEs could use the model due to financial and personnel constraints. This relates more to implementation rather than content and structure.

8.2.3.5 General points

There was a recognition that what was provided by healthcare providers varied depending on their experience. For example, an assessment may not include screening for yellow and blue flags, and that potential service users should be aware of what they would receive. It is also important to recognize that occupational physicians may give different advice than GPs.

One respondent suggested that the model primarily focuses on healthcare providers in the private sector. Although there was a recognition that NHS waiting lists can be long in some areas, NHS staff are able to prioritise cases, and that waiting lists shouldn't be seen as a barrier to treatment. Prioritising cases in the NHS was thought to remove an obstacle in providing treatment (i.e. the cost of the treatment).

One respondent thought that the document did not adequately address the need for clear diagnosis and assessment of cases, and identification of appropriate treatment based on the diagnosis. Another thought that unnecessary requests for diagnosis often delayed return to work, which is counter to the general recommendations of the model. This was the view of the research team.

One respondent commented on the need to consistently strike an appropriate balance in terms of the causes of MSDs not only being physical but also psychosocial. They thought some emphasis was needed on how to manage cases of MSD with co-morbid factors (i.e. psychological problems).

One respondent questioned the emphasis perceived to be given in the document to the physical nature of tasks and ergonomics, rather than encouraging employers to be aware of the psychosocial aspects of work. Management of MSDs will include creating a culture of allowing staff to raise issues at work, not only relating to physical matters. Raising awareness about the positive factors that work gives employees (e.g. a sense of self, a social network etc) could be helpful, as well as the difficulties those with MSDs may feel about staying in or returning to work (e.g. financial concerns, worries about the future, going through the actual process of addressing MSDs, feeling that managers or colleagues question the validity of their concerns etc).

Several respondents thought that the model could cover rehabilitation/RTW principles generally, rather than only focusing on MSDs.

8.2.3.6 Further guidance

Several respondents requested further guidance on how to implement the model. This included:

- Guidance on how to change culture so that the right culture for managing MSD is created.
- A recommendation for the structure of the occupational rehabilitation programme.
- A 'how to do' section, with step by step guidance on how to change working practices and implement a case management / rehabilitation programme.
- More specific tools and techniques provided to help case managers (e.g. questions to ask of all those involved; further information on the use of functional capability assessment, Cognitive Behavioural Therapy or where to access it).

There were requests for an appendix with some references and research supporting the model contents, and examples or cases to demonstrate how to implement this approach. This was seen to be useful to assist case managers and occupational health professionals in their role, and to persuade managers of the benefits of these programmes. This information is provided in this research report, but was not included in the model.

8.2.3.7 Specific comments on implementation of the guidance

It was highlighted by one respondent that the current number of healthcare professionals (e.g. physiotherapists) in private practice who have occupational health knowledge and skills is currently very limited. It was thought that for this reason, larger organisations may be better with in-house provision where it is easier to facilitate workplace advice/RTW plans and work based rehabilitation.

It was recognised that there was a need for organisations to collect data in relation to MSD related absence and the potential costs of this, so that the effectiveness of programmes can be evaluated.

8.3 FOCUS GROUP CONSULTATION

8.3.1 Methods

Three open public sessions were conducted in Phase Two, one in Edinburgh and two in London. A total of 26 delegates attended the sessions. Some of these had attended the focus groups in Phase One, others had not. The attendees were from a range of backgrounds, although almost all were health care providers from the following professions Physiotherapy, Occupational Health, Occupational Therapy and Occupational Medicine.

8.3.2 Feedback on the proposed model

The comments from the consultation were incorporated into the document. They broadly were in line with the comments received from the written consultation.

8.3.2.1 Content

The content was generally thought to be good, and there were positive comments about the flowchart and table.

The following areas were suggested for inclusion / further clarification

- State that this model, using case management approach, is equally applicable to other rehabilitation, e.g. mental health issues. Some thought that it would be better to have one model for all work related health problems (e.g. mental health as well as MSDs etc).
- Need to provide evidence for the dispelling of myths to give more credibility.
- Demystification of yellow flags, it was suggested that there could be much more emphasis on this to ensure that employers are aware of the role of psychosocial factors.
- Include ‘common examples’ of MSDs as not everyone will understand what this means. Define MSDs more fully – ULDs, RSI, CTS etc including soft tissue or joint injury, may be caused by sporting activities etc.
- Emphasise that this guidance is for EVERY employer
- Greater emphasis required on ‘staying active’

- Much stronger business case required. Cost benefit argument more ‘hard hitting’ with a case example early on to convince employers that it is cost effective. Also to include the impact on company image which is not included at present
- Not clear who the Case Manager is or should be, skills of Case Manager depend on the complexity of the case. For example, Case Manager could be an effective line manager, until ‘triggers’ indicate more complex case and requirement for ‘health’ professional to take over management of case. Model would need to state what these triggers are (for SMEs too).
- Healthcare provider is a broad term; may need to explain who this is or could be (though discussion recognised that this was difficult).
- Need to stress the importance of self management for employees
- Concern over medical confidentiality if the person undertaking case management does not have a medical background. The GP will need to know who they are writing to, so that they write in appropriate detail, and that the person receiving it is competent to interpret it.
- Another myth: if you wait long enough you will get 100% better
- Provide information on MSD risk factors (physical, psychosocial and individual)
- Use flow diagrams and few words
- Provide information for employers and employees, as was done with the Working Backs Scotland campaign.

Areas not already covered which should be included:

- Be clearer that there may be cases when rehabilitation is not enough and what to do if this is the case.
- Discuss the argument for paying employees when returning to work gradually and how not doing so can undermine the programme with detrimental outcomes for the organisation and employee.
- Discuss the argument for including non-work injuries in the programme.
- Include more on how to facilitate discussions with healthcare providers; particularly for non-health care professionals. It is ok to say liaise with GP but for someone who has never done this it might be a bit daunting. Provide pointers on what to ask / expect. Example questions to ask GPs.
- Provide better links to allow employers to be able to identify or access healthcare providers and case managers. What skills should they have, where can they be found? Perhaps list of questions to ask to ensure that a suitable provider is identified. Perhaps a list of credible website addresses, e.g. of professional bodies.
- Make links to avenues for support, particularly for SMEs. For example ‘Access to Work’ and other government initiatives that might be relevant Treatment available through insurer (advice, particularly to small firms to raise awareness and understanding of potential entitlements through their policy).

Example and scenarios

- Toolbox checklists, should the model include checklists, forms, template letters etc so that organisations do not have to reinvent the wheel
- Case studies and scenarios to clarify how the model works in practice and also to strengthen business case.
- Case studies would be useful for small businesses.

Language and terminology

- Some terms were thought to be too academic; the language needs to be simplified for employers, so it is easily accessible and understood.
- The communications diagram (Figure 1) was considered by some to be not particularly helpful and quite confusing. The Case Manager clearly has a liaising role with all stakeholders and most of what is said is repeated elsewhere in the document. However, others liked the diagram.
- The term ‘temporary duties’ was thought to be misleading and open to interpretation, should perhaps suggest ‘review after two weeks’
- It was thought that changing the culture is a bit of a ‘mammoth task’. Perhaps ‘Create the right attitude’ is a better term to use.
- Consider the terms ‘foundation’ and ‘enhanced’ rather than ‘minimum’ and ‘additional’ for the actions.
- Some thought that healthcare providers are the hardest to target with this message.

Appropriateness:

- More appropriate for larger organisations, although it was thought that the principles of case management apply to all (however, it was thought that the model was too complex for SMEs).
- Consider separate document for SMEs and large organisations.

8.3.2.2 Obstacles and challenges to implementation

- ‘Case Manager’ is a new concept for most employers and understanding their scope and responsibilities may be a challenge. They may need more guidance on it.
- Some organisations will have difficulty in deciding who will undertake the case management role. Occupational Health personnel do not always have good knowledge of task details, so needing to liaise closely with line managers. It is important that the guidance emphasises that a team approach is required. It would be worth saying that if the line manager undertakes a case management function they should refer on when it gets beyond their expertise. The line manager will be able to undertake simple measures e.g. simple workplace changes and reduction in work hours.
- Structure of organisations may be an obstacle to case management approach.
- Healthcare providers lack of awareness of the guidance and best practice in this area.
- Culture or nature of organisation may be a challenge. For example in a productivity driven organisation gradual return to work may not be welcomed by employer or by the employees (colleagues) of the person with the MSD.
- Some organisations will be concerned about the legal implications of having inappropriately skilled Case Manager; the employer and employees may not be willing to take this function on.
- The investment required may be an obstacle to the adoption of these principles. Therefore the business case needs to be presented strongly and communicated clearly.
- Pending legal action can lead to not taking action to return the individual with the MSD to work.
- Not knowing where to access good quality services to implement programme
- Practical implementation and inability of employer to facilitate discussions with the healthcare providers.
- Need to measure and cost absence.

- Concern over the legal implications of someone undertaking case management who does not have competence in this (how will competence be defined?). It may be appropriate to identify points at which people need further help (what are the triggers for specialist help?).

8.3.2.3 Additional feedback regarding the 'Case Manager' role

There were a number of questions about whether the person with case management responsibility needs a medical background. It was recognised that their role is to liaise between the medical and task / workplace issues. Some delegates thought that it needs to be done by someone with an Occupational Health background as this training facilitates liaison with those with a medical background and with the workplace. There was a recognition that skills required will depend on the complexity of the case.

It was thought that the case manager role is not very clear but that this could be clarified by providing example scenarios of an internal and external case manager. It would also be useful to provide examples or scenarios showing how the model could work for different sizes of organisation.

It was thought that it may be worth defining the skills required by someone undertaking case management and also including other (personal) skills that a case manager would need e.g. a good listener. This will be particularly helpful for those organisations identifying an 'internal' case manager.

The phrase 'case manager' is considered to be a bit 'technical' and it was thought that for many organisations a 'softer' term may be better. This is particularly the case where an internal employee is being asked to take on the role, as the term may suggest to them that they are 'not qualified'. It was thought that a 'Co-ordinator' or 'Facilitator' may be a better title.

8.3.2.4 Methods of dissemination

Potential routes for disseminating guidance on MSD case management and rehabilitation were identified by delegates.

It was thought that notices / adverts in the press would be useful, particularly if this was not limited to the business press. Radio advertising was also thought to be an effective method.

Delegates thought that any guidance would need Trade Union backing, and that this should be clear in the dissemination. Other organisations that could help promote such a model were identified as business organisations and professional bodies e.g. Confederation of British Industry and Federation of Small Businesses, TUC, Chartered Institute of Personnel and Development, Association of British Insurers, Occupational Health professionals bodies, Chamber of Commerce. It was also thought that circulation through Companies House and Inland Revenue could be useful.

Clear branding was thought to be needed and it was thought that the documentation should be free.

It was also thought that there needed to be a message to the NHS provided therapy to prioritise RTW cases, so that waiting for treatment was not an obstacle to RTW.

Other suggestions for disseminating the message were to provide a summary (2 pages) with links to the full model or further information on a website. Information provided via GP practices (e.g. a leaflet for the employee and a supporting one for the employer, which could be given via the employee).

8.4 REVISIONS MADE AND SUMMARY

Based on the comments received, modifications were made to the model. These included points of clarification, and additional material to expand on concepts. Significant changes to structure and content were not required.

In general, many positive comments were received concerning the model. There was a concern that SMEs may find the document too long. It is likely that a shorter, simplified version is required for their use.

No respondents thought that there should be different models for different types of MSDs, and it is thought that this would overly complicate the message.

9. USE OF THE MODEL

The model presented in this report (Appendix 3) is based on a synthesis of the available scientific evidence in the literature with anecdotal reports and experience as to how it can be applied in the UK. It was designed to incorporate the range of key components and concepts that should be included in any implementation, as well as more complex arrangements for different scenarios.

Thus, the current model offers a template suitable for all potential industries and organisations. It is not, in itself, intended as a tool. Its length reflects a desire to be comprehensive in the coverage of the information likely to be of value to various audiences (including employers, healthcare professions, insurers, lawyers and policy developers), and to give detailed explanations of the underlying reasoning. For most applications, especially SMEs, the model will not be suitable for direct implementation in its current format, rather it should be used to develop specific tools to suit the environment where case management is to be conducted.

Any formal guidance derived from this draft model needs to take account of the practicability of implementation across the range of occupational, healthcare and insurance environments in which it might be used.

10. RECOMMENDATIONS

1. The principles contained within the model should be synthesised into tools and guidance that can be applied by different sizes of organisation. In particular, SMEs would benefit from a short, easy to use guide. Detailed guidance on what actions to take at what points in the case management process could usefully be developed for those who have no experience of undertaking case management. This could be done as a paper based tool, or a software tool.
2. Simple guidance should be produced for all those involved in the case management / rehabilitation of those with MSDs (individual, colleague, line manager, occupational health professional, health care provider etc), so that a consistent message can be issued. This should include guidance on principles of relating to work rehabilitation and transitional work arrangements.
3. Simple guidance on appropriate self-help for those with upper limb disorders should be compiled (to complement the Back Book and the Neck Book). This would be useful for case managers and employers to provide to individuals with MSDs.
4. There needs to be an increased awareness among all healthcare providers concerning the messages contained within this guidance, specifically, concerning the self-help approach and the importance of vocational rehabilitation.
5. Collaborative arrangements to make early treatment more accessible should be encouraged (i.e. those with treatment services allowing smaller organisations to access these). In addition, better advice and links to local services would help SMEs.
6. All State provided allowances and benefits should make provision for transitional work arrangements (so those returning on phased returns are not financially penalised and do not have to use up annual leave allowance thus risking further MSDs from working long periods without leave entitlement).
7. Consideration should be given to allowing tax breaks for employers who provide case management and rehabilitation programmes for their employees
8. Organisations should be encouraged to collect data which would allow them to make a judgement on the costs and benefits of managing MSD related problems. This would include collecting data on the cost of their MSD related sickness absence, and the cost of work restrictions for those with MSDs. They should also be encouraged to quantify the cost of managing cases (in terms of management time, or the service provided), and of providing therapy or treatment, so that the costs and benefits of these programmes can more accurately be evaluated.

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APPENDIX 1

LITERATURE REVIEW TABLES

Table A1. Definitions of ‘Case Management’

Authors	Key features
Case Management Society UK (CMSUK) ¹⁰	<p>Defines case management as “a collaborative process which assesses, plans, implements, co-ordinates, monitors and evaluates the options and services required to meet an individuals health, care, educational and employment needs, using communication and available resources to promote quality cost effective outcomes”</p> <p>A brief description of the overall philosophy of case management is also provided: “Taken collectively, the services offered by a professional Case Manager should enhance the quality of life for clients while potentially reducing the total overall cost of disability. Thus, effective case management will directly and positively affect the social, ethical and financial health of the country and its population. The role of a Case Manager is to collaborate with clients by assessing, facilitating, planning and advocating for health and social needs on an individual basis. Successful outcomes cannot be achieved without specialised skills and knowledge, such as those exhibited by a Case Manager, throughout the case management process”.</p>
Case Management Society of America (CMSA) ¹¹	<p>Case management is defined as “a collaborative process of assessment, planning, facilitation and advocacy for options and services to meet an individual’s health needs through communication and available resources to promote quality cost-effective outcomes”.</p> <p>Notes to define the philosophy underpinning case management are also provided: “Case management is not a profession in itself, but an area of practice within one’s profession. Its underlying premise is that when an individual reaches the optimum level of wellness and functional capability, everyone benefits: the individuals being served, their support systems, the health care delivery systems and the various reimbursement sources. Case management serves as a means for achieving client wellness and autonomy through advocacy, communication, education, identification of service resources and service facilitation. The case manager helps identify appropriate providers and facilities throughout the continuum of services, while ensuring that available resources are being used in a timely and cost-effective manner in order to obtain optimum value for both the client and the reimbursement source. Case management services are best offered in a climate that allows direct communication between the case manager, the client, and appropriate service personnel, in order to optimise the outcome for all concerned. Certification determines that the case manager possesses the education, skills and experience required to render appropriate services based on sound principles of practice”.</p>
Case Management Society of Australia (CMSA) ¹²	<p>Case management is defined in a draft definition that states: “First and foremost Case Management is a service delivery approach now widely adopted across diverse settings in the human services and health sectors. The best practices in Case Management require organisational arrangements to support service delivery, staff who have been trained for the approach and its application to the particular practice setting and strategies to ensure that the organization can be responsive to evidence from practice and advocate for systemic and policy change to support service delivery. The principles that underpin Case Management are individualised service delivery based on comprehensive assessment that is used to develop a case or service plan. The plan is developed in collaboration with the client and reflects their choices and preferences for the service arrangements being developed. The goal is to empower the client and ensure that they are involved in all aspects of the planning and service arrangement in a dynamic way. The Case Manager coordinates the process, consulting informal carers and key service providers to ensure that the plan is developed appropriately, clearly contracted and monitored for effective and financially accountable service provision based on specified and desired outcomes. The case manager and the organization are expected to maintain quality in service provision for individual clients and the wider target population. In clinical settings the case manager may also provide specialist services to address particular needs of the client. The Case Management approach assumes that clients with complex and multiple needs will access services from a range of service providers and the goal is to achieve seamless service delivery. This assumption highlights that the concept of Case Management is based in service provision arrangements that require different responses from within organisations and across organisational boundaries. Case management is described as a boundary spanning strategy to ensure service provision is client rather than organisationally driven. Case Managers provide the coordinating and specialist activities that flow from the particular setting, program and client population. However it is usual to identify the following process as core to Case Management: screening, assessment/risk management, care planning, implementing service arrangement, monitoring/evaluation and advocacy”.</p>

Authors	Key features
	They note that case management has been adapted to a wide range of settings including community care for the aged, and people with disability and mental health issues; acute health settings; injury management and insurance related areas; correctional services; court systems; in the management of chronic health conditions; child and youth welfare; at risk populations in schools; managed care and employment programs.
Vermont Department of Labor & Industry: Workers' Compensation Division ¹⁶⁵	<p>Definition Workers' Compensation Rule 2.1295 states, "Medical Case Management refers to the planning and coordination of health care services appropriate to achieve the goal of medical rehabilitation. Medical case management may include, but is not limited to, care assessment, including personal interview with the injured employee, and assistance in developing, implementing and coordinating a medical care plan with health care providers, as well as the employee and his/her family and evaluation of treatment results. Medical case management is not the provision of medical care. The goal of medical case management should be to avail the disabled individual of all available treatment options to ensure that the client can make an informed choice."</p> <p>Role of the Medical Case Manager. The MCM's role may be better understood by recognizing how it arose and how medical management fits into the workers' compensation system. An injured worker is entitled to medical care and treatment that is reasonable, necessary and related to their work injury. The employer (or carrier) is required to provide the worker these medical benefits. However, the injured worker has a right to choose their physician and health care providers. The employer/carrier must bear the cost of medical care the worker selects, but the carrier may take action to ensure the efficient delivery and proper utilization of such medical benefits. The MCM is hired by the employer/carrier to medically follow or medically "manage" the injured worker.</p>

Table A2. Definitions of Case Management found using the search string "define: case management" in Google on 17 Dec 2004

Online Dictionary	Definition
www.etdbw.com/fh/fortis/health/glossary.jsp	A process whereby a covered person with specific health care needs is identified and a plan which efficiently utilizes health care resources is designed and implemented to achieve the optimum patient outcome in the most cost-effective manner.
cms.hhs.gov/glossary/default.asp	A process used by a doctor, nurse, or other health professional to manage your health care. Case managers make sure that you get needed services, and track your use of facilities and resources.
www.aetna.com/help/glossary.html	A process of identifying individuals at high risk for problems associated with complex health care needs and assessing opportunities to coordinate care to optimize the outcome.
www.medplanaccess.com/glossary.htm	A process whereby an insured person with specific health care needs is identified and a plan which efficiently utilizes health care resources is designed and implemented to achieve the optimum patient outcome in the most cost-effective manner
www.disability-insurance.tv/glossary.html	Assessment of a person's long term care needs and followed by appropriate recommendations for care, monitoring and follow-up as applies to extent and quality of services to be provided.
isg.unicare.com/maj_bu/s/Misc/Glossary_of_Terms.htm	A utilization management program that assists the patient in determining the most appropriate and cost effective treatment plan. It is used for patients who have prolonged, expensive or chronic conditions, helps determine the treatment location (hospital, other institution or home) and authorizes payment for such care if it is not covered under the patient's benefit agreement. The purpose of case management is to provide optimum patient care in the most cost-effective manner.
www.dmb-ergonomics.com/gloss.htm	The process by which all health-related matters of a case are managed by a physician or nurse or designated health professional. Physician case managers coordinate designated components of health care, such as appropriate referral to consultants, specialists, hospitals, ancillary providers and services. Case management is intended to ensure continuity of services and accessibility to overcome rigidity, fragmented services, and the mis-utilization of facilities and resources. It also attempts to match the appropriate intensity of services with the patient's needs over time.
www.healthinsurance.org/insterms.html	Case management is a system embraced by employers and insurance companies to ensure that individuals receive appropriate, reasonable health care services.
www.hhsc.state.tx.us/Medicaid/Med_info/glossa	A process whereby covered persons with specific health care needs are identified and a plan which efficiently utilizes health care resources is formulated and implemented to achieve the

Online Dictionary	Definition
ry.html	optimum outcome in the most cost- effective manner.
www.bcbstx.com/glossary/	A process of identifying plan members with special health care needs, developing a health-care strategy that meets those needs and coordinating and monitoring the care, with the ultimate goal of achieving the optimum health care outcome in an efficient and cost-effective manner. Also known as large case management (LCM).
www.ctpatientsrights.org/glossary.html	A process whereby an MCO sets a plan of treatment for an enrollee with specific health needs and then monitors the progress to achieve optimum patient outcome in a cost effective manner.
www.tr.wou.edu/tbi/c.htm	Facilitating the access of a patient to appropriate medical, rehabilitation and support programs, and coordination of the delivery of services. This role may involve liaison with various professionals and agencies, advocacy on behalf of the patient, and arranging for purchase of services where no appropriate programs are available.
www.usaaedfoundation.org/formsAndLists/ins_health_glossary.htm	A process of identifying covered persons with specific health care needs and developing a plan to efficiently use health care services and education to meet those needs, with the objective of achieving optimum patient outcome in the most cost-effective manner.
www.careproject.net/glossary.htm	Coordination of a client/patient's health care services to ensure appropriate, quality care, as their health care and social needs change.
www.gioa.org/osubs/glossary.html	The practice of having a single expert, often a social worker or a nurse, work with the client, family and other professionals involved with the case to plan and coordinate all of the health and social services needed by the client.
www.bcbst.com/about/glossary.shtm	An added level of benefit service for critical injuries or complex illness. Case management helps coordinate your care -- before, during and after treatment or surgery – to make sure special needs are met, and appropriate services and care sites are used.
www.med.umich.edu/mmc/glossary.htm	A system used by managed healthcare plans to monitor a patient's progress during a hospital stay; the goal is to achieve the best possible out-come for the patient in the most cost-effective manner by eliminating the need for readmission, hastening recovering, and substituting low-cost aftercare services for expensive hospital care
www.tnpca.org/data_glossary.html	A method of managing healthcare provision to members with chronic, ongoing or complex medical conditions. The goal is to coordinate the care so as to both improve continuity and quality of care as well as manage costs appropriately.
www.matrixcos.com/as/resources/glossary.html	A method of managing the provision of health care to members with catastrophic or high cost medical conditions. The goal is to coordinate the care so as to both improve continuity and quality of care as well as lower costs.
www.iid.state.ia.us/division/consumer/terms/default.asp	A system of coordinating medical services to treat a patient, improve care, and reduce cost. A case manager coordinates health care delivery for patients.
www.insweb.com/learningcenter/glossary/health-c.htm	The assessment of a person's long term care needs and the appropriate recommendations for care, monitoring and follow-up as to the extent and quality of services to be provided. (H)
www.bcbsks.com/employers/glossary.htm	Coordination of services to help meet a patient's health care needs, usually when the patient has a condition which requires multiple services from multiple providers. This term is also used to refer to coordination of care during and after a hospital stay.
www.nciom.org/hmoconguide/GLOSS31E.html	A coordinated set of activities to manage the health care services provided to patients with serious, complicated or prolonged health conditions. NCGS 58-50-61(a)(17)(b).
www.gobroomecounty.com/departments/CASA_Glossary.php	Coordination of a client/patient's health care services to ensure appropriate, quality care as their health care and social needs change.
www.wellmark.com/health_improvement/health_glossary/a_f.htm	Identifying an individual patient's needs and problems, and devising a method to meet those appropriately and cost-effectively. Consultation with medical professionals helps the patient take advantage of care appropriate for the patient's condition rather than a fixed set of treatments and procedures.

Table A3. Studies included in the review of cost-benefits of active case management

Study	Overview	Key Findings	Level of Evidence
Alday & Fearon (1997) ¹⁰³	Protocol implemented for managing low back pain. Integrated roles of doctors, physiotherapists with case managers. Prospective case series.	Referrals occurred earlier. Overall RTW rate of 82%. Case closure completed for 98%. Treatment duration reduced 41%. Number of visits for treatment reduced by 32%. Costs reduced by 32%. The most important effect on implementation of the protocol was inclusion of case management. Case managers ensured timely case closure, and played role in preventing unresolved problem cases.	4
Arnetz (2003) ¹⁴⁹	Investigated proactive role for funder (insurer) case managers in managing MSD's, including ergonomic workplace intervention. Prospective randomised controlled trial.	Average number of sick leave days over 1-year period was significantly less for the intervention group than the control group. Provision of rehabilitation occurred more often and earlier. RTW was 2.5 times more likely for intervention group. Direct cost savings were measured, and found cost-benefit ratio of 6.8. Concluded that proactive case management focusing on early RTW, improved level of function, and ability (vs disability). Also, indication that involving ergonomist in workplace adaptation decisions may be helpful.	1b
Beaumont (2003) ⁹⁵	Qualitative (Delphi) study using telephone interview with 25 subjects to investigate the role that communication between GP's and occupational health practitioners might play as a barrier to RTW process.	Found high level of consensus that communication between GP's and occupational health practitioners is important to RTW. Findings interpreted as indicating that improved communication, based on education initiatives, is required. Also suggested that ideal is for GP's who manage MSD case to work in occupational health and disability assessment.	5
Bernacki et al (2000) ¹⁰⁴	Implemented early RTW programme for hospital staff, as part of comprehensive initiative to manage workers compensation costs. Observed outcomes for number of lost day cases, lost workdays, and restricted duty days over 10-year period.	Average number of lost workdays per 100 employees decreased from 26.3 to 12. Rate of lost workdays decreased by 55%.	4
Bronner et al (2003) ¹⁰¹	Five-year cohort study of MSD's in 42 professional dancers, with retrospective data from 2 years and prospective data from 3 years following implementation of comprehensive case management system.	High rates of MSDs in professional dancers, especially overuse problems in lower limbs, lead to workers compensation claims. Comprehensive case management system reduced these from 81% per annum to 17%. Concluded that effective early management of overuse problems prevented them becoming "serious injuries", and therefore reduced amount of lost time off work. Also found that the early triage process prevented medicalisation of problems, and therefore reduced amount of healthcare used. Satisfaction, and therefore support for implementation, was obtained from both the dancers and managers.	4
Evans &	Randomised clinical trial using 180 hospitalised subjects. Investigated role of	No difference between the two groups on any measure. Authors concluded	1b

Study	Overview	Key Findings	Level of Evidence †
Hendricks (2001) ¹⁵⁰	post-discharge rehabilitation delivered as part of a “complex case management service”, compared to usual care which provided only primary care medical services. Only a small proportion of subjects had MSD’s.	the study population was too heterogeneous to detect any effect.	
Feldstein et al (1998) ¹⁰⁵	Prospective case series using historical control, to compare effect of introducing comprehensive package of provider training, screening cases, and case management. Case managers gave providers feedback on RTW rates. LBP.	Average time off work reduced from 17.8 to 15 days. Wage replacement costs reduced significantly compared to two other insurers over same 5-year period.	4
Feuerstein et al (2000) ¹⁰⁶	Prospective case series, with historical controls, using 53 symptomatic sign-language interpreters with work-related upper extremity disorders. Delivered comprehensive rehabilitation programme and case management.	Over subsequent 3 years observed a 69% reduction in number of claims for the same problem. Indemnity costs were reduced by 64%, and these savings were maintained for the next 2 years. Healthcare costs also reduced.	4
Gatter & Klein (1996) ¹⁰⁰	Implemented integrated care system for musculoskeletal problems within managed care framework. Used clinical practice guides, specialist phone consultations for GP’s seeking advice on cases. Observed healthcare costs.	Found significant reduction in use of healthcare, and costs. Time off work not measured.	4
Green-McKenzie et al (1998) ¹⁰⁷	Prospective cohort study for 3 years, with 3-years historical control. Implemented a comprehensive “safety and managed care” initiative to reduce workers compensation costs, largely musculoskeletal. Used on-site case managers, preferred provider network, and safety advisors.	Observed 50% reduction in total expenditure. Healthcare expenditure also decreased by 50%.	4
Greenwood et al (1990) ¹¹²	Implemented early intervention approach to low back pain among coal miners	Found medical costs increased with case management intervention. Disability costs and time lost from work did not decrease.	1b
Haig et al (2001) ⁹⁶	Investigated case manager perceptions of back pain rehabilitation programmes, on premise that they influence referrals and decision-making.	Case managers perceived the best quality programmes to include timeliness, communication, functional orientation, concrete programme goals and time frames, and rapid communication of patient non-compliance.	5
Kalina (1999) ¹⁰⁸	Implemented a corporate disability management programme that integrated “clinical and business goals”.	Improved RTW rates, with economic value to the business.	4
Lantsberger et al (2004) ⁹⁷	Comprehensive review of Washington State workers compensation system.	Identified importance of the “occupational medicine model” and its focus on RTW, combined with adequate communication with employers.	5
Lincoln et al (2002) ¹¹¹	Case-control study. Investigated impact of training case managers with 2-day course on number of recommendations for workplace accommodations in claimants with upper extremity disorders. After training process 101 claimants were randomly assigned to trained and untrained case managers	Claimants referred to trained case managers were 1.5 times more likely to receive recommendations for workplace accommodations, and 1.4 times more likely to have these implemented.	3b
Loisel et al (2002) ¹¹³	A randomised trial design with four arms was used: standard care, occupational arm, clinical arm, and “Sherbrooke model” arm (comprehensive management that combined occupational and clinical interventions). Aim was	At 6-year follow-up it was found that the fully integrated disability prevention approach to work-related low back pain produced lower costs and less time off work.	1b

Study	Overview	Key Findings	Level of Evidence †
Matheson (1995) ¹⁰⁹	to prevent disability due to back pain. Outlines implementation of managed care model that emphasises early TW for back pain.	Healthcare costs in pilot lower than state and national averages.	4
Matheson (1997) ¹¹⁰	Case series investigating use of multidisciplinary team to case manage 281 subjects with work-related low back pain.	A structured early return to work immediately after back injury is viable, and results in a more rapid and complete RTW rate.	4
McLellan et al (2001) ⁷³	Pilot study investigating effect of training line-managers for 1.5 hours about MSD's	Over one-third of line-managers reported decrease in lost work time within their departments.	4
Milanese (2000) ¹⁰²	Investigated delivery of in-house case management by physiotherapist to professional orchestra musicians with playing-related MSD's. Only over a 6-week period.	Direct healthcare cost savings, and indirect savings from travel costs, and potentially reduced lost time.	4
Russo & Innes (2002) ⁹⁹	Retrospective file review of 172 cases to determine case managers' role in RTW.		5
† See Table A9			

Table A4. Studies excluded from the review of cost-benefits of active case management

Study	Overview
Coleman & Hansen (1994) ¹⁵¹	Educational back care programme for nursing staff. Described by authors as “descriptive study”, but really one of the biographical “this-is-what-I-do-in-my-practice” type of articles.
Eissenhauer et al (1998). German language, only Abstract available in English ¹⁵²	Observational study in insurance scheme investigating RTW rates and retirement with pension. Investigated role of ongoing rehabilitation, following discharge from acute admissions.
Faucett & McCarthy (2003) ¹⁵³	Descriptive study.
Foye et al (2002) ¹⁵⁴	Article outlines an educational learning module
Helliwell & Taylor (2004) ¹⁵⁵	Educational article
Knight (1997) ¹⁵⁶	
Mannon et al (1994) ¹⁵⁷	Descriptive article. Outlines case management approach.
Mootz et al (1999) ¹⁵⁸	Review and educational article.
Nadler et al (1999) ¹⁵⁹	Educational article
Reed (2002) ¹⁶⁰	
Scheer et al (1995) ¹⁶¹	Literature review
Seitz et al (2001). German language, only Abstract available in English ¹⁶²	Outlines feasibility of measurement tools for economic analysis of back pain rehabilitation
Wellman et al (2004) ¹⁶³	Outlines sentinel system for occupational surveillance of work-related occupational surveillance system.
Wickizer et al (2001) ¹⁶⁴	Outlines policy initiative to improve quality of healthcare delivery to workers compensation claimants in Washington State

Table A5. A Brief History of Key Back Pain Task Forces and Guidelines

1987 Quebec Task Force on Spinal Disorders (QTFSD), Canada²¹⁴

- Emphasised the magnitude of the problem
- Identified the major obstacle presented by the lack of consistent classification or diagnoses
- Psychosocial issues were perceived as merely secondary reactions, and not relevant to early management

1987 Institute of Medicine (IOM), U.S.A.²¹⁵

- Published report on Pain and Disability: Clinical, Behavioural, and Public Policy Perspectives
- Identified complex multidimensional nature of pain problems, and need for new paradigm
- Called for clear definitions, and focused research
- Recommended demonstration projects for service providers

1993 WorkCover, South Australia²¹⁶

- Made an attempt to simplify classification, with a frequently overlooked major new proposal that the classification of “back strain” should only be allowed for a maximum of eight weeks
- Otherwise, it was a description of usual clinical practice, with no attempt to provide critical reasoning or analysis
- Psychosocial assessment appended, with an untested scale to indicate risk of work loss

1994 Agency for Health Care Policy and Research, U.S.A.¹²⁴

- Large scale literature review
- Expert Panel methodology
- Review of scientific evidence based on operationalised criteria, with recommendations made on the basis of evidence
- Psychosocial issues acknowledged and emphasised, but not well articulated

1994 Clinical Standards Advisory Group, U.K.¹²⁹

- Strong statements about the magnitude of the problem, and the economic *costs*
- Recommendations based on the AHCPR (U.S.) literature review
- Acknowledgment of psychosocial issues
- Recommendation for adoption of Biopsychosocial model
- Recommendation for comprehensive (biopsychosocial) assessment at 6 weeks

1995 Pain in the Workplace Task Force (IASP)²¹⁷

- Emphasis on new category called non-specific LBP
- Controversial recommendations to purchasers and compensation systems, including cessation of payment for treatment and transfer to unemployment status at 7 weeks

1995 Quebec Task Force on Whiplash-Associated Disorders²¹⁸

- Emphasis on classification, followed by management plans
- Recommendation for mandatory comprehensive assessment at either 6 or 12 weeks depending on the classification of severity grade
- Mandatory multidisciplinary assessment to include musculoskeletal medicine expertise, and psychosocial expertise

1996 Royal College of General Practitioners U.K.¹³⁰

- Revised edition of CSAG guidelines
- Stronger recommendations about return to usual activities
- Recognition of highest level of evidence that psychosocial factors are important in chronic low back pain and disability

- Recognition that psychosocial factors are more important at early stages than previously considered

1997 ACC and the National Health Committee, N.Z.^{50 127}

- Publication of the New Zealand Acute Low Back Pain Guide¹²⁷ (updated in 1999 & 2004)
- Publication of the Guide to Assessing Psychosocial Yellow Flags: Risk Factors for Long-Term Disability and Work Loss⁵⁰
- Publication of the Patient Guide to Acute Low Back Pain Management²¹⁹ (1998), and the Employers Guide²²⁰ (2000)

1999 Royal College of General Practitioners U.K.¹³¹

- Updated version of the UK guide contained only two differences from the 1996 edition in the principal recommendations: (1) Noted the optimum timing for the use of manipulation is unclear; (2) Adopted concept of Psychosocial Yellow Flags⁵⁰

2003 European Commission Research Directorate General

- Published guidance on acute low back pain, chronic low back pain, and prevention of low back pain

Table A6. Studies included in the review of cost-benefits of rehabilitation programmes

Study	Overview	Key Findings	Level of Evidence †
Battie et al (2002) ¹⁷²	Retrospective case series comparing data before and after implementation of a medical utilization review programme in workers compensation system	No differences between before and after groups on number of days work loss, healthcare costs, and compensation/disability awards for permanent or partial loss.	4
Carey et al (1995) ¹⁷³	Prospective case series (N=1555) comparing outcomes and costs of healthcare for acute low back pain patients attending GP's, chiropractors, or orthopaedic surgeons	Outcomes were very similar, but costs differed significantly. Surgeons were the most expensive, and GP's the least.	4
Chibnall et al (2000) ¹⁷⁴	Retrospective case series of 184 workers compensation cases	There is considerable variation in practice among company occupational doctors, and treatment duration influences claim costs	4
Daltroy et al	RCT using about 4000 US postal workers, attempted to prevent the development of low back injuries in the workplace through the use of an educational programme, and thereby to reduce costs. The educational programme was delivered by physiotherapists and was modelled on the classical back school approach, training both workers and their supervisors. Follow-up was for more than five years, and during this time 360 workers reported a back injury.	The education intervention did not reduce the rate of back injury reported, the cost of claims, the amount of time off work, the injury rate, or the rate of repeated injury after RTW. Instead it was found that the education intervention had the propensity to actually increase the report of back injuries, perhaps through raised awareness. The authors concluded that an educational programme was unable to produce any benefits.	1b
Evans et al (2001) ²¹³	Prospective cohort study in 395 workers compensation cases treated in a functional restoration programme, divided into those with prior injury and those without	Rehabilitation outcomes at 1-year were the same for both groups	2b
Frank et al (1998) ²⁰⁴	Systematic review on secondary prevention in low back pain	Found evidence that employers who offer modified duties reduce work loss, and that sub acute interventions reduce subsequent work loss	1a
Gamble et al (1993) ¹⁷⁹	Quasi-experimental study investigating effect of exercise training on work capacity	Intervention group appears to have increased work capacity, but very small sample size	3b
Gatchel et al (2003) ¹⁹⁰	RCT investigating effects of early intervention programme in selected low back pain cases	Early intervention significantly reduced chronicity, and was very cost-effective	1b
Goodman (1992) ¹⁸⁰	Case-control study investigating aggressive RTW programme following carpal tunnel surgery	RTW much faster in treated group, and costs were 58% lower	3b
Goossens et al (1998) ¹⁹²	RCT comparing costs of behavioural programme for chronic low back pain with cognitive-behavioural programme	Patients attending either type of programme had significantly better outcomes than those with no treatment. Group programmes are more cost-effective than individual therapy	1b

Study	Overview	Key Findings	Level of Evidence †
Grahn et al (2003, 2004) ^{181 182}	Case-control study with 6-year follow-up investigating the cost-effectiveness of multidisciplinary rehabilitation programme for chronic MSD's	Patient motivation was found to be a predictor of total costs. Better motivated patients cost four times less.	3b
Guzman et al (2005) ²¹⁴	Cochrane systematic review	There is evidence that intensive multidisciplinary biopsychosocial rehabilitation with a functional restoration approach improves pain and function. Less intensive interventions did not show improvements in clinically relevant outcomes	1a
Hagen et al (2000, 2003) ^{193 194}	RCT investigating early intervention with sub acute back pain off work	Significant gain in days off work in first year, therefore cost-effective.	1b
Haldorsen et al (2002) ¹⁹¹	RCT investigating multidisciplinary rehabilitation for MSD's off work, classified by risk of poor prognosis	High risk patients did better in multidisciplinary treatment, and this was cost-effective	1b
Haldorsen et al (1998) ¹⁷⁵	Case series investigating effect of light mobilisation programme for low back pain	It is possible to identify those who do not return to work	4
Heymans et al (2004)	Cochrane systematic review	There is moderate evidence for back schools in occupational settings	1a
Karjalainen et al (2003, 2004) ^{195 196}	RCT for sub acute low back pain	Early intervention group significantly cheaper	1b
Karjalainen et al (2005) ²⁰⁹	Cochrane systematic review		1a
Kim et al (2004) ¹⁸³	Cohort study using a back education programme	Reduction in number of days lost	3b
Lemstra & Olszynski (2003, 2004) ^{80 184}	Prospective cohort study, compared on-site intervention to offsite work hardening in workers compensation occupational back pain and work-related upper limb disorder	On-site intervention resulted in lower injury claim incidence, duration, and costs than off-site work hardening	3b
Linton & Andersson (2000) ¹⁹⁷	RCT using CBT intervention for sub acute back and neck pain	Nine-fold reduction in risk of long-term sickness absence	1b
Marnetoft & Selander (2000) ²¹⁵	Small cohort study, unemployed sick-listed	Found vocational rehabilitation approach doubled the chance that benefit levels were reduced at 1-year follow-up	3b
McElligot et al	Case series, on-site rehabilitation for back injuries	Large net saving to the company, all workers returned to work within 60	4

Study	Overview	Key Findings	Level of Evidence †
(1989) ¹⁷⁶		days	
Mignone & Guidotti (1999) ¹⁸⁵	Tested support groups for injured workers as low-cost intervention	No benefit observed	3b
Noren et al (1997) ¹⁸⁶	Cohort study, looked at impact of individual treatment programme in women with back or pelvic pain during pregnancy	Reduced sick leave during pregnancy, substantial direct cost savings	3b
Pinnington et al (2004) ¹⁷⁷	Case series and descriptive study to investigate use of prompt referrals to physiotherapy	Indications that prompt access to PT for low back pain in primary care costs less per episode than conventional management	4
Ryan et al (1995) ¹⁸⁷	Cohort study, early intervention approach for back injuries in coalminers	Reduced injury rate, time off work, and costs	3b
Scheel et al (2002a, 2002b) ¹⁹⁸ ₁₉₉	RCT to investigate effect of modified work duties	No difference between groups	1b
Scheer et al (1995) ²⁰¹	Systematic review, 35 articles, acute interventions for low back pain	Poor scientific evidence base available during search period (1975 to 1993).	1a
Scheer et al (1996) ²⁰²	Systematic review, 35 articles, discogenic back pain	Need for further studies on effects of treatments such as surgery, conservative care, epidural steroid injections, or traction on RTW outcomes.	1a
Scheer et al (1997) ²⁰³	Systematic review, 35 articles, sub acute & chronic interventions	Chronic back pain is the most significant cost problem, but this knowledge had not led to effective solutions (by 1993).	1a
Van den Hout et al (2003) ²⁰⁰	RCT investigating addition of problem-solving therapy to behavioural graded activity in low back pain	Addition of problem-solving therapy had value for employees	1b
Versloot et al (1992) ¹⁸⁸	Cohort study investigated back education programme	Reduced mean length of absenteeism, but not incidence	3b
Wiesel et al (1994) ¹⁷⁸	Case series, diagnosis and treatment protocols implemented in large company	Reduced work days lost, surgery rate, costs	4

† See Table A9

Table A7. Studies excluded in the review of cost-benefits of rehabilitation programmes

Study	Overview
Beaumont & Quinlan (2002) ¹⁶⁸	Editorial
Blumenthal (1987) ²¹⁶	Descriptive, theoretical overview article
Fisher (2003) ¹⁶⁹	Survey of employee perceptions of RTW barriers
Fleten et al (2004) ²¹²	Survey of prediction of sick leave duration
Hansson et al (2000) ¹⁷¹	Reviews outcomes of biomedical treatments
Himmelstein et al (1995) ²¹⁷	Descriptive study
Hochanadel (1993) ²¹⁸	Describes physiotherapy treatment programme
Mitchell & Carmen (1994) ²¹⁹	RCT comparing types of functional restoration programmes
Ohlund et al (1996) ²²⁰	Study to identify predictors of failure to RTW
Rose et al (1997) ²²¹	Treatment effectiveness study
Staal et al (2002) ²²²	Descriptive, theoretical overview article
Staal et al (2003) ²²³	Descriptive study
Teasell & Bombardier (2001) ²²⁴	Reviews work predictors
Van Duijn et al (2004) ²²⁵	Survey of employer perceptions of RTW barriers

Table A8. Grey literature requests (in-house reviews or unpublished literature)

Organisation	Country	Reply	Summary
Workers Compensation Board of Prince Edward Island	Canada	Nil	
Saskatchewan Workers Compensation Board	Canada	Yes	No studies or reviews
Yukon Workers' Compensation Health and Safety Board	Canada	Yes	Stated that they have not conducted any reviews or studies. However, they do carry out an initial triage of all claims they receive and provide both rehabilitation services and active case management when these interventions are indicated. They also noted that the services they provide conform very closely to the definitions used in the current study being conducted for the HSE and that they consider them to be the current industry best practices
Association of Workers' Compensation Boards of Canada	Canada	Nil	
Workers Compensation Board of Alberta	Canada	Yes	Healthcare (case) management is conducted using 7 major components: evidence-based disability management tools; negotiation, procurement, contracting; authorised provider network; continuous improvement; coaching, mentoring, support; joint educational initiatives; and, programme development/pilots. Data is available for the period 1993 through 2003. Over this period the average number of physiotherapy treatments per (soft tissue/musculoskeletal) claim reduced from 20.7 to 12.9. The average duration of physiotherapy treatments measured in number of calendar days reduced from 134.4 to 34 days. Over this period fitness-to-work (FTW) outcomes from physiotherapy treatment, and patient satisfaction remained relatively constant with very small declines. The length of stay in the occupational rehabilitation programme reduced from 58.9 to 28.9 days. The average cost per person served reduced from \$9,718 to \$3,553 Canadian. Finally, the RTW rate following the occupational rehabilitation programme increased from 31% to 60%
Workers Compensation Board of British Columbia	Canada	Yes	They have not conducted any formal reviews or studies into the cost effectiveness of returning clients with musculoskeletal disorders to work, using case management and/or work rehabilitation for those with these conditions ¹²⁵ . However, they have operated with the Case Management model and clinical case planning to achieve "Maximal Medical Recovery (MMR)" in the most optimal time. They use Disability Guidelines to target recovery dates. In addition, they have established a network of Rehabilitation Providers of various levels of intensity to help achieve best clinical outcomes and RTW. Every provider is measured in RTW outcome. As a result they believe that they have reduced duration of claims, and therefore, reduction in wage loss where time-loss is a factor. They do measure short-term disability claim costs across the organisation on a regular basis giving some measure of cost effectiveness
Workplace Safety and Insurance Board of Manitoba	Canada	Yes	No studies or reviews
Workplace Health, Safety and Compensation Commission of	Canada	Yes	Two reports: (1) Reflex Sympathetic Dystrophy (RSD); (2) Cumulative Trauma Disorder (CTD)

Table A8. Grey literature requests (in-house reviews or unpublished literature)

<i>Organisation</i>	<i>Country</i>	<i>Reply</i>	<i>Summary</i>
New Brunswick			
Workplace Health, Safety and Compensation Commission of Newfoundland & Labrador	Canada	Yes	No studies or reviews
Workers Compensation Board of Nova Scotia	Canada	Yes	No studies or reviews
Workers Compensation Board of Northwest Territories and Nunavut	Canada	Nil	
Workplace Safety and Insurance Board of Ontario	Canada	Nil	
Canadian Association for Research on Work and Health	Canada	Nil	
Institute for Work & Health, Toronto	Canada	Yes	Systematic review concluded there is moderate evidence that early contact with the worker by the workplace, a work accommodation offer, and contact between the healthcare provider and the workplace significantly reduce duration of work disability and associated costs. They also found moderate evidence to support ergonomic worksite visits and “the involvement of an individual with responsibility for RTW coordination” in reducing duration and costs. Moderate evidence also supports educating supervisors and managers, and labour-management cooperation. They noted that certain intervention components were directly related to insurer (funder/payor) activity and decision-making, including the role of case management.
Insitut de reserche Robert-Sauvé en santé et en sécurité du travail, Montréal	Canada	Nil	
National Institute of Disability Management and Research, Canada	Canada	Nil	
Expert, Canada	Canada	Yes	Aware of only one study - Loisel P, Lemaire J, Poitras S, et al. Cost-benefit and cost-effectiveness analysis of the Sherbrooke model of back pain management. Occup Environ Med. 2002;59:807-815. Noted also that he is currently conducting a cost-benefit study based on data collected for a RCT on back pain management for construction workers. However, only preliminary results will be available in late 2005.
Institut National de recherché et de securite, France	France	Nil	
Finnish Institute of Occupational	Finland	Nil	

Table A8. Grey literature requests (in-house reviews or unpublished literature)

<i>Organisation</i>	<i>Country</i>	<i>Reply</i>	<i>Summary</i>
Health			
Expert, Sweden	Sweden	Nil	
TNO Work and Employment, The Netherlands	The Netherlands	Nil	
Ministry of Social Affairs and Employment, The Netherlands	The Netherlands	Yes	No studies or reviews
Washington State Department of Labor and Industries	USA	Yes	No studies or reviews
Texas Workers Compensation Commission	USA	Nil	
Ohio Bureau of Workers Compensation	USA	Yes	No Studies or reviews, but they noted that their return to work programs track the overall results for Ohio employers in comparison to the results prior to the implementation of a return to work program. However, they do not have any detailed information on MSD's, such as comparing case management and vocational rehabilitation results.
The Case Management Society UK	UK	Nil	
Case Management Society of Australia	Australia	Nil	
American Case Management Association	USA	Nil	
Case Management Society of America	USA	Yes	Recommends some published studies. These cover a number of issues such as management of mental health ¹⁵ , diabetes ¹⁶ , psychotic illness ¹⁷ , and cost-effectiveness of nursing case management ^{18 19} . However, there are no studies or reviews listed that are relevant to MSD's or occupational rehabilitation.
The Case Management Society UK	UK	Nil	
Case Management Society of Australia	Australia	Nil	
American Case Management Association	USA	Nil	

Table A8. Grey literature requests (in-house reviews or unpublished literature)

<i>Organisation</i>	<i>Country</i>	<i>Reply</i>	<i>Summary</i>
Case Management Society of America	USA	Yes	Recommends some published studies. These cover a number of issues such as management of mental health ¹⁵ , diabetes ¹⁶ , psychotic illness ¹⁷ , and cost-effectiveness of nursing case management ^{18 19} . However, there are no studies or reviews listed that are relevant to MSD's or occupational rehabilitation.
Comcare, Australia	Australia	Yes	They have only conducted a limited review with local physiotherapists to determine established protocols and practices in the management of musculoskeletal conditions and the return to work process. However, this did not include a cost-benefit study
WorkCover Queensland, Australia	Australia	Nil	
WorkCover, South Australia	Australia	Yes	They have promoted for at least two years "the best way to manage a work injury claim is to catch it quickly and focus the injured worker on their recovery... Statistics show that reporting an incident and making a claim within 24 hours of an injury will increase the speed of recovery and can reduce claims costs by up to 45 per cent". However, the basis for this assertion is not entirely clear. A project sponsored by WorkCover aimed to explore the impact that managers and co-workers have on recovery and outcomes such as RTW ¹³ . A training initiative for managers that emphasised open communication between all parties was piloted following an initial survey of workers and managers. It was found that this made a significant difference to the ways in which they would support an injured worker, and it was assumed that this had a beneficial effect on total cost of claims. However, information on outcome and costs was not directly collected.
WorkCover Tasmania	Australia	Nil	
CRS Australia	Australia	Nil	
Workplace Services, Department for Administrative and Information, Australia	Australia	Yes	No studies or reviews
Australian Council of Trade Unions	Australia	Nil	
Victorian WorkCover Authority, Australia	Australia	Nil	
WorkCover Western Australia	Australia	Nil	
The Victorian Employers' Chamber of Commerce and Industry	Australia	Nil	
WorkCover NSW	Australia	Yes	No studies or reviews

Table A8. Grey literature requests (in-house reviews or unpublished literature)

<i>Organisation</i>	<i>Country</i>	<i>Reply</i>	<i>Summary</i>
WorkCover ACT	Australia	Nil	
Australian Industry Group	Australia	Nil	

Table A9. Levels of Evidence

Level	Therapy/ Prevention, Aetiology/ Harm	Prognosis	Diagnosis	Differential diagnosis/ symptom prevalence study	Economic and decision analyses
1a	SR (with homogeneity*) of RCTs	SR (with homogeneity*) of inception cohort studies; CDR† validated in different populations	SR (with homogeneity*) of Level 1 diagnostic studies; CDR† with 1b studies from different clinical centres	SR (with homogeneity*) of prospective cohort studies	SR (with homogeneity*) of Level 1 economic studies
1b	Individual RCT (with narrow <u>Confidence Interval</u> ‡)	Individual inception cohort study with ≥ 80% follow-up; CDR† validated in a single population	Validating** cohort study with good††† notes reference standards; or CDR† tested within one clinical centre	Prospective cohort study with good follow-up****	Analysis based on clinically sensible costs or alternatives; systematic review(s) of the evidence; and including multi-way sensitivity analyses
1c	All or none§	All or none case-series	Absolute SpPins and SnNouts††	All or none case-series	Absolute better-value or worse-value analyses ††††
2a	SR (with <u>homogeneity*</u>) of cohort studies	SR (with <u>homogeneity*</u>) of either retrospective cohort studies or untreated control groups in RCTs	SR (with <u>homogeneity*</u>) of Level >2 diagnostic studies	SR (with <u>homogeneity*</u>) of 2b and better studies	SR (with <u>homogeneity*</u>) of Level >2 economic studies
2b	Individual cohort study (including low quality RCT; e.g., <80% follow-up)	Retrospective cohort study or follow-up of untreated control patients in an RCT; Derivation of CDR† or validated on split-sample§§§ only	Exploratory** cohort study with <u>good†††</u> reference standards; CDR† after derivation, or validated only on split-sample§§§ or databases	Retrospective cohort study, or poor follow-up	Analysis based on clinically sensible costs or alternatives; limited review(s) of the evidence, or single studies; and including multi-way sensitivity analyses
2c	"Outcomes" Research; Ecological studies	"Outcomes" Research		Ecological studies	Audit or outcomes research
3a	SR (with <u>homogeneity*</u>) of case-control studies		SR (with <u>homogeneity*</u>) of 3b and better studies	SR (with <u>homogeneity*</u>) of 3b and better studies	SR (with <u>homogeneity*</u>) of 3b and better studies
3b	Individual Case-Control Study		Non-consecutive study; or without consistently applied reference standards	Non-consecutive cohort study, or very limited population	Analysis based on limited alternatives or costs, poor quality estimates of data, but including sensitivity analyses incorporating clinically sensible variations.
4	Case-series (and <u>poor quality cohort and case-control studies</u> §§)	Case-series (and <u>poor quality prognostic cohort studies</u> ***)	Case-control study, poor or non-independent reference standard	Case-series or superseded reference standards	Analysis with no sensitivity analysis
5	Expert opinion without explicit critical appraisal, or based on physiology, bench research or "first principles"	Expert opinion without explicit critical appraisal, or based on physiology, bench research or "first principles"	Expert opinion without explicit critical appraisal, or based on physiology, bench research or "first principles"	Expert opinion without explicit critical appraisal, or based on physiology, bench research or "first principles"	Expert opinion without explicit critical appraisal, or based on economic theory or "first principles"

SR = Systematic Review; CDR = Clinical Decision Rule

Notes

Users can add a minus-sign "-" to denote the level of that fails to provide a conclusive answer because of:

- EITHER a single result with a wide Confidence Interval (such that, for example, an ARR (Absolute Risk Ratio) in an RCT is not statistically significant but whose confidence intervals fail to exclude clinically important benefit or harm)
- OR a Systematic Review with troublesome (and statistically significant) heterogeneity.
- Such evidence is inconclusive, and therefore can only generate Grade D recommendations.

*	By homogeneity we mean a systematic review that is free of worrisome variations (heterogeneity) in the directions and degrees of results between individual studies. Not all systematic reviews with statistically significant heterogeneity need be worrisome, and not all worrisome heterogeneity need be statistically significant. As noted above, studies displaying worrisome heterogeneity should be tagged with a "-" at the end of their designated level.
†	Clinical Decision Rule. (These are algorithms or scoring systems which lead to a prognostic estimation or a diagnostic category.)
‡	See note #2 for advice on how to understand, rate and use trials or other studies with wide confidence intervals.
§	Met when <u>all</u> patients died before the Rx became available, but some now survive on it; or when some patients died before the Rx became available, but <u>none</u> now die on it.
§§	By poor quality <u>cohort</u> study we mean one that failed to clearly define comparison groups and/or failed to measure exposures and outcomes in the same (preferably blinded), objective way in both exposed and non-exposed individuals and/or failed to identify or appropriately control known confounders and/or failed to carry out a sufficiently long and complete follow-up of patients. By poor quality <u>case-control</u> study we mean one that failed to clearly define comparison groups and/or failed to measure exposures and outcomes in the same (preferably blinded), objective way in both cases and controls and/or failed to identify or appropriately control known confounders.
§§§	Split-sample validation is achieved by collecting all the information in a single tranche, then artificially dividing this into "derivation" and "validation" samples.
††	An "Absolute SpPin" is a diagnostic finding whose <u>Specificity</u> is so high that a <u>Positive</u> result rules- <u>in</u> the diagnosis. An "Absolute SnNout" is a diagnostic finding whose <u>Sensitivity</u> is so high that a <u>Negative</u> result rules- <u>out</u> the diagnosis.
‡‡	Good, better, bad and worse refer to the comparisons between treatments in terms of their clinical risks and benefits.
†††	<u>Good</u> reference standards are independent of the test, and applied blindly or objectively to applied to all patients. <u>Poor</u> reference standards are haphazardly applied, but still independent of the test. Use of a non-independent reference standard (where the 'test' is included in the 'reference', or where the 'testing' affects the 'reference') implies a level 4 study.
††††	Better-value treatments are clearly as good but cheaper, or better at the same or reduced cost. Worse-value treatments are as good and more expensive, or worse and the equally or more expensive.
**	Validating studies test the quality of a specific diagnostic test, based on prior evidence. An exploratory study collects information and trawls the data (e.g. using a regression analysis) to find which factors are 'significant'.
***	By poor quality prognostic cohort study we mean one in which sampling was biased in favour of patients who already had the target outcome, or the measurement of outcomes was accomplished in <80% of study patients, or outcomes were determined in an unblinded, non-objective way, or there was no correction for confounding factors.
****	Good follow-up in a differential diagnosis study is >80%, with adequate time for alternative diagnoses to emerge (e.g. 1-6 months acute, 1 - 5 years chronic)

APPENDIX 2

FINDINGS OF THE ON-LINE QUESTIONNAIRE

1. Introduction

The questionnaire was developed with a two fold purpose:

5. To obtain information from professionals on any MSD rehabilitation and active case management programmes they were running, including to identify whether they had any data on the costs and benefits of these programmes
6. To obtain the views of professional concerning the effectiveness of these programmes, and any benefits and obstacles that may be encountered through them.

It was developed be completed on-line and was available at www.hu-tech.co.uk/question-rehab.html. The link to it was advertised through professional newsletters and journals, meetings, websites, of identified target professionals, at the same time as the focus group discussions were advertised (see Focus Group report, for full details).

2. Responses

The questionnaire ran from 1st February 2005 to 9th September 2005.

Altogether 126 unique responses were obtained. A further four responses were received which were duplicates of the original response (due to pressing the submit button twice). Five responses were received which were blank and therefore disregarded.

3. Respondents

3.1 Profession of respondents

The majority of the respondents were physiotherapists. The breakdown of professions of respondents was:

- physiotherapists (70)
- occupational health nurses (19)
- osteopaths / chiropractors (13)
- health and safety advisors / registered safety practitioners (8)
- moving and handling advisors (2)
- occupational psychologist (2)
- rehabilitation manager (nurse) / case manager (1)
- line manager / team leader (1)
- senior manager (1)
- ergonomist (1)
- clinical manager of rehab unit (1)
- project co-ordinator (1)
- specialist practitioner (OH) (1).

[5 respondents did not answer.]

Surprisingly, only one individual classed themselves as a case manager. This is presumably because although others may have been undertaking case management they did not see this as their main profession.

88 respondents (70%) work in-house; 33 (26%) are contracted to other companies; 5 respondents did not answer this question.

Respondents could answer for their own company (if they were working as an in-house professional) or for another company they were providing a service for (e.g. as a contractor or consultant). The following responses are based on the company on whose behalf they were answering.

3.2 Size of organisation represented

The majority of respondents worked for large organisations, with more than 250 employees (90 respondents); 9 worked for organisations with between 50 and 249 employees; 8 worked for organisations with between 10 and 49 employees; 15 worked for organisations with fewer than 10 employees.

3.3 Industry sectors represented

- Health services (79)
- Manufacturing (11)
- Other office based industry (11)
- Wholesale and retail (6)
- Finance, insurance and real estate (4)
- Other non-office based industry (3)
- Service (3)
- Construction (1)

8 did not respond to this question

4. Provision of on-site occupational health function

The majority of organisations (71%) had an on-site occupational health function, with 26% not having this function [3 respondents did not answer this question].

Half the organisations (48%) had a formal or documented programme for managing those with MSDs, with the same number reporting that they did not [4 did not respond].

Of those who did have a formal programme for managing those with MSDs, almost half (44%) had been providing this for more than 6 years; 18% had been providing it for between 3 and 6 years; 26% for between 1 and 3 years; and 12% for less than a year. For some organisations these programmes are clearly new, and they may still be in the development stage.

Respondents were asked who was involved in the programme for managing employees with MSDs. Respondents could select more than one option. The results are shown in Figure 1 below.

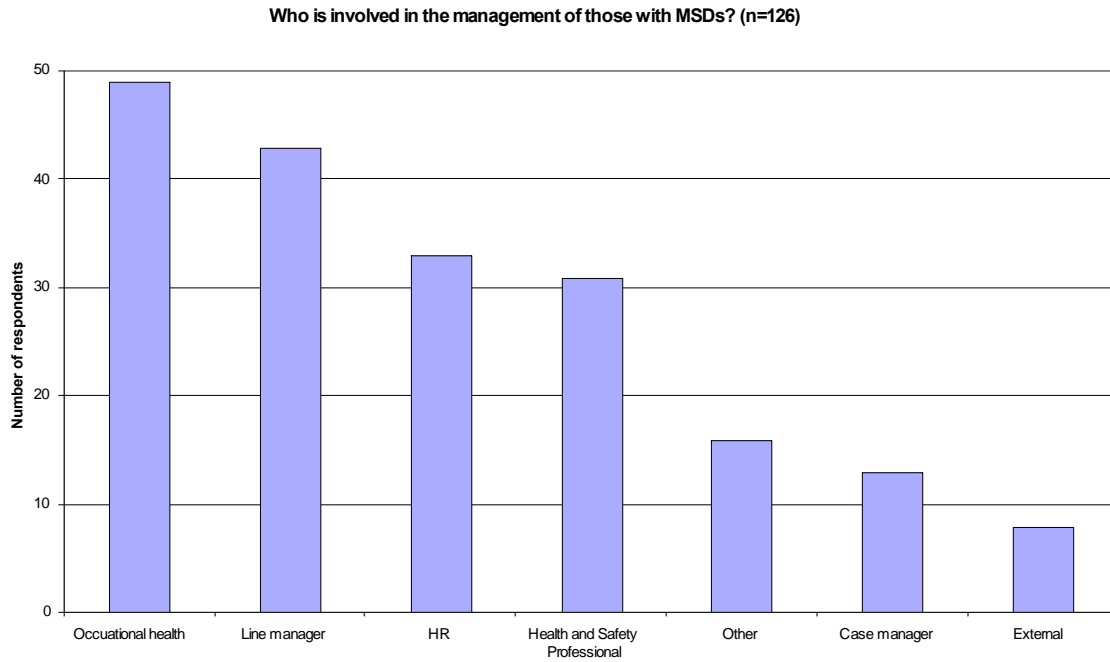


Figure 1: Personnel involved in the management of those with MSDs

The professions listed under other were:

- Physios (11)
- Back care advisors (2)
- In-house rehabilitation specialists / in-house clinical team (2)
- Contract / rehab physician (2)
- Manual handling coordinator (1)
- Clinicians (1)
- Rheumatologists (1)
- Orthos (1)
- Chiropractor (1)
- Fitness advisors (1)
- Ergonomist / Occupational Health Physiotherapist (1)
- Therapy services (1)
- Psychology (1)

5. Provision of therapy

5.1 Type of therapy provided

Seventy one percent of organisations provided therapy (e.g. physiotherapy, support groups etc) for employees with MSDs. Twenty-five percent did not. [6 non respondents.]

The type of therapy provided and whether this is on-site or off-site is shown in Figure 2 below.

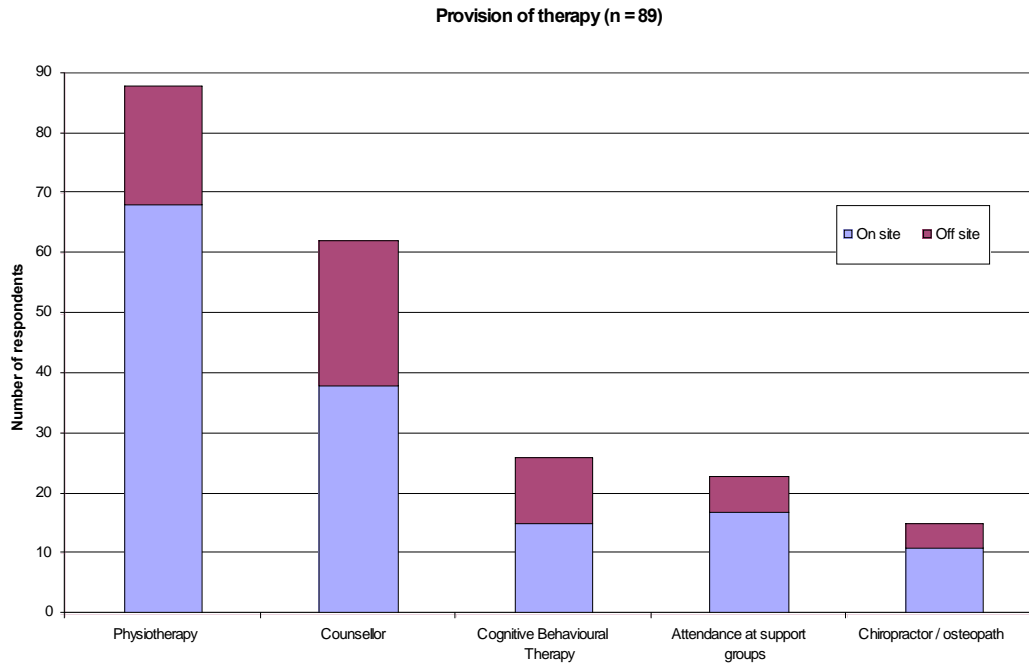


Figure 2: the forms of therapy provided by companies and whether this is on or off site

Other forms of therapy provided were:

- Any other appropriate medical or pastoral care
- Aromatherapy/massage/reflexology
- Back Rehab programme
- Chiropodist (on site) and. Podiatrist (off site) via physiotherapist referral
- Complementary therapies including reflexology, aromatherapy and massage
- Ergonomic workshops
- Massage/ Sports Massage
- Medical review
- MRI scans
- OH Physician, Bowen Therapy
- Orthopaedic surgeon & GP available
- Pain management programme and functional capacity evaluations
- Podiatry
- Return to work programme

5.2 For whom the therapy is provided

Respondents were asked who was eligible for the therapy provided.

- 66% said it was provided to employees with any MSD.
- 26% said it was provided for employees with MSDs that may be caused by other factors (e.g. sports injuries) but which may affect work.
- 8% said it was provided only to employees with MSDs that appear to be caused by work.

5.3 Should therapy be provided by companies for those who experience an MSD?

The majority of respondents did think the company should provide therapy for those who experience an MSD, with just 3% thinking it was not the role of the employer to provide therapy. Of those who thought that therapy should be provided, most (64% of these respondents) thought that it should be provided for *all* employees who experience an MSD. 36% thought it should be provided only for those MSDs likely to be caused or made worse by work. Respondents were asked to explain their answer. These are shown below, grouped into categories of response.

5.4 Reasons for / against the organisation providing therapy

To avoid chronic MSDs and associated long term absence

- The earlier MSD's are reported the quicker they can go on a rehab programme and the sooner they recover – leave them to become chronic and long term sickness absence
- If MSD's can be treated before they become acute then the chances of recovery are considerably higher. E.g. fast tracking to physio
- MSD is responsible for a large number of lost working days and should be addressed before conditions become chronic
- Any MSD regardless of origin has the potential to affect an employee's work. The cost of therapy is often much less than the cost of covering someone on sickness. Early intervention will often reduce severity and duration of any MSDs.
- Optimally should be provided for all, minimal for those where MSD affects work
- For any as they all need treatment and by this they will benefit from early return to work and support whilst in work if necessary
- Yes, so it has a direct impact on sickness absence and may increase higher work productivity
- Any MSD will effect the productivity of the employee
- Most MSDs have the potential to affect work at some point.
- MSDs caused outside of work will impact on work
- Any MSD can lead to problems at work
- Within the work setting it does not matter where the injury occurred, as the impact will be on the employer, as the individual will not be able to work.
- Staff are a valuable resource, it is in the interests of the employer to look after them!
- To help employees to remain at work
- To assist recovery and manage the problem and to prevent chronicity. Where chronicity has occurred try to manage this within the work place.
- MSD can easily impinge on the ability of the employee to effectively do their work, no matter what has caused the MSD
- Due to long waiting lists staff are often delayed in coming back to work while they wait for a referral, access to these services through work would potential speed up their rehabilitation program and allow them to be reintegrated into the workforce more effectively.
- To help employees remain within the working environment
- It will improve the effectiveness of the workforce and it may improve employer/employee relations It is irrelevant how a MSD is caused but the effects will have an impact on the productivity of the staff
- Yes for those at risk of pain related incapacity/work loss
- By providing, could encourage a more active approach to rehabilitation and facilitate return to work sooner and prevention of further injury.
- Employees have been shown to work more efficiently if they work within a supportive environment. Most employees will work and concentrate better if they are not in pain and

feel valued by their managers. This includes prompt treatment for these conditions. Also, prompt early intervention leads to less time off and helps prevent chronicity.

- MSD result in absence from work and affect productivity however caused. Not always possible to identify role of work in contributing to MSD but addressing work issues significantly improve chances of staff staying at work. Improves morale of staff as they feel company values their role, creates an environment of discussing problems or potential difficulties and opens avenues for addressing these.
- It is difficult to separate occupational and non occupational cases and many of our cases are unknown. All cases should be assessed and education should be provided as well as ergonomic interventions and treatment.
- How can you separate the impact of the MSD on the work output? So why make a difference from work impact and all MSDs. Anything that affects the person affects how they do the job so there is a cost. I do feel that there should be a record of when the MSD may be linked to some out of work pursuit which may be compromising to the overall fitness to carry out the duties of the job. But where do we draw the line of asking generally unfit staff to participate in activities to improve Cardio vascular out put. It's about balance, no MSD but heart attack is as much part of the picture.
- Having a preventative programme is the preferred option and this is what we aim to achieve.
- Providing therapy for those employees who experience an MSD will hopefully help to decrease the increasing numbers of sickness leave.
- Early advice on management or treatment where required will help prevent chronicity. It also helps identify patterns of risk which may be apparent by referral patterns. Staff are not always aware if work is a contributory factor.

Cost effective / benefit to company

- Where the company is able to provide therapy it can be very cost effective. Especially if people with conditions arising from work are able to be managed by OH medics. We had a unique situation at [company name] where the OH physicians could even prescribe for work induced conditions, and send a copy of the prescription and details to the GP. It was very beneficial to employees.
- The value in helping an employee with a MSD far out weighs the costs. Also the good will it produces with the employee is immeasurable.
- As a chiropractor, I keep people working, save them and their company money, and educate them so there is less time of work in the long term.
- Improve work morale, decrease absenteeism, cost saving
- Chiropractic is cost effective and provides the best answer to msd's
- Providing a service that manages MSD's enables the workforce to function efficiently and effectively as sickness is reduced. Also staff morale is better, knowing there are services to support them.
- Keeping people at work, or early return to work, is of great benefit to the individual and company both financially and psychologically.
- It is in the company's best interest to maintain a healthy workforce, when considering the cost of recruitment and retention of staff the cost of offering a therapy service should be worth it.
- The cost of replacing employees in today's climate has got to be bad for the image of the employer and also more costly in the long run, in terms of relocation costs (where applicable), advertising costs, training costs etc etc. It also shows that there is a commitment to the workforce by the employers, some thing that cannot be costed in terms of finance.
- Time saving and moral boosting service

- This would assist in providing a culture of employees feeling supported and would allow expertise relevant to the work environment enhance rehab
- Experience dictates that the source of the MSD is extremely difficult to identify accurately, as it is rarely a single entity. It is also deemed to be irrelevant, as the effect on the productivity of the workforce is identical, whatever the alleged source.
- Due to hidden costs to business, indirect and direct. NHS delays - to avoid where necessary - could look at impact of on-site physio services to impact asap. Budgets can be divided between OH / PMI / insurance schemes?

Duty of the organisation

- Appropriate intervention / support will help the business to reduce sickness absence and related costs, improve productivity and morale. It also assists a company to comply with its duty of care to its employees with regard to their health, safety and welfare.
- Regardless of the cost of MSD's, the employer has a duty of care and a programme will help the employee continue to work. Everyone wins!
- Organisations must do all they can to ensure employees' health is maintained, particularly if the employer could be the cause of the MSD

Using limited resources wisely – justifying prioritisation

- We have such limited resources in NHS that it would seem equitable to treat work related conditions, even though absence would be further reduced by treating all conditions.
- If an employee suffers an MSD which is caused by their work they should definitely have access to company funded therapy or assistance. Those employees whose MSD is caused by some outside activity, e.g. sport but suffer more as a result of their type of work should receive assistance but this should be on a case by case basis. We have had to deal with claims for compensation from employees who clearly have received MSD type disorders either before the start of their employment or because of an activity outside of their employment. When a claim is made, it is sometimes seen as an admission of guilt if a company provides assistance without question.
- But, with further investigation/assessment it may be necessary to offer therapy to all with MSD.
- Staff surveys indicate access to occupational specific physiotherapy treatment and advice helps them stay in work/ return to work more quickly. Any cause of MSD can impact work and access should be 'fast track'. Benefits appear to outweigh costs but this can be difficult to evaluate due to lack of objective data - much to our frustration as service provider. Combining the treatment service with a preventative programme should be a dual priority. Access for all causes of MSD may be limited to larger employers with a budget more likely to withstand the associated costs in the early days of the programme
- Can be encompassed in improving working lives but the priority should be on those who are made worse by work therefore enabling them to stay in work.
- Some people have a chronic condition that may not interfere with their work and therefore therapy should be provided for acute cases as a priority
- There is a need to balance cost to employer and benefit to place of employment. The primary reasoning behind therapy provision is to maintain workforce fitness to work, or minimise absence from work in order to maximise "productivity". It is likely that MSDs not caused by work, or affecting ability to work, are fairly minor / insignificant
- There are some injuries where treatment is not needed e.g. whiplash it is better to let the person recover without the need for providing rehabilitation at day one. Clearly if the person is at work and coping then the need to provide services is dramatically reduced.

- In an ideal world I would like therapy to be provided for all employees with MSD, but you could argue that individuals suffering other ailments i.e. psychological problems should have access to therapy. Therefore I think there is a need for prioritising cases. In work related cases pro-active strategies should be adopted to prevent MSDs occurring rather than taking a reactive approach.

Responsibility of company for work related injury

- In my view it is unfair for employees who have been injured at work, especially where there is no safe working practice implemented, to be penalised, by having to take unpaid sick leave or by being moved to another job on a lower salary. I feel employees should do more to help, but I suppose this would also mean having to admit failure to properly train or protect employees, which would make them liable for claims. Difficult!!
- Companies should only have to pay for what they are responsible for, or potentially responsible for, ie employees can cause their own MSD outside work doing a hobby - that the company should not be liable for.
- Not necessarily treatment but review, advice, work moderation, ergonomics interventions as appropriate
- Whether the MSD is work related or due to sport/other cause to have therapy support provided in the work place is a major advantage.
- If an injury is caused by work, companies should be willing to help the employee return to work as quickly as possible.

Employer not responsible for non-work related injury

- It would be unfair to expect an employer to pay for treatment for a non-work related injury.
- I don't feel that the responsibility or cost should fall on the organisation for a none work related injury unless the injury is affecting performance and therefore productivity or costing excessive amounts of money with sickness pay and therapy can be proven to speed up RTW.
- People take responsibility for their own personal lives out side work. Within the workplace tho' (and we run a heavy manual business) the employer has a legal obligation to care for the employee if an MSD occurs as a direct result of the working environment. Too many of our employees would jump on the band wagon if they thought they could receive free treatment (at the expense of the company) for problems sustained outside the workplace! I believe sickness absence would rocket!
- Employers should only be responsible for symptoms caused by or aggravated by work performed for the employer. The employee has a duty to disclose MSDs that are likely to be aggravated by work for the employer. However, employers may find that it is in the company's interest to provide treatment for some of their employees with MSDs.
- If MSD caused by other factors specifically then the employee should contribute towards the costs.
- Contribution to cost of treatment depends on whether the MSD is work related.
- Some responsibility must be taken by individual.
- Although the employer will benefit from prompt return to work of its employees, there appears to be too much abuse of such a system

Using NHS versus occupationally provided therapy

- Medical care can be provided for anyone through the NHS – any required care should either be provided by the employer or the NHS. Anyone who has a MSD should get the care they require on a clinical basis.
- Other services are available through the local health service

- I work for the NHS so have in house provision that staff can access via occupational health, but I do not believe that employers should have to provide employees with therapy as this is the role of the NHS
- It isn't usually necessary for the employer to pay for treatment as most people respond to GP treatment/advice. Some employers I work with have private healthcare but this is usually limited to senior members of staff. Employees can also pay for private treatment if they are keen to go back to work.
- Long term sickness leave needs a coordinated return to fitness to cope with work including counselling & coping strategies functional rehabilitation specific to job.

Dual responsibility

- Employees may have non work associated MSD which affect their productivity or ability to carry out their normal duties - these need to be address as well as option 2.
- Employees and employers have a responsibility of duty to represent each others interests. If msd problems occur then a collaboration between both is important
- Companies could provide an educational programme to help employees to be responsible for their body use.
- There is an argument for companies to provide therapy for all employees with a MSD regardless of cause as it is in their interest to have their workforce healthy and at work. However, there is a direct cost associated with this which may be difficult for some companies to sustain and there is a counter-argument that people should be vigilant against injury in order to be fit for work and fulfil their obligations to their employer. There are mutually beneficial responsibilities at work here. Providing therapy for those MSDs likely to be caused or made worse by work (however that would be decided) is, in some ways, the middle ground. Companies should provide some sort of ergonomic assessment/ teaching/ intervention in the workplace in order to promote prevention of MSDs!!

Other

- Therapy takes time away from normal working day. If every member of staff that had an injury went there would be no-one left.
- As my company is the NHS I agree with providing free physiotherapy to our employees. Other companies should ensure early referral to physiotherapy to minimise cost of time off work. However, the physiotherapy services are overstretched and more funding should be made available for us to increase staffing.
- If therapy only provided as in 2 above, potential for employees to give misleading information to access treatment.
- Extremely difficult question!! Would like to think that provision would be for all who have and MSD but with cost/benefit and cost/effectiveness cases required by funding sources the impact is more difficult and not as convincing when measured. Any problem which "may affect" someone at work should be included.
- Employees would spend less time away from work if treated on-site and soon after occurrence of the injury.
- I don't believe this is a realistic outcome for all employers, but those with a large workforce should provide access to rehabilitation. I would anticipate that such schemes would reduce employee sickness absence and could also be employed in a proactive manner using occupational health therapists to best advise on prevention of MSD rather than just treating the symptoms.
- All staff who are referred to physiotherapy are referred by their GP or line manager, irrespective of causation. Each individual is seen by one of the physiotherapy team and are autonomously individually assessed and treated. Standardisation of data collection,

assessment and outcome measures are the subject of our joint team project (proceeding very slowly). Economic benefits are unable to be determined due to poor resources.

- There is no completely right or wrong answer. Ideally it should be a joint government venture and address all with a MSD. The effectiveness of a service depends on many variables and especially an effective monitoring system.
- Difficult one to judge as we are an emergency service we encourage physical fitness / sports etc to help maintain fitness for the job and as such we feel we have to offer all personnel with a MSD the same service as those injuries at work. The work related do get priority but that is the only difference.
- As has been shown that sickness presenteeism leads to 1hr to 2.5hrs lost productivity every day. MSD's are usually accompanied with poor coping mechanisms and as such I will work integrated programs with a CBT or NLP practitioner. Static postures are known to aggravate MSD and as such become exacerbated by work positioning and stress/pressure placed upon the employee and thus should be under the remit of the employer's responsibility. Usually the employee does not do everything correctly to safeguard own health and should agree to pay for half of the costs where affordable.
- I do not feel qualified to answer this really as I am a physiotherapist working in the NHS and do not provide a company with a programme. We have not and are not in a position to cost the outcomes of such a programme in financial terms, but are in the process of auditing the results.
- Currently I work for the NHS but I use to work in Australia as a consultant and I would make myself available for assessment/advice on any strain/sprain that staff had. It meant that staff did not have to take time off to get it assessed and advice meant it would generally resolve quickly. This simple process and a few other strategies helped save 9-11 million \$ annually for many of my clients.

6. Perceived effectiveness rehab programmes

6.1 Effectiveness of the programmes provided

Respondents were asked whether they thought the programme they provided was effective, and also whether they thought it was cost effective. Figure 3 shows the perceived effectiveness of the programme, with the majority of respondents reporting that it was generally very effective. However, 6% had found it less effective than they had hoped.

When asked about the relative costs and benefits of the programmes, the overwhelming majority (95%) thought that the benefits of the programme outweighed the costs. Just 2% thought the costs outweighed the benefits. This is shown in Figure 4.

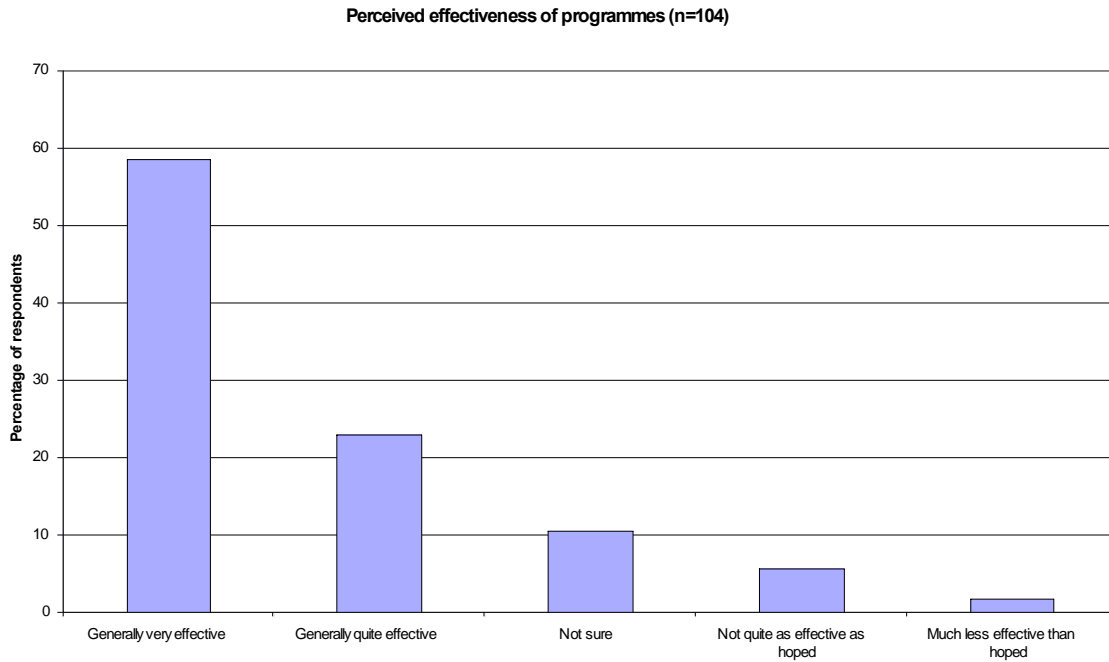


Figure 3: Perceived effectiveness of the programmes that are being run

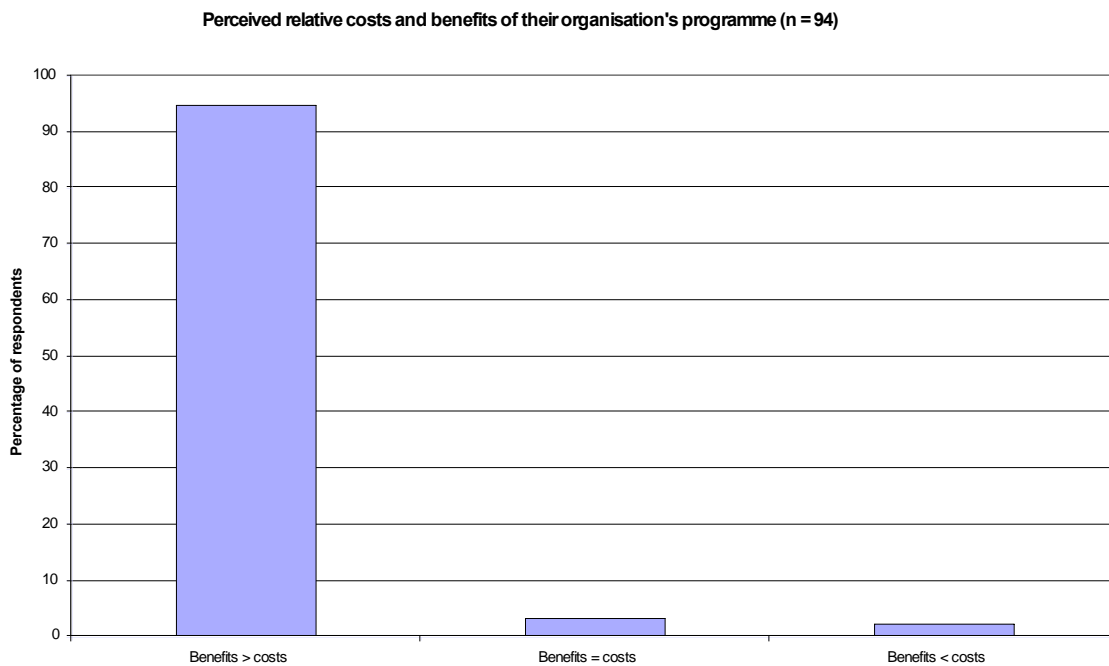


Figure 4: Perceived relative costs and benefits of the programmes that are being run

6.2 Effectiveness of programmes in general

A further question was asked at the end of the questionnaire (Qu 24) concerning the cost effectiveness of programmes in general rather than the specific programme that the organisation may have adopted. This allowed those who were not involved in a programme to comment on the effectiveness of them. The responses are shown in Figure 5.

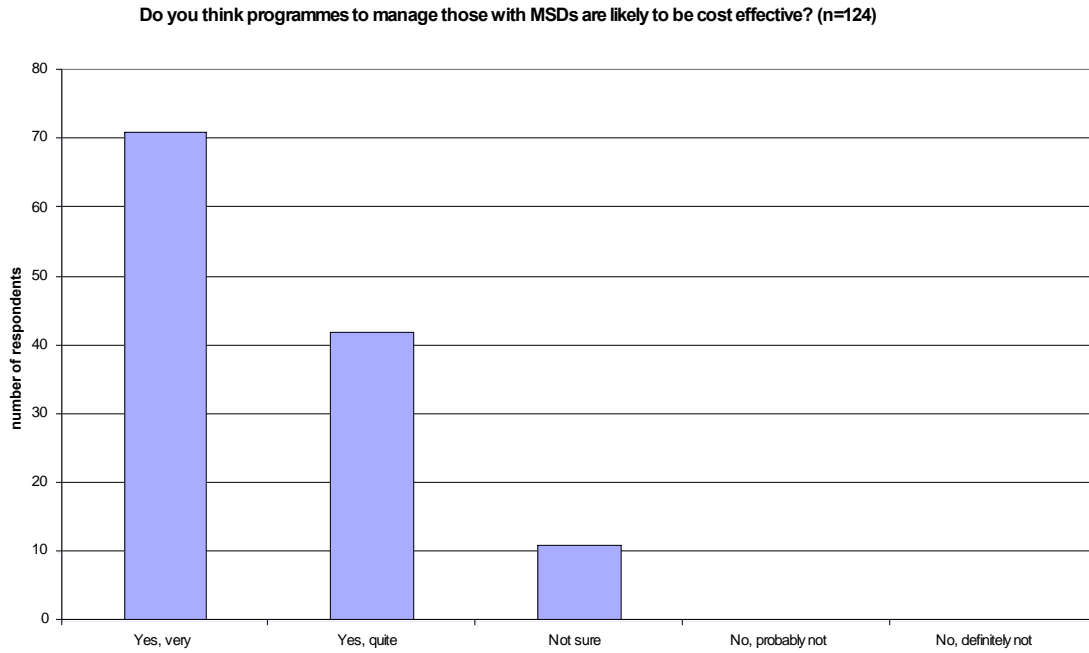


Figure 5: Cost effectiveness of programmes to manage that suffer MSDs

7. Attitudes towards running of rehabilitation programmes

Figure 6 shows the views of respondents to a series of statements.

The majority (81%) strongly agreed that **programmes that actively manage those with MSDs can be affective in helping employees stay in work or return to work.**

There was also agreement that **line managers have an active role to play in the management of those with MSDs**, with 56% strongly agreeing, and 41% agreeing.

Most agreed that **employers should give employees with MSDs time off work to attend clinics and therapy**, with 49% strongly agreeing, and 39% agreeing.

The majority were not sure (43%) or disagreed (28%) that **employees with MSDs should contribute to the cost of treatment provided by their employer.** Just 16% agreed, and 4% strongly agreed that employees should contribute to costs.

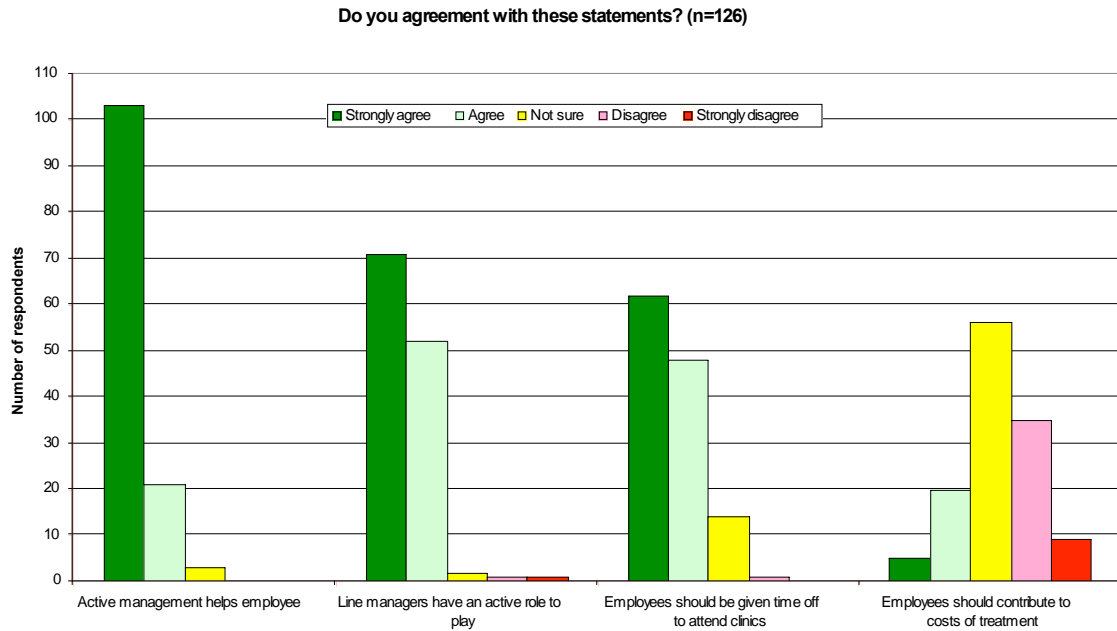


Figure 6: Views of running rehabilitation programmes

8 Obstacles to continue in work

Respondents were asked to identify three obstacles which may prevent an individual with an MSD from continuing in their work. These are shown in full below, grouped according to responses.

Nature of injury / Reduction in function

- Pain (12)
- Fitness to do the tasks
- Significant loss of function
- Physical limitation
- Symptoms
- Genuine dysfunction
- Physical capability to perform work duties
- Disability
- Loss of function
- Reduced range of movement or function
- Decreased function
- Loss of function limiting their ability to carry out their job.
- Injury itself
- Physical unsuitability of the employees for the post in which they are employed
- The need to be able to move about / rest / use ice packs regularly, to facilitate recovery.

Fear of aggravating the discomfort

- Fear of pain
- Fear of worsening the condition (5)
- Fear that the job will aggravate their condition
- Fear of re-injury
- Fear of re-injury or exacerbation of current problem
- Fear of further injury / Pain (Lack of understanding of their condition/ Symptoms)

- Fear of it getting worse with no understanding of the active treatment options available
- Anxiety about the effect of the injury on their daily lives/ long-term implications
- The belief that working whilst experiencing pain or discomfort will worsen the condition
- Extent of perceived disability by the person affected e.g. fear of 'damage'
- Ill perception of employee and employer of MSD status and safety to work - worried about re-injury
- Person's beliefs about their health problem and the impact of work.
- Employee perspective that they should rest, fear that they will do more damage.
- Belief that continued pain / reduced function experienced may be harmful / exacerbate problem
- Belief that they need NOT be pain free to work. Pain can be positive.
- Fear of injuring themselves further

Job aggravates symptoms

- The job aggravating the injury significantly--look at the process and see if it can be altered in anyway to keep the employee on his/ her own job
- Job role / duties exacerbating symptoms
- Inability to perform normal duties which do not aggravate condition
- Continuing to undertake tasks that will exacerbate the symptoms
- When the work activity is a clear aggravating factor for the employee's complaint.
- The work may be an aggravating factor.
- Condition exacerbated by work
- They are at risk of further injury
- Risk of further harm
- Aggravation of symptoms
- Exacerbation of the MSD
- Symptoms made worse by activities at work.
- Pain increased by work
- Work causing
- The disorder is clearly aggravated by work.

Nature of the work

- Prolonged activity (standing, sitting, manual handling)
- Work load
- Inability to carry out manual handling tasks fully
- Loss of capacity to fully perform and therefore unwilling to create potential working relationship problems and would rather stay off if does not feel fit to fully resume duties
- Manual job that would not allow a return to work to lighter duties
- Inability to perform duties
- They are unable to do their job
- Severity of condition and unstable pathology preventing employees from performing duties. However, the nature of the employment (e.g. heavy manual work or sedentary) will dictate those that are fit for work
- The nature of the job.
- Task demands
- Demands of job
- Type of work undertaken
- Shift pattern??

- Type of job they are doing
- Impact on pace of work
- No alternative role available (redeployment)
- A change of duties does not result in improved employee comfort.

Work pressures

- Pressure of work and also the hidden demands placed on the worker by the pressure of work and by ever increasing workloads being dictated by targets
- High workload
- Although may be on light duties this is difficult to monitor and stick to this, pressure on worker to undertake normal duties within work place if back in that environment.
- Difficulty with pacing their activity at work, feel pressured into returning to previous level of activity too soon.
- Fear of acknowledging they may have a problem - pressure from L Manager, job security etc
- Work pressure from production deadlines - problems if person not working to full capacity
- Understaffing of areas, which can create problems if on light duties.
- Workload levels and support from other staff

Fellow workers' support

- Lack of support from peers
- Relation with fellow workers
- Comments by peers about their lighter duties
- Peer pressure / management pressure to stay / continue with work
- Attitude of management and other staff to employee if lighter/alternative duties advisable.
- Support from colleagues with difficult tasks
- Over-relying on colleagues and therefore letting the team down.

Lack of suitable physical adjustments

- Equipment and status at work and pain relief
- Unadaptable environments and unsafe systems of work
- Environmental obstacles
- Lack of understanding by management of MSDs and how working environment and tasks may exacerbate them if not varied to accommodate.
- Environmental factors
- Insufficient resources for adapting the work environment
- Flexibility of employer to make alteration to working environment
- Ignorance as to how to adapt the work role or work place environment
- Work environment and nature of activities carried out during the working day
- Provision of suitable equipment when needed
- Lack of knowledge of aids / equipment that can be made available to assist earlier return to work
- Delays in implementing controls such as supplying adaptive equipment
- Alteration of equipment due to cost/ expertise to advise on the correct equipment e.g. workstation assessments/ chairs etc
- Lack of aids to support them being at work ie poor seating, no moving & handling equipment so have to continue manually assisting patients/clients to move
- Inappropriate/unsuitable equipment at workstation contributing/causing symptoms.

- Not enough equipment to reduce manual handling e.g. electric profiling beds, stair walkers for porters.
- Unable to adapt work around MSD
- Inappropriate working conditions
- No workplace adaptation
- Assessment not made to alleviate specific work related injuries e.g. work station assessment or ergonomic lifting advice.
- Provision of workplace modifications and rehabilitation
- A workplace that is not flexible and can adapt to the needs of the individual
- Ability of employer to adapt workplace - allow that person to be at work.

Lack of suitable adjustments to hours / duties

- Lack of opportunity for job relocation, employee would be expected to fulfil his / her normal role
- Inability to alter work temporarily to accommodate the individual
- A lack of suitable jobs to allow them to stay in work with a disability
- Lack of flexibility at work re tasks or work pattern
- Flexibility in changing tasks for a short period of time
- No flexibility in the role /duties in the position. Sometimes the tasks within the job may need modification or the employee requires different role for a period. Employers tend to resist this.
- Lack of flexible hours
- Lack of flexibility in the work place to enable the employee to undertake those tasks, which he is still able to complete but not those that cause or exacerbate the MSD
- Often inflexible workload - hours and duties
- Unable to reduce their work short term i.e. decrease hours and gradually return to increasing their hours.
- Flexibility with hours worked and provision of cover when not able to attend work
- reduction in hours that can be difficult for other members of the team
- Unable to alter hours of work
- Lack of management and HR to be flexible within the work organisation i.e. rehabilitation schemes, altered hours
- Alteration of duties to light / reduced hours
- Ability of employer to offer alternate work duties to meet employee physical need, e.g. lighter duties
- Employer acceptance of modified duties with a planned phased increase
- Rest breaks may need to be more frequent or ability to change duties. Position posture at work.
- Not offered lighter duties
- Lack of flexibility in allowing "light duties" for a limited period.
- Inability to change to lighter duties for a short period of time
- Inability to change job role / duties
- Unable to work on restricted duties only.
- Difficulty with a change in duties that can be cost effective for the employer
- Lack of control over activities
- Lack of opportunity to change activities in any way or working pattern
- Lack of job rotation
- Lack of flexibility within service to reduce or alter workload.

- Lack of alternative work which will not aggravate the condition
- Modifying working practices
- Understanding of modification of duty
- Working a full day
- Flexibility of work - i.e. can they work less or differently
- No modified duty programme
- Not being able to return to work on graded programme - devised by trained personnel
- Ability within the service for alternative work
- Type of alternative work available
- Flexible working
- Poor graduated return to work programmes
- Lack of support for introducing modification to working pattern
- Managers not implementing measures ie restrictions to support the employee to stay in work.
- Employees are not enabled to work within their capacity
- Enable to time manage within their capability
- Unable to alter caseload
- When the employee is expected to return to full work activities while still recovering from the MSD.
- Employees not happy to consider pacing activities, rather than prolonged in one position.
- Inflexibility of work pattern eg in the NHS, lighter work on a temporary basis is rarely an option. Either you are in work and working flat out or you have to be off.
- organisational factors incl. job design and manager/organisational attitudes/policies etc.

Lack of support from management

- Employer / Line managers' worries re damage / future damage if employee continues to work
- Lack of support (2)
- Lack of support from line manager
- Lack of understanding
- Lack of understanding of employer
- Employer /line managers beliefs about the injured persons health / capability.
- Manager attitude
- Inflexible line managers
- The employers are not flexible about phased return or change of tasks.
- Management support in allowing modifications at work
- An inability or unwillingness on the part of line management to provide the necessary resources and flexibility to allow the return of an employee where reduced capacity is expected
- Lack of employer / other assistance
- Manager objections/ lack of clarity of a co-ordinated approach involving key stakeholders in the process
- Poor support manager and colleges
- Lack of support from team leaders and colleagues
- Employer/manager support to do so
- Ethos of organisations not promoting a culture of continuing to work combined with rehabilitation, or this being viewed cynically by the work force

Lack of awareness among managers / employees of how to manage those with MSDs

- Poor education to the problem. If the employee doesn't know what is going on, why they are in pain and how it will resolve or blames the job for the problem they won't want to go back to work. Let's be honest, none of us would.
- Lack of understanding of the repair process and MSD management re fitness to work. How to be safe with a repairing injury and still be at work with some effort to do as much of the job as possible.
- Provision of evidence based support for the injured person
- Public knowledge.
- Employees not having support information on how to manage their conditions
- Lack of knowledge re "diagnosis"
- Under the illusion that passive care e.g. rest will cure the problem
- Lack of understanding of the conditions involved
- Lack of understanding of the variety and nature of MSD conditions
- Assumptions surrounding functional capabilities
- Lack of management understanding of the need for these programmes, and the long term benefits
- Lack of knowledge by employers - sickline mentality
- Managers attitude to injured employees and medical restrictions--some managers don't have the knowledge to manage medical issues and therefore don't know what to do with them, so they prefer them to be off work.
- Manager understanding that they can be lateral in their way of working or how they see the job being done.

Lack of appropriate, timely advice / treatment

- Non-recognition of a problem
- Access to treatment, which should be timely
- Lack of appropriate treatment
- Lack of access to a physiotherapy programme
- Lack of access to therapy/rehabilitation services
- A lack of such an MSD programme to rehabilitate the injured worker
- Lack of access to appropriate health services for an opinion, guidance, treatment and rehabilitation
- Lack of on-site therapy services.
- Lack of treatment - waiting lists for appointments and treatment - doctors don't tend to recommend complementary therapies.
- Poor access often to support services.
- Lack of access to early advice from an occupational physiotherapist
- Late referrals to physio
- Time lapse before a proper assessment and diagnosis can be made
- Long waiting times to see community physio
- Problem being left unattended for too long
- There is a culture of being signed off in the UK. GPs sign people off until they are ready to return to full duties - not helpful. If assessment/'treatment' is not available to the employee they will go to the GP to get signed off.
- Lack of access to appropriate advice to remain functional while not causing further damage
- Company may lack resources to have dedicated someone such as OH to 'manage' and support the employee experiencing work instability

- Lack of OH knowledge in the NHS (in general).
- On site management of MSDs will enable them to remain at work
- Lack of communication between the stakeholders

GP advice

- The Med 3 (sick note) Employer/employee accept the recommendations without question. Treating medics do not have knowledge of OH
- Employer attitude - GP too ready to sign off
- Advice from HCPs / GPs to desist from 'anything that increases your pain'
- The GP signs them off without discussing what they could continue to do
- GP's giving Med 3 too readily
- The GP that signs the sick note
- GP sick notes
- G.P. sick note of extended absence i.e. >10 days
- General practitioners giving Med 3 certificates without considering the DWP advice re. same.

Time off for treatment not granted

- Difficulty having time off for treatment. One off hospital appointments can be ok, but a series of therapy appointments will often not be tolerated.
- Support from line manager for time to attend treatment sessions or undertake exercises whilst at work
- Time for treatment
- Time, for appointments.
- Lack of support from line managers to attend such a programme

Money / Litigation

- Salary
- Money
- Benefit system
- Financial constraints
- Worry that might be reassigned to lower paid work
- The unwillingness of the employee to take part in the return to work programme if this means reduced paid hours or a lower paid role
- Company sickness absence pay. Too easy to go off sick.
- Pending litigation
- Legal standing
- Litigation, employees perceive that they should have time to strengthen claims. Employers worry about litigation of allowing some-one with a MSD to work.
- Insurance - competency to work when injured
- Increased employer liability

Individual psychological barriers

- Worried about not being able to carry out full duties
- Worried about having to be 'carried' by other staff
- Psychological factors ie fear of reinjury, fear of how other people will see them.
- Psychological overlay
- Personal psychosocial factors (3)

- They do not want to work – psychosocial issues outweigh any others!
- Apathy from employee to make changes in their working habits to help with their problem
- Employee reluctance
- The employee dislikes the job and seizes an opportunity to avoid it or change direction
- When the employee's attitude towards his work is negative.
- Employee's own attitude to illness and work (3)
- Enjoyment of job
- Motivation
- Feeling unsupported in work environment
- Catastrophising personalities
- Worry that disclosure might lead to a loss of a job
- Unhappy as not fully fit and poor team/working environment/support
- Feeling unable to carry out all the required duties and feelings of guilt/ anger/ inadequacy/ not being understood associated with this

Individual's attitude to their MSD

- Patient / employee attitude to work related MSD. Expectation to go off sick.
- Individuals who do not think they should be at work.
- The perception that rest is the best cure
- Lack of understanding of individual regarding MSDs.
- Lack of knowledge about their injury/healing process/things that aggravate or ease the pain
- Will to do so from the employee and the sick note system where the person needs to be 100% fit. Rubbish - there will be something they can do to contribute to the tasks.
- Home situation

Adoption of good practice by employee

- Poor implementation of manual handling training
- Younger employees more inclined to practice poor posture.
- The build up of incorrect movement patterns
- Individual suffering MSD failing notify line manager of early symptoms making recovery longer. Failure to adopt good postures / adhere to advice
- Employee not: asking/knowing it can be an option
- They put other staff/patients at risk

Travel to work

- Mobility
- The travel to work may be an aggravating factor.

Other

- Health and safety
- Safety at work is endangered.
- Fear of breaking health and safety rules
- Legal cover/ responsibility if any further injury occurs by organisation
- Job V Tasks i.e. joiner
- Sorry - can't seem to get my head round what you're asking here. If someone is continuing to work, surely there can't be many obvious obstacles.....can there?
- Silly Question you are either fit or you are not

- Employer not:
- Working within a culture of promoting of healthy lifestyles in terms of physical and psychological well being
- Information and training of all people involved
- Retraining in situ is not given
- Ability to have on site workplace assessments
- Disability management
- Effective pain management
- Stigma attached to MSD caused by work - 'compensationitis'
- Communication

10. Obstacles to return to work

Respondents were asked to identify three obstacles which may prevent an individual absent with an MSD from returning to work. These reasons are shown below, grouped according to the nature of the reason.

Nature of injury

- Pain (3 respondents)
- Pain still being experienced
- Injury itself
- The nature of the injury i.e. type and severity (2)
- Where plaster of paris, or surgery has been used for tenosynovitis rehabilitation is often problematic. The limb is probably out of tone and more prone to further injury.
- Employees not having support information on how to manage their conditions
- Still unable to perform duties
- Dysfunction of activities of normal daily living
- Patient ignorance. They sometimes return to work too early, before they are strong enough.
- The nature that symptoms come and go and are independent of sigal factors - understanding their problem in a multi-factorial perspective
- The need to be able to move about / rest / use ice packs regularly, to facilitate recovery.
- Genuine dysfunction
- Severity of condition and unstable pathology preventing employees from performing duties. However, the nature of the employment (e.g. heavy manual work or sedentary) will dictate those that are fit for work
- Continued physical dysfunction / a flare up of the MSD problem
- Condition may worsen

Reduction in function

- Medicalisation
- Loss of function
- That they have deteriorated physically and psychologically.
- Reduced strength
- Musculoskeletal deconditioning

- Deconditioning
- Getting used to increased function again
- Incomplete recovery leading to loss of fitness for work
- Fitness to do the tasks
- Lack of fitness
- Physical unsuitability of the employees for the post in which they are employed
- Temporary increase in pain

Fear of recurrence / failure

- Fear of re-injury (4)
- Again, fear that they have to be 100% fully recovered to manage rtw - could re-injure
- Fear of recurrence of problems (4)
- Fear of aggravation of the condition (3)
- Fear of recurrence or worsening of the condition now that it's beginning to improve.
- Employee is afraid of re-aggravating and feels work will do that. Especially if no gradual reintroduction of duties
- Risk of further injury
- Risk of recurrence of MSD
- Fear that the employee may hurt their back (employee's and manager's perception)
- Depends on length of absence but there may be a fear of making the pain worse.
- Concern with regard to recurrence of symptoms and return to same tasks that they perceive caused the initial symptoms
- Self perception that re-injury will occur
- Fear of activities at work aggravating the injury
- Frightened work activities may exacerbate their problem
- not sure how well they have recovered- fear of doing it again
- Don't want the problem / pain to return
- They are fearful of the pain
- Fear regarding recurrence of pain (of employee, employer, GP / HSP)
- Fear of returning problems as conditions of cause if from work related issue are not changed prior to return
- Lack of change to the job so that employee worried about recurrence
- Will return to work continue to cause problems?
- If the employee is apprehensive about returning to work and fears a recurrence due to lack of confidence or still remaining symptoms.
- Fear of having to take more time off (2)
- Fear of failure on the part of the employee and fear that the workload will not be completed in a productive manner from the employer perspective
- Risk of problem reoccurring as work is a cause, but patient unwilling to change how they work, or postures
- Fear

- Anxiety
- Fear of not being able to cope - physically or emotionally
- Concern that may not be able to cope with workload
- Fear of victimisation
- Fear avoidance behaviours
- Employees worried about protecting themselves i.e. client fit/not fit.

Nature of the work

- Type of work undertaken (2)
- Tasks associated with work (2)
- The job
- Duties at work that cause/aggravate symptoms: alternative tasks need to be offered to employee.
- The work may be an aggravating factor.
- Integrating back into the work force and ability to perform tasks required.
- Inability to carry out fully duties that involve full manual handling duties
- Work environment and nature of activities carried out during the working day
- The disorder is clearly aggravated by work.
- A change of duties does not result in improved employee comfort.

Work pressures

- Work pressure from production deadlines - problems if person not working to full capacity
- Culture of long hours in manufacturing industry
- Backlog of work
- Lack of staffing
- Leaner organisations

Lack of suitable physical adjustments

- Lack of understanding of what any precise limitations may be. 'Light work' can sometimes turn out to require the precise movements that one would need to avoid.
- Inappropriate equipment/workstation set-up, i.e. same equipment for all employees, irrespective of specific needs.
- Being unable to implement recommended controls such as specific equipment / chairs etc until they return
- No workplace adaptation
- Type of alternative work available
- Unable to accommodate restrictions / adjustments / redeployment
- Equipment and status at work and pain relief
- Lack of opportunity for job relocation, employee would be expected to fulfil his her normal role

- Workplace culture leading to poor implementation/adaptation of the recommendations made arising out of a work risk assessment
- Provision of workplace modifications and rehabilitation
- Lack of ergonomic tools to facilitate return to work
- Direct return to full manual handling duties
- Lack of information and training
- The company hasn't helped them solve the problem
- Ignorance as to how to adapt the work role or work place environment
- Health and safety
- Equipment
- Workplace issues incl. environment and job design constraints
- Adaptations in the workplace
- Workplace modifications not considered to facilitate return.
- Lack of addressing the cause of the injury, lack of strengthening residual weaknesses or addressing ergonomic/postural issues

Lack of suitable adjustments to hours / duties

- The employer is unable or unwilling to make modifications to duties or hours and accommodate a phased return to work
- Flexible working
- The employers are not flexible about phased return or change of tasks.
- No paced / phased return
- Light work / tasks available
- Lack of alteration of the job
- Inability to plan a phased system of return
- Lack of flexibility in modifying task
- No alternative role available (redeployment)
- Employers allowing return to work to include graded increase in hours and/or duties
- Flexibility enabling some tasks to be done
- Amount of hours
- Lack of flexibility of duties, i.e. graduated return to full duties or employ
- Inflexible patterns of work
- Initial full shift being too long.
- Lack of ability to Pace return.
- Unadaptable work environments and systems of work
- Returning to an inflexible environment
- light duties not available
- Lack of flexibility in the work place re: tasks undertaken
- Unable to modify tasks related to work
- Ability of employer to offer alternate work duties to meet employee physical need, e.g. phase return / light duties

- Flexibility of hours
- Flexibility our duties to allow lighter load
- lack of phased return to work
- They are expected to resume at full pace in a physically active job
- Managerial support start gently build up.
- No return to work policy to support gradual return to normal duties
- Inability to go back part-time or on light duties
- Lack of flexibility of work organisation to accommodate individual difficulties
- Flexibility to accommodate a graded return to work for absent employee.
- Lack of understanding of phased return
- Unable to re-enter work as phased return
- Unable to alter hours of work
- Inflexibility on behalf of the manager e.g. to flexible working
- Difficulty with pacing their activity at work, feel pressured into returning to previous level of activity too soon.
- Lack of support from managers allowing paid phased return to work
- Disability management
- Induction programme for graduated return to full duties often not done
- Lack of flexibility within service to reduce or alter workload.
- Expectation that the worker can pick up just where they finished
- Employers refusing graded return or specifying rigid protocols
- Facilities for working within the limits of the conditioning
- Lack of understanding from the line manager that the worker needs a period of adjustment to fully integrate back into the working arena and to adjust to the changes that may have taken place during their absence
- GP / employee reluctance
- GP sick notes

Lack of suitable rehabilitation programmes

- Lack of rehabilitation programmes / modified duties for a phased return to work
- Management commitment to rehabilitation.
- Lack of a rehabilitation programme prior to return and in the work place
- Cultural difficulties in individuals where the programmes are designed based on English speaking secular systems. Absence is greater in our industries for young Muslim males. Programme may not address their needs.
- Lack of rehabilitation

Needing to be 100% fit before returning

- Expectation of 100% fitness/ pain free or should not be at work (5)
- Not having the opportunity to have a phased return at full pay.
- Not possible to return to gradual level of work

- Lack of opportunities/support from management and other colleagues. E.g. not wishing employee to return unless 100% fit.
- Unable to work on restricted duties only.
- The leap in activity demand from being off to returning to normal duties.
- Once back at work all or nothing
- Lack of access to a phased return
- Flexibility enabling graduated return to work / part time
- Lack of opportunities for phased return due to understaffing.
- Lack of a staged return
- Employer demanding ability to carry out all normal duties.
- Employers refusing to allow staff back unless they are 100%
- Employer and GP wanting the employee to be 100% before returning.
- Employees saying either fit for work or not fit, not happy to change person's job /intersperse with other job.
- Expectation that the employee will not have a graduated return to work duties and condition will return
- If the employee is expected to return to full work duties while still recovering from the MSD.

Lack of awareness of how to manage those with MSDs

- Lack of management understanding of return to work programmes and the need to restrict/reduce work activities
- Lack of awareness by employer and/or employee as to how best to manage symptoms effectively
- lack of RTW protocols
- Employer doesn't support return to work program / flexible hours

Lack of support from management

- Managers' attitude (2)
- Management Support
- Lack of support
- Unsupportive line manager approach
- Lack of support from line manager (2)
- Lack of management support
- Lack of understanding of the issues by the employer
- Lack of understanding of problems/ issues from Management
- Managers/employers attitude
- Lack of support for returning employee
- Unsympathetic employer - if time is not given to attend physiotherapy then employee may well seek to be signed off sick in order to attend appointments.
- If the employer is not sympathetic towards the employee.
- Lack of appropriate advice to them and supervisor.

- Support from line manager in allowing flexible working and modifications
- Managers not implementing measures ie restrictions to support the employee to stay in work.
- Hostile environment at work. May be inter-employee or employee-employer
- Inflexible management
- Employer attitude / policies / flexibility
- Harsh, non-sympathetic employers throwing them back in to the deep-end of their job with no phasing in
- Lack of support for a graded return to work e.g. by Manager and associated difficulty in evaluating fitness to work
- Employer reluctant
- Line managers and other colleagues not cooperating with above
- Employer not:
- Lack of support from employer
- Manager and organisational attitude and policy/procedure but at a very local level (interpersonal relationship of line manager and individual extremely imp.)
- Initiating and keeping contact with those on sick
- The employer has not kept in touch while they are off so they feel they are not wanted back
- Is my employer going to be supportive to my needs?
- Work managers' involvement and understanding of their MSD and their involvement in the return to work program.
- Poor communication with the workplace. Threatening contact from management or none at all can result in avoidance of return, where an encouraging and non accusatory approach with perhaps an informal meeting to discuss how return will be managed is more likely to result in early return to work.
- Manager not thinking laterally
- Employers understanding about the MSD and the job
- Unsure if wanted to return by employer if it has been a long absence
- Belief that manager may not really believe them / support them

General management issues

- Decreased awareness of return to work policy
- A lack of all resources, time, money, human and knowledge
- Ongoing support for the employee
- Lack of preparation and planning by management for their return.
- Communication between manager - employee
- Employers not having good communication with long term sick or planning any graded return or assessment.

Worker psychological barriers / loss of confidence

- Psychosocial factors (3)
- Psychological overlay

- Employee attitude to the problem (3)
- The longer a person is away from work, the harder it is for them to return. I think some psychological barriers develop
- Apathy of behalf of employees in making progress before they return to work
- Employee maintaining sick role
- Lack of motivation
- They do not want to work- psychosocial issues outweigh any others!
- Psychological i.e. no want to return back to work.
- Desire to work
- Unwillingness to return to work.
- Social isolation
- Length of time off
- They are malingerers?
- Lost the discipline of work
- Loss of confidence that they can manage the job (3)
- Low opinion of self and/or job satisfaction.
- Lack of confidence on employee's part at coping with work, especially if skills may have been lost if it is a long absence.
- Individual's beliefs regarding cause
- Person's belief about their MSD and the relationship with work
- Unsure of able to cope with (unchanged) existing job
- Concerns about not being able to pull their weight
- Fear of comments by peers and uncertainty about whether they are fit enough to return
- Lack of opportunities / satisfaction at work

Lack of appropriate, timely advice

- Late or non referral to OH departments to obtain timely advice on managing MSDs
- Not enough OH staff to access
- Poor management / access to OH
- Access to hospital treatment
- No OH service to support structured return to work.
- Difficulties for OH / HR engaging GPs in RTW programmes
- These days, GP's do not provide much incentive to their patients in terms of returning to work. They would rather the patient stay off work than risk sending them back too soon.
- GP signing staff off for extended periods whilst some time off can allow limited recovery becoming sedentary will prolong recovery process further.
- GP lack of knowledge, signing further med 3's
- The Med 3 (sick note) Employer/employee accept the recommendations without question. Treating medics do not have knowledge of OH
- The ease with which GP's will sign a sick note with no appropriate assessment of the problem and on occasions little or no knowledge of the management of the condition

- GP Advice - sick note - date of expected RTW
- Misinterpretation of occupational health advice, poorly explained advice.
- Lack of or poor case management by both the medical services and the workplace
- Lack of co-ordination amongst all involved around the return to work package
- Lack of communication between employee, manager, HR and occupational health
- Co-ordination - no regular case studies
- Poor links between therapy services, and employers and job centres
- Poor support structure from the medical health services
- Access to treatment
- Waiting time to see health professional
- Early physio referrals
- Lack of resources nationally to support active return to work programmes including rehab.
- Lack of awareness of what can be done to help
- If an employee wishes to pursue a compensation claim for damages, the longer they are off work the better their chances. We know that some 'no win, no fee' organisations discourage their clients from returning back to work for as long as possible

Fellow workers' support

- Lack of support from colleagues (3)
- Fellow workers not understanding the requirement to return people to work gradually or with light duties.
- Peer pressure - not sympathetic to someone who is only partially fit
- Level of esteem by colleagues /line managers!
- Lack of understanding of MSD by fellow employees & employers
- Lack of empathy from their colleagues who expect them to be able to undertake all their normal duties and therefore do not allow them to work to advised restrictions
- Workload levels and support from other staff
- Over relying on colleagues to carry out their work

Travel to work

- Mobility
- The travel to work may be an aggravating factor.
- Difficulty in getting there

Money / on-going claim

- Money
- Financial constraints
- Sick pay entitlement
- Poor motivation to return to full time work particularly if been on absence with full sick pay.
- Financial incentive of returning to work in a graded fashion that doesn't compromise income

- Graded return to work programmes that leave the employee financially worse off than having full-time sick pay, or that require the employee to use annual leave to cover their absence during a period of graded return (this is my experience as an NHS employee)
- Often get paid for hours worked on return - less than usual wage
- If on benefits - and better off on benefits
- They have discovered they may not be so financially worse off.
- Fear of large expense in the future, if the patient has more time off work
- Long term absence and time away from the workplace helps substantiate a compensation claim.
- Employer liability if employee not fully ready to return to work
- An industrial claim
- Depends on length of absence, but adopting 'sick role' ?claims
- Pending litigation
- Litigation

Other

- Job availability
- The employee may have settled in a new domestic routine
- Anger with work situation
- Time to evaluate direction of their life
- Ambiguity of deciding if they are physically fit.
- Lack of understanding of individual regarding MSDs.
- Lack of understanding of the injury/healing process/activities that will hinder/improve the healing process
- Lack of employer / other assistance, and motivation
- Cultural acceptance that injury=disability/dysfunction. This follows from a state in which it is seen as acceptable that the patient remains sick due to a medical label
- Employee not: asking/knowing it can be an option
- Length of absence would determine style of RTW programme ie graded FT or PT
- Length of time of absence (as per Faculty of Occupational Medicine Guidelines on Management of Low Back Pain)
- Safety at work is endangered.

9. Obstacles encountered with running these programmes

Respondents were asked to identify any problems they had encountered when setting up or running their rehab programme. The results are shown in Figure 7.

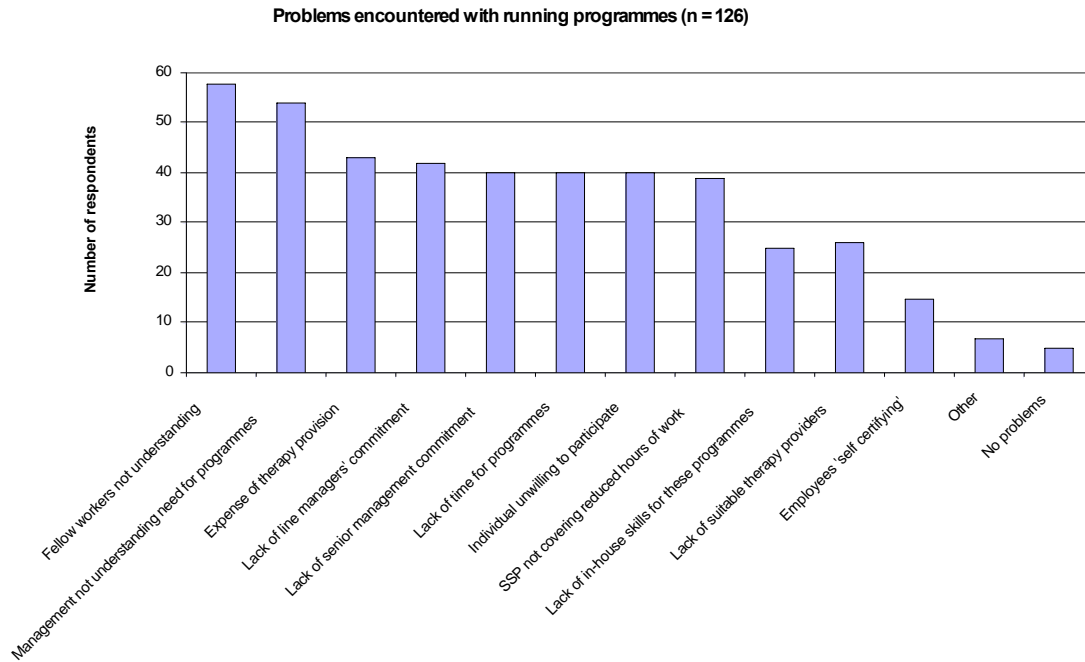


Figure 7: Problems encountered with running rehabilitation programmes

Other reasons listed were:

- A mixture of all the above have been experienced over the years with different patients from different employment backgrounds.
- I would anticipate all of those at some time!
- demand for therapy exceeding the capacity
- Difficulties in getting specific equipment for that individual's health needs.
- Occasional delayed referral by manager and unfounded belief that there are no light duties in certain work areas
- Employees understanding of role of programme
- G.P. extended sick note cover i.e. 4 weeks for LBP, 2. Managers do not see all benefits of programmes only obstacles
- Lack of understanding of 24 hour lifestyle
- misguided belief that the NHS will solve the problem for the employer
- Not considered
- Poor OH service
- Restricted access programme (WRI only) and reluctance to take a proactive approach
- Risk of the employee suing if they sustain a recurrence or other injury whilst at work.
- Waiting lists
- Telephone case management can be a very cost effective means to manage MSDs

Those who reported that they had not encountered any problems were those who had not run these programmes.

10. Most important benefits of these programmes

Respondents were able to select the three most important benefits arising from these programmes. These are shown in Figure 8.

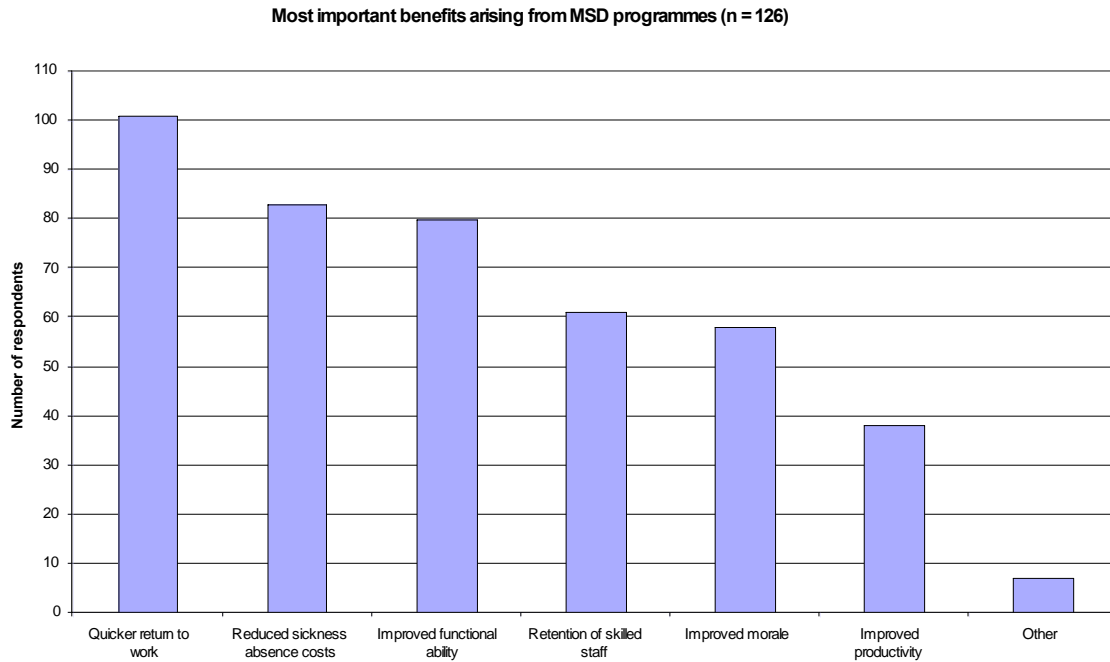


Figure 8: Most important benefits arising from these programmes

The other benefits listed as arising from the programmes were:

- Also keeping staff in work reduces absence costs - the majority are not off sick but have reduced capacity
- Avoid absence altogether
- Cost effective
- Feel good factor knowing that the employer is actively taking an interest in the employees problems
- Knowledge gained from chiropractor, is passed to the whole family, and friends.
- Less people being off work
- Minimal lost time.
- Prevention of chronicity and if possible avoidance of sick leave
- Reduced claims keep insurance costs down
- Reduced insurance premiums - EL and PMI
- Reduction in conflict in management approach
- The occupational health team will feel valued not seen as tyrants.

11. Further comments

Respondents were invited to add any further comments (Qu 25). Relevant comments received are shown.

- Often the employee disagrees with the type of therapy and feels that they need something else or much more of it. At the risk of sounding cynical, I can compare the increase in the UK claim culture with the rise in MSD problems.
- Employees contributing to cost of therapy - ask was it caused by work.
- One company, but areas of work/expertise contracted out: OH service separate contracted service, OH nurses are individual contractors, equipment providers and facilities are another different company.

- Requires commitment from management. I still hear managers saying people are 'wimps' because they complain about pain
- Support needs to come from within the organisation. It needs co-operation from a variety of departments. It is not an issue for Occ health to deal with alone.
- We are looking at setting up a MSD steering group to pull together in house occupational health advisers, physicians and physiotherapists to look at best practice methodology. We need to review HSE Back Pain study and Stress and MSD study to ensure we are considering research based methods.
- If someone approaches me with the possibility of potential MSD, I immediately speak with the line manager and we pretty quickly look at the job specs. Job rotation is implemented wherever possible after we become aware of the circumstances so that the employee has a break from the particular job tasks that may have initiated the problem. Regular follow-up allows me to refer to physio asap if necessary. Moreover if it is a DSE MSD I will do a full assessment of the particular workstation followed up by a full report.
- Within manufacturing environments where tasks are by nature very repetitive there is a high incidence of MSD's therefore it is important to provide adequate support and assistance to employees to minimise any risk of symptoms occurring. This will be beneficial to both the individual and the business. From experience the programmes are very successful and have a positive effect on the employee and their perception of the business.
- Our programme started as a pilot scheme and has evolved into a longer term commitment but there are still issues with the cost and who should attend. If provision of this type of service became an accepted part of managing absence and the cost was perhaps covered by some type of insurance then it would be more likely to be accepted by individuals and organisations. Hopefully seen as a benefit to the individual and not just as a cost benefit for the organisation.
- GPs remain the largest group of practitioners consulted for MSDs. Yet, they do not seem to discuss all the options open to the patient for the treatment of their MSD. This often leads to delays for the most effective treatment to be provided to the patient. Effective triage and early referral of non responsive cases are essential.
- Programmes in the workplace should include the workers responsibility to the employer and to themselves. When it is clear that the worker has had no responsibility to themselves or their employer then the costs will totally lay with the employee.
- Find out what works best for other companies before you pay out lots of time / money?
- There should be a holistic focus on the management of MSD and not just on the physical symptoms and work environment. The organisations need to change their attitudes to sickness absence management and rehab generally. MSD treatment should include CBT and goal setting amongst the physical interventions. There is a well established between MSD and stress. Private and public groups should work in a more synergistic fashion to ensure the smooth transition between services to help someone with an MSD issue.
- When programmes are available staff feel valued and part of the organisation. Have a feeling of being looked after. Staff need the opportunity to discuss issues / concerns with someone outside of their immediate working environment.
- A lack of pre/ post outcome measures significantly hinders the ability to evaluate the service on a cost/benefit basis. I suspect this is how the majority of employers will evaluate the success of the programme.
- It is expensive to routinely refer for treatment if it isn't required. This should be provided only if cost effective (e.g. long NHS waiting list, employee on high wage or highly skilled and difficult to replace, employee is committed and wants to return to work).
- The key is prevention through good H+S / Ergs but early identification systems must be in place so that any problems can be managed asap to prevent any sickness absence.
- Programmes need to address the individual's needs.

- In conjunction with ergonomic advice employees benefit from an education programme to teach them how to use themselves at work - posture / movement
- The programme should consider ergonomics as a whole and not just to manage an individual. This should be considered at the design stage
- Dependant on compliance of individual
- Think that conceptually and practically people with MSDs, may well present or consider themselves within a biomedical model, therefore may miss out large % of people (whether patients, employers, long term IB claimants) who will not access occupational / work based services.
- No national policy or funding therefore ad hoc provision - variable standards, variable outcomes. Need to develop a national network of service providers working to a national agreed standard with a proper funding programme.
- The experience of the pilot programmes run by the Department of Work and Pensions is showing positive outcomes and the potential to significantly reduce the cost of benefits and ensure a persons ability to return to work and become an fully active citizen at work and in their communities again
- Re-education to prevent re-injury
- Within our area of work staff away with MSD is minimal
- In the NHS we have specialist musculoskeletal physiotherapists who treat a range of MSDs and our working lives are dedicated to restoring and optimising function. Therefore this questionnaire rather states the obvious! If more funding was available, waiting lists would be shorter and the physiotherapy service could improve its management of patients by not allowing acute conditions to become chronic. Long waiting lists promote chronicity so employees of other organisation may not benefit from the intervention several months later. Therefore - more funding required for NHS physiotherapists.
- Active exercise classes to keep people moving regularly and routine ergonomic assessments may assist in preventing some MSDs from occurring
- Managers should encourage employees self-referral to physio at an early stage.
- Answering as a case management service. We have an early intervention programme to assist employers return injured employees back to work, the majority of which are MSD type injuries. Prog = 'employee care'
- As a Senior Physiotherapist working in the NHS we currently see staff as an adjunct to the out-patient service. This is not official so tends to happen on an ad hoc basis. I have advised managers on the benefits (as highlighted above)to the organisation of having a separate staff MSD clinic which would lead on return to work initiatives for MSD and therefore being an active part of the organisations objective to help reduce sickness and absence. At the moment without extra funding we have no capacity to set this up -therefore we have no 'official' return to work programmes other than seeing staff who are referred to us with MSD's as soon as is possible and offering assessment and treatment as is appropriate.
- We are presently auditing our staff physiotherapy service and at the interim report (6 months into the pilot) 78% of those discharged completed a satisfaction questionnaire; of those 79% had been able to continue at work, 84% stating that physio intervention had enabled them to do this, of the 21% who were on sick leave, 87% had returned to work 65% of these attributing it to physio intervention.
- I work in the NHS (spinal pain) so am not specifically involved at the occupational health level. Within my role however, I routinely explore work issues and facilitate the individual to address these. We have a rehabilitation service for people with persisting pain related disability. One of our programmes has a specific work focus.
- We are a small service and offer a service to the staff at West London mental health trust. Staff have experienced MSD's through the nature of their work especially when undertaking control and restraint techniques with mental health patients. We are funded through the

occupational health department to provide physiotherapy across the whole trust ie on more than one site for all members of staff as part of our duties as a physiotherapy department.

- Any approach should be multi professional. Include Cognitive Behaviour, good thorough assessment and explanation of symptoms by correct professional with adequate experience.
- There needs to be a coordinated plan between all the involved parties. It tends to be fragmented at present.
- Lack of awareness of habitual movement: 2 factors - the environment and how we behave in the environment.
- Get a good team together and it's difficult to get going but then it's a doddle
- Difficulties in convincing management benefits of permanent changes to work organisation to allow staff with LTC to remain in employment despite significant reduction in sickness absence compared with staff with non LTC
- The programme we have here is a back pain rehabilitation programme run by physiotherapists for a whole variety of back pain. We are in the process of auditing it but are not collecting data on cost effectiveness, or returning to work.
- Our organisation has been providing return to work focused rehabilitation programmes for people with MSD's for over five years. We have gained experience in assisting both public sector and private sector as well as Insurers and DWP in helping MSD sufferers return to work. If the evidence is applied then they are effective clinically however the real challenge is in overcoming the reintegration barriers that exist in returning a person to work.

APPENDIX 3

MODEL FOR COST-EFFECTIVE MANAGEMENT OF MSDs IN THE WORKPLACE

Staying active: A guide for employers on case management for musculoskeletal disorders

Contents

1.	Introduction	A3
1.1	This approach is suitable for all organisations	A3
1.2	Dispelling myths	A3
2.	Messages for managers: Why you should do something for employees with MSDs	A6
2.1	Is it a problem for me?	A6
2.2	Why should I do something about it?	A6
2.3	Are there effective solutions?	A6
2.4	What should I do?	A6
3.	Definitions and key concepts	A8
3.1	Definitions	A8
3.2	Key concepts	A9
4.	How to case manage MSDs	A13
4.1	Overview	A13
4.2	Create the right culture	A14
4.3	Manage those with MSDs	A16
4.4	Manage the Return to Work (RTW)	A18
4.5	Monitor and review the programme effectiveness	A19
5.	What those involved with the management of MSDs can do	A20
5.1	Overview	A20
5.2	Individuals	A23
5.3	Colleagues	A24
5.4	Employer	A24
5.5	Healthcare provider	A25
5.6	Case manager	A25
5.7	Manage expectations in the individual and employer	A26
6.	Helping individuals return to work	A27
6.1	Overview	A29
6.2	Informed best practice for helping individuals Return to Work	A29
6.3	Key steps in helping employees Return to Work	A30
6.4	Return to Work (RTW) Plans	A31
6.5	Key features of a RTW plan	A31
6.6	How to help those who are absent for longer periods	A31
7.	Summary	A33
	Appendix A: Policies and procedures	A34
	Policies and procedures content	A34
	Example Policy for Managing Musculoskeletal Disorders	A35
	Appendix B: Points to consider when setting up a programme	A34

1. Introduction

The workplace has witnessed significant transformation over recent years. Work demands and tasks have changed for many people and work related health problems have also changed. Currently, the health problems that lead to the most lost time from work are musculoskeletal disorders (MSDs) and stress related illnesses. The vast majority of these common health problems are resolved quickly and the worker stays at work or returns successfully to their job quickly. However, a significant minority of workers do not achieve this outcome. There are economic benefits for employees, employers and the NHS if suitable rehabilitation and return to work support is offered to employees with MSDs. An evidence based case management model has been developed to assist employers, healthcare providers and others involved in the management of those with MSDs in helping them stay in or return to work.

The most important thing that an organisation can do is understand that the most effective method to manage musculoskeletal problems is for the individual to maintain activity, and try and stay in work with temporary modifications to the work when required.

The model contains justification for managers of the approach outlined (Section 2); definition of the key concepts in this area (Section 3); followed by an overview of the key components of a successful management programme for workplace MSDs (Section 4). The steps are expanded in Section 5 which provides detail of the management of those with MSDs, with a timeframe within which different actions should be taken, and by whom. It details the key messages for each group of people involved in the management of those with MSDs (individual, colleagues, employer / line manager, healthcare provider and case manager), and the actions they can take. Section 6 focuses in more detail on the actions to be taken to help those who are absent return to work.

1.1 This approach is suitable for all organisations

For some organisations the concept of case management will be new; however, the principles are straight forward to apply, and good managers may be applying the some key principles already. The approach outlined in this model can be applied whatever the size of the organisation and whatever stage the organisation is at in managing the MSDs. The principles are the same whether the organisation manages MSDs themselves or uses an external service provider to manage cases. The model outlines an approach which all organisations are encouraged to adopt.

1.2 Dispelling myths

The myths surrounding the Return to Work (RTW) process are pervasive and need to be dispelled as they create unhelpful attitudes and behaviours. The most common myths and the evidence-based reality are shown in the boxes.

Return to Work myths and why they are not true

Myth 1: 100% or nothing

Myth = Workers must be able to do 100% of their job or should be 100% fit / pain free before going back to work

Reality = People can, and do, work before they are 100% recovered; many people with MSDs do not take time off work. Functional ability is regained gradually – being at work can help that process.

Myth 2: Risk of re-injury

Myth = Workers who come back to work risk re-injury and have a longer absence / bigger claim.

Reality = This is anecdotal; there is no evidence that returning to work increases the risk of re-injury; in fact, early return to work can be therapeutic, and tends to reduce the risk of long term incapacity. In most circumstances work is beneficial for general health and well-being, which can aid recovery.

Myth 3: It's not my problem

Myth = Healthcare providers, not employers, are responsible for getting the worker back to work.

Reality = A cooperative, integrated approach is needed, with all players (i.e. employee, employer, healthcare provider etc) involved.

Myth 4: Light duties

Myth = Workers must be given 'light duties' on return to work.

Reality = So-called 'light duties' are often not needed – many people can and do return to their normal job. However some will find that too taxing and can be helped to get back by simple modification to their normal job (e.g. reduced hours, longer breaks or help with heavy tasks). Modified work should be seen as transitional work arrangements with the sole purpose of helping the worker get back to normal work as soon as possible, building up to normal tasks over short set period of time (e.g. a week or two). The need for modified work and its precise form must be discussed and agreed between the worker, line manager, and co-workers (perhaps with input from the health professional).

Note: The concept of 'light duties' often causes confusion and problems. Many employers deny that they have light duties available. This illustrates a misunderstanding of the whole idea. It is generally not a matter of finding something different for the individual to do, rather making modifications to their normal job. Crucially, it is a temporary situation, simply to help build them back to normal work. All too commonly modified work is used in an unlimited fashion and poorly managed – workers get stuck in their modified role and never get back to their previous work. It is essential to monitor the situation and incorporate a progression back to normal. Importantly, the need for modified work does not signify that the work was damaging in the first place (assuming appropriate risk assessments and controls have been implemented) – it simply reflects the difficulty someone with a musculoskeletal disorder may have with some work tasks. Think of it this way: "*Work should be comfortable when we are well and accommodating when we are ill*" (Hadler 1997).

Myth 5: A GP sick note means the worker cannot work

Myth = A GP sickness certificate means that the employee can't work in any capacity.

Reality = A sick note is the means for entitlement to Statutory Sick Pay; it is not an obligation for the individual to be off work. Through consultation, the employer, the individual and the GP together can decide that the individual is indeed capable of work (with temporary modifications if necessary). The sick note can be actually used as a 'fit' note – the doctor can state what the individual can do rather than what they can't.

Myth 6: People with pain want to stay off as long as possible

Myth = Workers will always want to stay off work as long as possible (i.e. that those with MSDs are malingerers).

Reality = There is no evidence that this is the case. Most people want to get back to work as fast as possible, and steps taken by the organisation to support this are welcomed by the individual.

Myth 7: You shouldn't contact people who are off sick

Myth = The employer should not contact an individual who is absent, since it will be seen as harassment and it will have a detrimental effect on the individual's health; total disengagement from work is needed to recover fully.

Reality = Contact with the workplace (visits, phone calls from colleagues; and phased return to work) are the best measures for ensuring full return to work, and helping people integrate back into the workplace; this is seen as the employer showing care and concern.

For further information on managing sickness absence and return to work see the HSE guidance document 'Managing sickness absence and return to work' (HSG249) and the guidance on the HSE's website <http://www.hse.gov.uk/sicknessabsence/index.htm>.

2. Messages for managers: Why you should do something for employees with MSDs

2.1 *Is it a problem for me?*

HSE statistics are clear: MSDs are the most common occupational illness in the UK, affecting over 1 million people a year. Within each organisation the costs of MSD related absence can be significant (e.g. relating to reduced service, increased cost of overtime, staff replacement etc). An examination of your absence data will reveal the number of personnel absent with these problems, or number of working days lost due to them. If you put a price on this you may be surprised at the amount it is costing your business or organisation. These costs can be reduced by managing those with MSDs appropriately, such that they are able to remain in work, or return to work. This can have a significant impact on your organisation's bottom line.

2.2 *Why should I do something about it?*

You as the employer can make a difference to the ability of your staff with musculoskeletal disorders to stay in work or be able to return to work. MSDs cause significant pain and suffering for those who experience them and this can have an impact on the work they perform and those around them. There is evidence that investing in managing those with MSDs, and in providing fast access to advice and effective treatment programmes is cost effective. An investment of time and resource to effectively managing these problems tends to have at least a two fold return in terms of reduced absence, retention of skilled staff, reduced recruitment and training costs, reduced overtime for colleagues, reduced litigation etc.

2.3 *Are there effective solutions?*

There is evidence both from within the UK and internationally that there are effective ways of managing those with MSDs, and that these methods are cost effective. The benefits are seen in helping to prevent absence and helping those who are absent return to work, both of which can have a clear benefit on the organisation's finances. The time and cost required to set up these programmes need not be substantial.

Although organisations differ, there are key features on how to manage those with MSDs which can be applied whatever the size of your organisation or the nature of your operations. Significant amounts of money are not necessarily required and there are many things that employers can do themselves without necessarily requiring external support. It is quite straightforward to adopt the principles outlined in this document.

2.4 *What should I do?*

This model is written to help you as an employer, and all those involved with the support of those with MSDs, to have a common approach and to be able to work together to help individuals stay in work or return to work. It explains some of the key concepts that are important in this area, and illustrates how to implement them in your workplace. The key stages are:

- Identify key personnel who will be involved; clarify their roles and responsibilities.
- Communicate clearly with all concerned.
- Provide early access to advice for those who experience MSDs.
- Ensure appropriate treatment is identified, and provided, if required.
- Consider whether any changes to the workplace or tasks may be required.

If a member of staff becomes absent with an MSD:

- Keep in contact with them.
- Agree goals for a return to work plan.
- Address obstacles to return to work.
- Ensure that their rehabilitation is focussed on their work tasks; workplace based rehabilitation is often the most effective.
- Monitor and review the individual's progress against the return to work plan, and make necessary changes.

These stages are expanded in more detail in the rest of this document.

3. Definitions and key concepts

3.1 Definitions

Cognitive Behavioural Therapy (CBT)

A problem solving approach that helps people to identify and modify dysfunctional thoughts, assumptions and patterns of behaviour.

Functional capability assessment

A systematic process of assessing an individual's physical capacities and functional abilities. It will allow a matching of an individual's capabilities and abilities to the demands of a specific job or work activity or occupation.

Healthcare providers

The broad group of qualified professionals who could support the individual in their physical or psychological needs in relation to managing their MSD. They may provide treatment and / or may have a case management role.

'Musculoskeletal disorders' (MSDs)

Common examples of MSDs are back pain, neck pain, upper limb disorders (also known as 'RSI'). They can be caused by work or non-work activities. They are characterised by pain or discomfort, and may be associated with injury resulting in limitation or disability.

Pain Management

Some form of specialist intervention to help people cope with or reduce the impact of chronic pain on their level of functioning. It may address both the physical and psychological aspects of the pain.

Red Flags

Findings from the medical history and clinical examination that raise suspicion of a serious underlying condition in the individual; if present, prompt referral for further investigation should be considered.

Psychosocial factors

This is a composite term relating to the interrelation between psychological and social factors; the psychological factors are predominantly beliefs and perceptions whilst the social factors include culture and the social environment. The interactions between perceptions and social context can form strong obstacles to recovery and return to work.

Psychosocial factors can be categorised as yellow, blue and black flags:

Yellow flags

Personal beliefs and perceptions that are associated with chronic pain, disability and unfavourable clinical outcomes. They include dysfunctional beliefs and attitudes about pain and disability; distress; uncertainty; negative coping strategies; illness behaviour. These factors can be addressed by appropriate information and advice.

Blue flags

Perceptions and concerns about the health condition, about work, and the relationship between them and consequent ability to work e.g. beliefs that work is harmful; attribution of

the health condition to work; low job satisfaction; lack of social support at work. These unhelpful perceptions can be held by workers, management and health professionals; they can be addressed by appropriate information, guidance and discussion.

Black flags

Organisational factors that hinder return to work e.g. sick certification practices; unhelpful employers / co-workers; inappropriate information and advice; unhelpful return to work policies; loss of contact with the workplace if absent. These factors are not a matter of perception and affect all workers in a workplace or occupation equally. Their impact can be reduced by policies aimed at a proactive approach to absence management.

Work hardening

A programme of activities undertaken as part of a rehabilitation programme, which aim to develop or restore movements and strength which are compatible with those which will be required in the workplace.

3.2 Key concepts

The importance of the 'Stay in Work' culture

There has been a significant change in evidence-based understanding of the effective management of musculoskeletal disorders. Concepts that emphasised rest, avoidance of activity, and the role of passive treatment are outdated and no longer considered appropriate. There is now strong evidence that the most effective method to manage back pain is to maintain as much activity as possible including work (albeit with temporary modifications when necessary). This is also held to be the most effective method to manage upper limb pain, although the evidence is less extensive; acute inflammatory conditions of the upper limb (e.g. tenosynovitis) may be an exception, for which (temporary) rest seems more appropriate. However, general activity (e.g. walking) is likely to be beneficial. There are also psychological benefits in maintaining activity.

The role of the workplace in facilitating rapid and successful rehabilitation has therefore become a principal focus for rehabilitation. It is inappropriate to think of work merely as a place to return to once a person is fully recovered; the workplace is integral to the rehabilitation process.

Active case management

This is the goal-oriented approach to achieving specific work retention and return to work outcomes. Case management typically involves (but is not limited to) a screening and intake process; assessment; planning; service arrangement; and, monitoring and evaluation of outcome.

Case management is a process that can provide significant improvements in work retention and RTW. The concept of case management for MSDs in the workplace is relatively new in the UK. However, the concept is not difficult, and it is not necessary to be a trained case manager to be able to adopt the principles of good case management which are set out in this document.

The role of the case manager

Active case management is usually undertaken by someone designated as a 'case manager'. Case managers provide coordination, facilitate communication, and work collaboratively with treatment providers, the employee, and the workplace to ensure an

early and sustainable return to work. The case manager remains involved until a satisfactory outcome has been achieved.

Case managers' skills are focussed on achieving a rapid and proactive return to productive activity. The case manager acts as a central point of contact for the different parties involved in the management of the individual, and to co-ordinate between the individual, healthcare provider, and the employer. This means adopting various roles. For example, when dealing with an employer they emphasise the individual's needs; when dealing with a healthcare provider they emphasise the employer's needs; and when dealing with the individual they emphasise early and sustainable return to work.

It is the case manager's role to ensure that any treatment provided is appropriate, timely and effective. As such, they may have responsibility for the budget for treatment provision.

MSDs range in complexity from simple cases which will resolve relatively quickly without the need for therapy or treatment and which may result in little or no time off work, to complex cases which may require significant treatment, may last a considerable length of time, and may involve significant amounts of time off work.

The decision as to who should be selected by the organisation to manage cases will depend on the complexity of the case, and the resources available within the organisation. Many simple cases may be able to be undertaken by a competent manager (non-health professional) within the organisation, by following the guidance in this model. Further advice and support may be required for more complex cases.

More complex cases are likely to require management by someone with experience in case management, and some occupational and medical knowledge. This does not have to be an occupational health professional, although there can be advantages in this as regards medical confidentiality, when liaising with healthcare providers concerning the individual's condition, and understanding the potential impact of the MSD on work ability. Furthermore, because MSDs may be related to other health problems (e.g. depression) some medical knowledge may help with the management of the case. This case manager may be someone working within the organisation who takes responsibility for managing workers with MSDs, or it may be an external contractor who offers this as a specialist service.

Case management can be done on an 'in-house' basis, or by using a professional case manager service. An organisation should select the way of implementing the case management which suits their needs best. To illustrate this, people who may undertake case management may fall into any of the following categories:

'Internal' personnel:

- A member of the organisation (a non-health professional) with good listening, communication and people skills
- A health professional with an occupational health interest, working closely with or within an organisation

'External' personnel:

- An individual service provider who may or may not be a health professional and who may or may not have occupational health knowledge
- An external case management organisation
- An insurance company where case management is part of the organisations' insurance policy arrangements.

Whether an 'internal' or 'external' case manager is used, they should adhere to the principles in this model. Remember that *who does it* is less important than *how it is done*.

A specialist case manager may not be required for simple cases (where the individual is not absent or early return to work is anticipated). However, a named individual within the organisation should be designated to manage the case, and the case management principles outlined in this document should be followed by whoever undertakes the management of cases.

Should the case become more complex, a specialist case manager may be required.

Note that the case manager role sometimes requires objective judgements about treatment outcomes and progress; there can be a potential conflict of interest if the case manager is also functioning as the individual's treatment provider where there may be financial incentives for providing the treatment. There is evidence that case management is most effective when the case manager is not also the treatment provider

Return to Work (RTW) plans

Every worker who takes time off work for more than a few days is likely to need some type of RTW plan. This will detail the duties the employee will undertake, any modifications to work equipment, and the hours of work. If the RTW plan involves a temporary adjustment to the work arrangements (e.g. different tasks), the plan should specify the duration over which these tasks will be performed. If the RTW plan includes temporary adjustment to working hours, the initial hours of work, and the increase in hours worked should be specified. Review dates should be included in the plan, so the individual's condition can be monitored. RTW plans should be formally documented. Further details on developing RTW plans are detailed in Section 6.

Provision of treatment

Individuals with MSDs may require either / both physical and psychological treatment. Each individual with an MSD may seek treatment through the NHS (initially through the GP). They may be provided with advice, and referred on for treatment through other NHS services. Treatment may also be sourced privately, either through the employer, or by the individual themselves. If organisations do provide treatment for the individual, the GP and other NHS treatment providers should be kept informed of this through the case management function.

Many people with MSDs will receive some form of treatment for physical or psychological conditions related to their discomfort. Those with on-going (chronic) discomfort may require further specialist treatment (e.g. Cognitive Behavioural Therapy etc). This is typically available through external service providers.

There may be a range of healthcare providers involved in the provision of treatment for individuals, particularly if the case is more complex. This multi-disciplined approach will require co-ordination and liaison between the different treatment providers, and the role of the case manager therefore becomes more important in these more complex cases.

There is clear evidence that for most MSDs, simply providing healthcare will not fully resolve the problem. Most people with MSDs are able to work successfully and productively, but this may require a combined approach of the employer providing appropriate work and workplace adaptations, the therapy provider providing appropriate healthcare which is focussed on the workplace, and the individual understanding that it is best for them to stay active and at work if possible.

Due to long waiting times for treatment (e.g. physiotherapy) for MSDs in the NHS, many organisations choose to provide private treatment for their employees with MSDs. There is strong evidence that this speeds up the return to work, or helps employees stay in work. This works best when the therapy provider is aware of the work tasks that the individual undertakes, and provides treatment taking account of these tasks.

There are a number of different models organisations have adopted for providing therapy. Therapy providers may be employed directly by an organisation and provide therapy on-site; they may be externally contracted in to the organisation, and provide therapy on-site; or they may be externally contracted to the organisation, and provide therapy at their own facilities. Contracts may be sessional or ad hoc as required. The preferred model will depend on the organisation's size, resource and facilities. There is no evidence that one model is superior to another, but the important point is that any treatment provider used understands the individual's work tasks and provides appropriate advice accordingly.

In selecting a therapy provider it is advisable to determine their approach to treatment. Therapy providers who encourage a self-help approach (emphasising what the individual can do for themselves in relation to their condition), and have a vocational focus are known to be the most effective in obtaining a positive outcome.

Rehabilitation

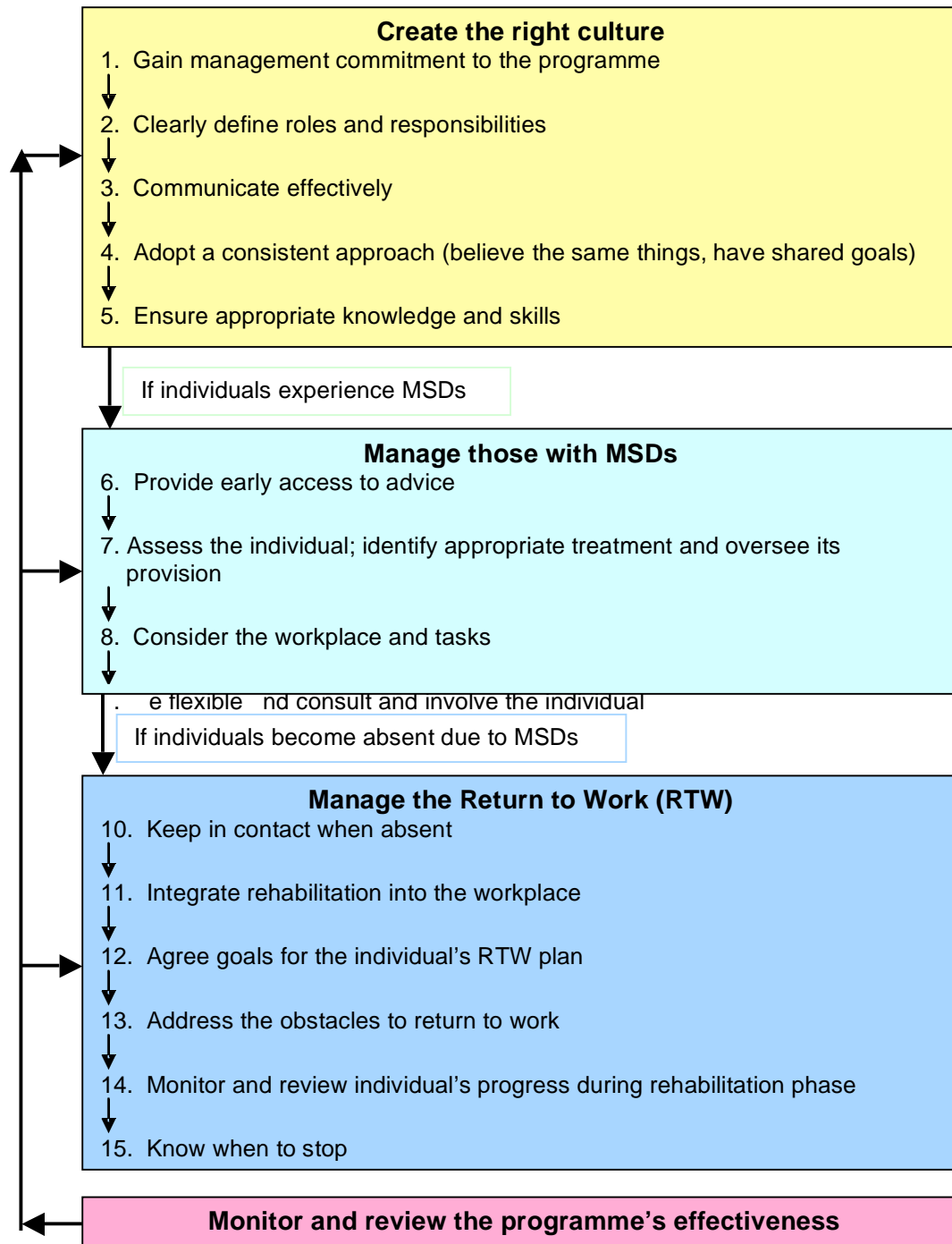
This refers to restoration of productive activity. The focus in this document is 'work rehabilitation', which can also be described as 'occupational' or 'vocational' rehabilitation. It involves multi-dimensional methods to facilitate work retention and return to work outcomes for employees with injuries or diseases that have led to time off work.

There has been a change in the understanding of how to achieve effective rehabilitation, with the recognition now that the workplace is the key place for the employee to recover. Rehabilitation therefore needs to consider the workplace and the job as well as provision of appropriate treatment. The focus is on identifying and overcoming personal and occupational obstacles to recovery (see yellow and blue flags in Definitions).

4. How to case manage MSDs

4.1 Overview

This flowchart indicates the stages that are required to run a successful workplace MSD management programme. More detail on these concepts is provided in this section. The actions for how to manage those with MSDs are detailed in Section 5, and for return to work in Section 6.



4.2 Create the right culture

1. Gain management commitment to the programme

Management support is essential in ensuring that appropriate personnel are in place, and that there is funding for any appropriate workplace modifications and treatment required. Management support will also set the tone for support from line managers and colleagues for those with MSDs.

Management support can be gained by understanding the importance of these programmes (see Section 1), and by understanding what can and can't be done for those with MSDs (see *Dispel Return to Work myths* box).

Developing an appropriate culture may involve development of policies on management of MSDs (see Appendix A for an example policy). These will need to be communicated and agreed with all those involved within the organisation in the management of those with MSDs.

This may involve setting objectives for the programme, collecting and collating data on MSD related absence, associated costs and benefits etc against which to monitor the effectiveness of the programme.

2. Clearly define roles and responsibilities

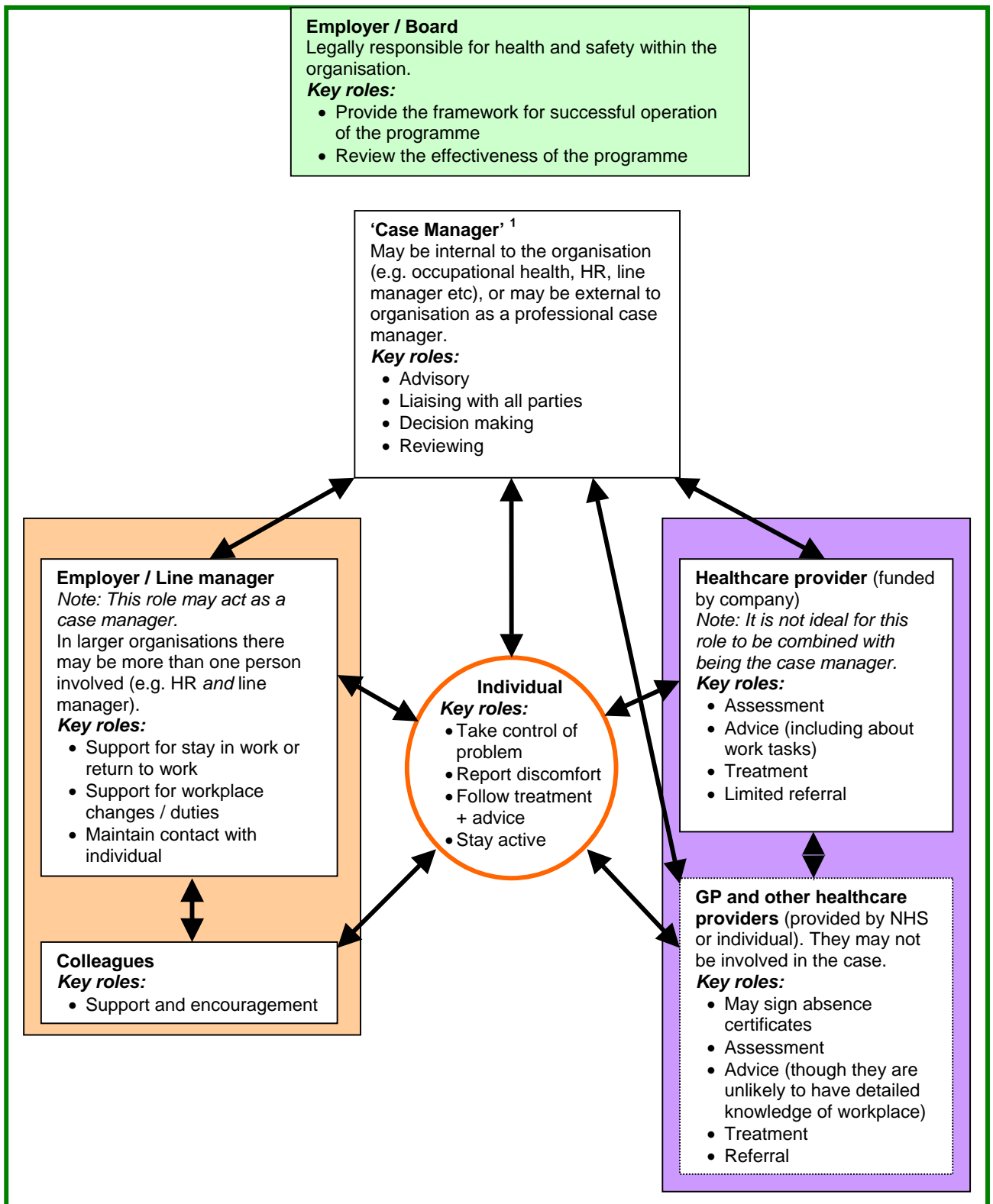
Successful management of those with MSDs requires a team approach involving a range of personnel with different expertise. Some of those involved may work external to the organisation. The role of the case manager is integral to this. All those involved need to be clear of their role and responsibilities, of the overall process, and of how their function fits within this. This will require definition and allocation of responsibilities, and communication of this within the team.

3. Communicate effectively

Communication between the different roles is key to the successful management of those with MSDs. Communication needs to be timely, appropriate and clear. It may be through paperwork or discussions. There may be a need for case conferences for more complex cases where the key players meet face to face.

The paths of communication between the different key players are illustrated in Figure 1. The exact model that is used may be different from that shown depending on the size and structure of the organisation.

Figure 1. Communication channels beneficial for successful case management of those with MSDs



¹ The role of the case manager is explained in Section 3

4. Adopt a consistent approach (believe same things, have shared goals)

The organisation and healthcare providers should adopt a consistent approach towards those with MSDs. This may involve developing toolkits (e.g. letter templates, information sheets etc) so that a consistent message goes to the individual, line manager, colleagues and healthcare provider. In particular, it is important that all those involved with managing those with MSDs subscribe to the key messages that a supportive workplace can help individuals stay in work, that people with MSDs will recover from them or be able to work, but that this may take some time.

5. Ensure appropriate knowledge and skills

Everyone involved with managing or rehabilitating those with MSDs back to work need to have appropriate knowledge and skills to fulfil their function. This may require training for some roles (e.g. for line managers in managing their staff with MSDs); in other cases (e.g. if selecting healthcare providers) it may require identification of appropriate competent personnel to be able to fulfil the role (asking questions about past experience, and selecting those who have a clear vocational focus will help). The use of professional case managers can be cost effective, particularly with more complex cases.

4.3 *Manage those with MSDs*

6. Provide early access to advice

Early provision of advice that promotes and, importantly, is consistent with the goals of the early return to work process, is a significant factor in ensuring successful return to work outcomes; inconsistent advice and mixed messages will seriously undermine early recovery and return to work.

Providing access to specialist advice directed at the specific person's problem (e.g. about remaining active, self-help strategies etc) as soon as possible after being informed of the discomfort, helps people to stay in work or return to work more quickly. Evidence-based advice booklets can be useful, both for workers with MSDs and their line managers (The Stationery Office publish some suitable titles such as *The Back Book* and *The Neck Book*).

7. Assess the individual; identify appropriate treatment and oversee its provision

An appropriate assessment of the individual's discomfort and ability to undertake their job is required in order to determine appropriate treatment. This should be undertaken whether or not the individual is absent from work, and 'early' after the organisation is aware of the discomfort, in order to be able to identify what is needed. The assessment is likely to be done by someone with appropriate knowledge of MSDs, e.g. a case manager or health care provider. At its simplest level, this may be done through discussion with the individual. For more complex cases it may include functional capability assessment and clinical examination. Not all workers with MSDs want or require treatment but when they do, appropriate treatment or interventions need to be identified, typically by a case manager or healthcare provider. The assessment will need to be reviewed regularly, as the individual's discomfort and abilities change.

Those who provide healthcare should follow an evidence-based treatment protocol. This suggests the programme should be activity based with a focus on therapy targeted for the individual's work activities. The therapy should be provided for an appropriate length of time, with appropriate, regular review of progress. The case manager should oversee this e.g. through discussion with the therapy provider. Issuing unnecessary sick notes can be counterproductive. The standard sick note (Med 3) can also be used as a 'fit note' to state

what the worker can do rather than can't – the case manager might usefully request one from the GP.

If the individual is receiving healthcare provision from more than one service provider (e.g. company appointed physiotherapist and their own GP), this treatment should be co-ordinated through the case manager.

For those whose condition does not improve after a short period of time (e.g. 5-10 days) providing treatment at this stage can be beneficial. This should be for a limited number of sessions (e.g. 4-6, with sessions once or twice per week) with review, and improvement in the condition should be seen over this period of treatment. The condition should be reviewed with the healthcare provider during and at the end of this period to determine its effectiveness, and the ability of the individual to undertake their job.

8. Consider the workplace and tasks

Changes to the individual's workplace and tasks may be required to enable them to remain in work or return to work. These changes may be temporary or permanent. Any required adaptations will need to be discussed with and supported by all those affected by them, including management, line managers, colleagues and the individual. As a minimum the individual, line manager and case manager will be involved in these discussions. Changes may affect the workplace, equipment, tasks or work arrangements.

•□ Workplace adaptations

These should be appropriate for the individual's needs, following an assessment of the individual in their workplace when undertaking their expected / typical range of tasks. At the simplest level, this assessment may involve discussion of needs with the individual; more complex cases may require input from someone with ergonomics knowledge. Changes may be temporary (e.g. relocation to different work area) or permanent (e.g. new chair etc).

•□ Arrangements for temporarily adjusted work

Some staff may require transitional (i.e. temporarily altered) work arrangements, such as shorter or flexible hours, or different duties on a temporary basis. These should be time-contingent, with the goal being return to normal hours of work and the same or alternative duties within a set period of time. This should be regularly reviewed during the individual's return to work phase (see Section 6).

9. Be flexible and involve the individual

One treatment or workplace adaptation will not suit all individuals, and appropriate changes should be assessed for each case. A flexible approach is required, which sets a suitable programme for each individual based on their needs and abilities. It is important to identify 'what will help this individual at this time?'

4.4 Manage the Return to Work (RTW)

10. Keep in contact when absent

Maintaining regular contact with an employee who is absent from work is beneficial in facilitating them in their return to work. This may be done by the line manager, case manager, or other colleagues as appropriate. The frequency and style of contact (phone call / visit) will depend on the individual and case, but regular contact is very important in helping the individual prepare to return to work.

11. Integrate rehabilitation into the workplace

For a rehabilitation programme or RTW plan to be effective it needs to take account of the individual's work situation. Rehabilitation needs to consider the tasks the individual undertakes, equipment used, and hours of work. The most effective rehabilitation combines clinical and occupational management. It needs to address clinical and occupational obstacles to return to work (see below), and may involve gradually increasing work hours and demands of work tasks; it should be integral with the workplace. More complex cases may require healthcare professional involvement in supervising a workplace based rehabilitation programme.

12. Agree goals for the individual's RTW plan

Commitment to the RTW plan is required by all those it affects; this commitment needs to be given by the organisation, line manager, colleagues, and healthcare provider as well as the individual. This should be co-ordinated by the case manager. The RTW plan may include specific elements which are time contingent. These need to be agreed by all those involved, particularly the individual. Further details on return to work plans are provided in Section 6.

13. Identify and address the obstacles to return to work

To facilitate return to work, the programme needs to address not only the physical obstacles in return to work (what the individual may be temporarily unable to do), but also the psychosocial factors which may impede their return to work, such as financial disincentives, loss of confidence, interpersonal relations, time pressures, job satisfaction, stress etc. The programme should identify and address these. This could be done by the case manager, occupational health professional, human resources, line manager or another designated individual, depending on the organisation. Accurate information and advice is likely to be helpful in addressing obstacles related to perceptions. Modifications may be required to workload, tasks, hours etc. A gradual return to work can help develop confidence as individuals identify that they are able to perform work tasks.

14. Monitor and review individual's progress during rehabilitation phase

The individual should be monitored and their progress reviewed during their rehabilitation or return to work phase, to ensure that they are coping adequately both physically and psychosocially with the tasks, and that treatment provided is beneficial. This may require re-evaluation of appropriate measures or interventions. Treatment which is having no benefit should be stopped. If the individual is not improving as expected, it is important to explore whether there are other issues that are acting as obstacles to recovery or return to work. This review and monitoring should be done by the case manager and in consultation with the employee.

15. Know when to stop

Some staff may not respond as hoped to a rehabilitation programme, and this may be identified by the employer and / or healthcare provider. If so, the case manager will need to consider whether it is appropriate to continue with treatment or rehabilitation measures. If progress is not made, alternative outcomes may have to be sought such as alternative duties.

4.5 Monitor and review the programme's effectiveness

The overall programme should be monitored and reviewed, to ensure the elements are effective and the time and money which is put to it is spent effectively.

To be able to evaluate the programme it is necessary to have clear objectives for it from the outset. Baseline data will be needed on factors such as MSD related absence (number of employees affected, duration of absence etc). It can be beneficial to quantify the cost of this absence (both direct salary costs, and indirect staff replacement / management etc costs).

It can also be helpful to quantify the cost of managing those with MSDs e.g. line management time, case management costs, treatment costs etc. The outcome of the management should also be quantified, in terms of successful return to work etc.

In evaluating and reviewing the programme it is beneficial to speak to the stakeholders (employees, managers, case managers, treatment providers etc). Their comments on the operation of the programme and its effectiveness, and any suggestions on how it might be improved, can be useful in refining or altering the programme. This might be part of an annual review process.

5. What those involved with the management of MSDs can do

5.1 Overview

This section explains what can be done by all those involved with the management of MSDs, and when they should take these actions. This is summarised in Table 1, and explained in more detail in the text.

Appropriate actions will depend on the nature of the condition the individual has, and will need to be tailored to their specific needs at the time. The actions are described as 'minimum' which all organisations are encouraged to aim to achieve. 'Additional' actions are also described, which may be undertaken by organisations which have more resource, or who wish to go further in the process.

A suggested timeframe to trigger these actions is shown in the table. These are suggested times for action, rather than precisely prescribed timeframes. The appropriate action may be required sooner in some cases, and this may be a matter for professional judgement. However, the suggested timeframes reflect general principles of good practice.

Table 1: Summary of actions for successful rehabilitation of musculoskeletal disorders

Text in blue / italics indicates that this concept is expanded on further in the accompanying text.

	EMPLOYEE can	EMPLOYER can	HEALTHCARE PROVIDER can	CASE MANAGER can
BEFORE PROBLEM OCCURS	<p>Minimum</p> <ul style="list-style-type: none"> Participate in safe workplace Be aware of workplace policies and procedures Try to keep fit and active <p>Additional</p> <ul style="list-style-type: none"> Learn about effective <i>RTW approaches</i> 	<p>Minimum</p> <ul style="list-style-type: none"> Comply with legal duties; i.e. identify hazards, assess and reduce risks, and provide employees with information, instruction and appropriate training Encourage staff to report any problems or symptoms early Have established <i>policies and procedures on Managing MSDs</i> Promote a <i>Stay in Work culture</i> Be committed to using the <i>workplace as the site for effective rehabilitation</i> Identify MSD problems amongst staff by absence / injury Identify any organisation obstacles to rehabilitation, <i>'black flags'</i> <p>Additional</p> <ul style="list-style-type: none"> Educate and inform staff in effective <i>RTW approaches</i> 	<p>Minimum</p> <ul style="list-style-type: none"> Adopt a health promotion role to help dispel myths 	<p>Minimum</p> <ul style="list-style-type: none"> Adopt a health promotion role to help dispel myths
ONSET OF DISCOMFORT OR PAIN	<p>Minimum</p> <ul style="list-style-type: none"> Use a self-help approach Maintain activity as far as possible Seek advice from reliable sources (e.g. occupational health advisors, pharmacists, GPs, etc). Use simple (over-the-counter) pain relief medicine Be aware that early reporting of significant problems to your employer can be beneficial Understand what healthcare can and cannot provide concerning MSDs (i.e. healthcare is not the full answer) 	<p>Minimum</p> <ul style="list-style-type: none"> Use a self-help approach Maintain activity as far as possible Seek advice from reliable sources (e.g. occupational health advisors, pharmacists, GPs, etc). Use simple (over-the-counter) pain relief medicine Be aware that early reporting of significant problems to your employer can be beneficial Understand what healthcare can and cannot provide concerning MSDs (i.e. healthcare is not the full answer) 		

Note: *RTW = Return to Work*

	EMPLOYEE can	EMPLOYER can	HEALTHCARE PROVIDER can	CASE MANAGER can
REPORT OF PAIN OR DISCOMFORT	<p>Minimum</p> <ul style="list-style-type: none"> ☐ Report symptoms if work tasks or safety is affected ☐ Tell line manager about difficult tasks 	<p>Minimum</p> <ul style="list-style-type: none"> ☐ Activate procedures and systems for managing MSDs ☐ Consider the work, workplace and healthcare needs of the individual to help them stay in work. Ask what can be done to help the individual stay in work. ☐ Identify suitable tasks and work hours if required <p>Additional</p> <ul style="list-style-type: none"> ☐ Assign someone to maintain contact with employee concerning their discomfort ☐ Assign a <i>'case manager'</i> 	<p>Minimum</p> <ul style="list-style-type: none"> ☐ Be available to provide treatment and advice 	<p>Minimum</p> <ul style="list-style-type: none"> ☐ Be available to provide advice ☐ Address obstacles to staying in work, <i>'blue flags'</i>
SEEK HEALTHCARE (IF NO IMPROVEMENT)	<p>Minimum</p> <ul style="list-style-type: none"> ☐ Stay active and try to stay at work ☐ Discuss Stay in Work options with healthcare provider ☐ Follow treatment advice about work tasks and hours, activities, and pain relief 		<p>Minimum</p> <ul style="list-style-type: none"> ☐ Check for serious injury or disease, <i>'red flags'</i> ☐ Encourage Stay in Work ☐ Reassure and explain typical pattern of discomfort <p>Additional</p> <ul style="list-style-type: none"> ☐ Advise employer / employee on work tasks and hours, activities, and pain relief ☐ Identify and address obstacles to recovery, <i>'yellow flags'</i> 	<p>Minimum</p> <ul style="list-style-type: none"> ☐ Receive and process reports ☐ Address obstacles to staying in work, <i>'blue flags'</i> <p>Additional</p> <ul style="list-style-type: none"> ☐ Provide Stay in Work advice and encouragement ☐ Ask GP for a 'fit note'
IF OFF WORK	<p>Minimum</p> <ul style="list-style-type: none"> ☐ Stay active ☐ Maintain contact with workplace ☐ Attend work meetings and social events ☐ Agree <i>RTW plan</i> ☐ Talk to healthcare provider about return to work <p>Additional</p> <ul style="list-style-type: none"> ☐ Learn self-help strategies 	<p>Minimum</p> <ul style="list-style-type: none"> ☐ Agree <i>RTW plan</i> ☐ Obtain occupational health advice if needed ☐ Maintain regular contact ☐ Discuss transitional work arrangements with employee ☐ Review the risk assessments related to the employee's tasks and their abilities/needs ☐ Make necessary changes to work / workplace 	<p>Minimum</p> <ul style="list-style-type: none"> ☐ Encourage activity ☐ Seek out or provide expert treatment ☐ Identify and address obstacles to recovery, <i>'yellow flags'</i> <p>Additional</p> <ul style="list-style-type: none"> ☐ Agree <i>RTW plan</i> 	<p>Minimum</p> <ul style="list-style-type: none"> ☐ Develop <i>RTW plan</i> negotiated with others ☐ Ensure timely and appropriate healthcare provided ☐ Liaise directly with healthcare providers and employer ☐ Ask GP for a 'fit note' ☐ Address obstacles to return to work, <i>'blue flags'</i> <p>Additional</p> <ul style="list-style-type: none"> ☐ Monitor outcomes of healthcare provided

	EMPLOYEE can	EMPLOYER can	HEALTHCARE PROVIDER can	CASE MANAGER can
RETURN TO WORK FOLLOWING ABSENCE	<p>Minimum</p> <ul style="list-style-type: none"> • Gradually increase hours • Continue as many usual activities as possible • Discuss progress with employer 	<p>Minimum</p> <ul style="list-style-type: none"> • Implement graded <i>RTW plan</i> <p>Additional</p> <ul style="list-style-type: none"> • Obtain occupational health advice if needed • Check on the RTW progress 	<p>Minimum</p> <ul style="list-style-type: none"> • Review regularly • Encourage activity <p>Additional</p> <ul style="list-style-type: none"> • Address ongoing obstacles to recovery, '<i>yellow flags</i>' 	<p>Minimum</p> <ul style="list-style-type: none"> • Ensure timely start for RTW • Set RTW expectations for employer and employee • Liaise with healthcare providers and employer concerning <i>RTW plan</i> • Address obstacles to staying in work, '<i>blue flags</i>' <p>Additional</p> <ul style="list-style-type: none"> • Monitor RTW progress • Adjust RTW approach as required • Be cost-aware, maximise cost-effectiveness
ONGOING SYMPTOMS AFFECTING WORK (4 TO 12 WEEKS)	<p>Minimum</p> <ul style="list-style-type: none"> • Tell line manager about tasks that are still difficult • Stop unhelpful treatment <p>Additional</p> <ul style="list-style-type: none"> • Consider work options 	<p>Minimum</p> <ul style="list-style-type: none"> • Suggest all parties meet to discuss employment options <p>Additional</p> <ul style="list-style-type: none"> • Provide altered workplace, equipment or work arrangements for temporary period; the suitability of and need for these should be regularly reviewed. 	<p>Minimum</p> <ul style="list-style-type: none"> • Intensify RTW efforts • Stop unhelpful treatments • Liaise with case manager • Reassess to identify on-going obstacles to RTW <p>Additional</p> <ul style="list-style-type: none"> • Seek further RTW expertise / programmes • Advise on ability to work 	<p>Minimum</p> <ul style="list-style-type: none"> • Liaise directly with healthcare providers, and employer • Ensure maximum RTW effort by all key parties • Give consideration to a multi-disciplinary rehabilitation programme, which could include <i>CBT, pain management</i> and vocational <i>rehabilitation</i>. • Address obstacles to staying in work, '<i>blue flags</i>' <p>Additional</p> <ul style="list-style-type: none"> • Manage expectations • Make cost-effective decisions

ONGOING SYMPTOMS AFFECTING WORK (MORE THAN 12 WEEKS)	Minimum <ul style="list-style-type: none"> • <input type="checkbox"/> Consider negotiating new job description • <input type="checkbox"/> Identify transferable skills • <input type="checkbox"/> Learn new tasks 	Minimum <ul style="list-style-type: none"> • <input type="checkbox"/> Provide modified work arrangements, adjustments to tasks, or work environment • <input type="checkbox"/> Consider re-deployment, additional training 	Minimum <ul style="list-style-type: none"> • <input type="checkbox"/> Provide symptomatic relief • <input type="checkbox"/> Encourage individual to adopt self-management approach • <input type="checkbox"/> Support and encourage work • <input type="checkbox"/> Advise on ability to work 	Minimum <ul style="list-style-type: none"> • <input type="checkbox"/> Provide support and encouragement to maintain and improve work capacity
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The following text expands on the table, and provides the key messages and a summary of appropriate actions for helping those with MSDs stay in work. It is written for:

- Individuals
- Colleagues
- Employers
- Healthcare providers
- Case managers

5.2 Individuals

Key messages:

- Your discomfort or pain won't necessarily get better more quickly if you stay at home just waiting; staying active (e.g. through whatever activity and work you are able to undertake) is good for your physical and mental well-being and your longer term recovery.
- There's lots you can do to help promote your recovery, and it is likely that there are many aspects of your job you can still do, even if you have some discomfort. If you have a positive attitude about what you can do, you are more likely to be able to stay in work, or get back to work.
- You may experience discomfort or pain on returning to work, but this does not mean that work is causing you damage. Your muscles will be building up, as they do whenever you do something your body is not used to (e.g. when playing sports), and this brings increased strength.

What you can do:

- If you experience discomfort or pain at work, tell your employer, as they will be able to do things to help you. You should do this whether or not the discomfort was caused by work.
- Stay active, and seek advice from reliable sources (e.g. occupational health professionals, pharmacists, GPs, etc).
- Communicate with your employer regularly about any significant changes in your discomfort.
- Discuss with your employer any tasks which you find difficult or uncomfortable to do, and any ways these could be changed.
- If you go absent due to your pain, you need to let your employer know straight away. You should keep in touch with your employer regularly during your absence; it will help with your return if you are able to speak with colleagues while absent, and / or visit the workplace.
- Play your part in working with your manager and healthcare providers to help you stay in work or come back to work. Discuss your needs with them, and try any suggestions to alterations in workplace, equipment or work which may assist you.

5.3 *Colleagues*

Key message:

- MSD related discomfort or pain won't necessarily get better more quickly by staying at home; staying active (e.g. through staying at work) is good for physical and mental well-being and longer term recovery.
- People with a positive attitude about what they can do are more likely to be able to stay in work, or come back to work.

What you can do:

- Support the individual to be active both at work and outside of work, within the limits of their discomfort. Staying active will help with their recovery.
- Be supportive of them in getting back to work; this may involve helping them in some of their duties temporarily.

5.4 *Employer*

Key message:

- MSDs are not necessarily caused by work but can have a significant impact on work activities.
- There are lots of things you can do to help your employees with MSDs stay in work.

What you can do:

- Create a culture where those with MSDs are supported and their needs responded to. This may include adopting a policy on managing MSDs (see Appendix 1) and training line managers.
- Encourage employees to inform you of any significant discomfort early in its development. Provide a supportive system for doing this. This may involve training and informing line managers of how to manage those with MSDs.
- Identify hazards, assess risks, reduce risks, provide information etc on the risks identified and controls in place.
- Make necessary changes to the workplace, equipment, tasks and hours to help the individual to stay in work. Some of these adaptations may be temporary, giving the individual sufficient time to recover.
- Communicate with the individual and their healthcare provider if they are absent for longer than a few days. There is benefit in providing advice on the first day to stay active¹; and in providing assessment / treatment where appropriate if there is no improvement within 3-7 days. Early provision of treatment remains beneficial even if it is not available within that time frame.
- You may want to consider providing treatment for them as this can help speed their return to work. Any treatment provider should follow the principles in Section 5.5.
- Where appropriate, allocate someone to be the individual's 'case manager'. This need not be an external service provider, but they should follow the principles in Section 5.6.
- If they have been absent, facilitate and support the individual's return to work. This may be through altered work hours (reduced or rescheduled); altered duties;

altered equipment etc. These arrangements should be viewed as temporary in nature, with the aim that the individual is returned to normal work arrangements when appropriate. However, some equipment changes (e.g. alternative chair, keyboard etc) may be viewed as permanent adaptations which enable the individual to work comfortably. This is explained more fully in Section 6.

- Have a positive attitude, identifying what you can do to support the individual in the workplace.
- Monitor the effectiveness of the programme through absence records and other data.

¹ The Back Book (TSO); and the Neck Book (TSO) provide useful advice on self-management of pain and discomfort.

5.5 Healthcare provider

Key message

- Rehabilitation needs to be focused on the individual's needs in relation to their work.

What you can do:

- Provide treatment and therapy which is oriented towards the individual's work.
- Follow best clinical practice.
- Advise the individual to stay active, and reassure them that staying active is not going to cause them more harm.
- Advise on transitional work arrangements.
- Appreciate the psychosocial obstacles to recovery; assess and address these.
- If appointed to be a case manager, be aware of the needs of the individual, particularly in relation to their work.
- Be aware of what the individual's job involves and provide treatment / rehabilitation which will facilitate their retention in work or return to work.
- For longer term absences, review and continue with appropriate treatment, and support the return to work programme (see Section 6).

5.6 Case manager (see Section 3 for an overview of the role of the case manager)

Key message

- Rehabilitation needs to be focused on the individual's needs in relation to their work.

What you can do:

- Do what needs to be done to facilitate the individual to stay in work or return to work. This is likely to involve liaising with the healthcare providers (there may be several e.g. GP, physiotherapist, consultant etc) as to appropriate treatment and appropriate duration of treatment, liaising with the employer / line manager as to necessary work, equipment or workplace changes, liaising with the individual, developing a return to work plan, agreeing goals and monitoring in relation to these.
- Take steps to overcome obstacles to the individual's recovery and / or return to work. These obstacles may be physical (e.g. treatment may be required,

workplace changes may be necessary etc), psychological (e.g. beliefs, attitudes and expectations may need to be challenged) or organisational (e.g. further support may be required from managers, hours of work may need to be changed etc).

- Make efficient use of resources (select treatments or interventions effectively and stop unhelpful treatments).
- Manage expectations (see Section 5.7).

5.7 Manage expectations in the individual and employer

The case manager is likely to have a role in managing the expectations both of the individual in relation to their ability to undertake the work, and of the employer regarding the individual's ability to work.

Individual

It is important to establish positive expectations in the individual from the outset concerning their ability to return to work. Identifying specific RTW obstacles, and putting in place measures to counter these can usually achieve this. In general, employers / case managers need to be encouraged to focus on what their worker 'can do', rather than what they 'can't do'. This may be elicited through use of statements such as:

- "Parts of my job I can still do are..."
- "Parts of my job I may have difficulty with are..."
- "Ways I can get around these difficulties are..."
- "Things I need to talk to my boss, supervisor or colleagues about are..."
- "Other problems at work that I need to deal with, how I can solve them and who I need to talk to about them are..."
- "Things I enjoy about my work are..."

Employer

Employers, and particularly line managers, need to be aware that those with MSDs may have reduced ability in the workplace, but that there is benefit to the organisation in them being there. They should also realise that the individual is likely to have some 'ups and downs' during their recovery, and that they should allow for this during their return to work. There may be a few less productive days during the recovery process. However this does not mean that the individual should stop work.

6. Helping individuals return to work

6.1 Overview

For those who become absent due to MSDs, particular measures should be taken to help them return to work. This section expands on the guidance contained in section 4, and provides particular advice for managing those who have become absent.

Time off work is by far the most important factor in injury and illness costs. Managers can directly influence these costs through effective return to work practices in the workplace. The indirect costs of workplace injury/illness – absenteeism, reduced morale, recruitment and replacement expenses and lost productivity – are significantly greater than the direct costs and will also be minimised through this investment in the workforce.

Employers need to be encouraged to establish a supportive workplace culture that expects every employee to return to work, unless they have made at least one realistic attempt and demonstrated that they cannot.

The key to effective return to work and case management is to *act sooner rather than later*.

6.2 Informed best practice for helping individuals Return to Work

The following features show best practice for helping individuals return to work following an MSD related absence.

- Keep in touch while they are absent.
- Provide temporary changes to work tasks and/or hours. These arrangements should be temporary, and for a specified time period. These changes should be based on what the individual CAN do. Changes to equipment and furniture should also be considered; these may be permanent changes.
- Gradually increase workload demands (tasks or hours of work) with a planned series of increases, with a set period of time in each. The appropriate duration for restoring to normal tasks / hours needs to be individualised to the specific circumstances, and may require involvement of a healthcare provider in more complex cases.
- Monitor the employee's progress against the return to work plan.
- Use progress milestones measured by objective 'functional facts' (i.e. what the employee is actually able to do) rather than based merely on the 'opinion' of employees or their doctors.
- Provide off-site work-hardening when on-site temporary work is not available, e.g. for safety reasons. (e.g. an airline pilot would need time in a flight simulator following a significant absence, prior to flying).
- For those with complex MSDs, the most effective approach appears to be a dual-track combination of temporarily adjusted work arrangements, and work-hardening.

6.3 Key steps in helping employees Return to Work

Line managers and supervisors have a key role in the return to work process through providing a supportive workplace, and ensuring open communication. The crucial task is to provide suitable duties for the employee's RTW and prevent re-injury or recurrence.

The following steps should be taken; the responsibility for these steps may be taken by different functions depending on the organisation's arrangements.

Step 1	Take steps to enable early RTW (this may include workplace / work changes).
Step 2	Keep in touch with the individual if they are absent from work, so as to maintain motivation for their return to work.
Step 3	<p>Speak to the employee to:</p> <ul style="list-style-type: none"> • <input type="checkbox"/> Discuss whether they can stay in work in some capacity • <input type="checkbox"/> Tell them the workplace will be supportive while they recover • <input type="checkbox"/> Identify RTW assistance to provide when appropriate • <input type="checkbox"/> Advise that there will be a plan for their return to work, with a time frame for target outcomes. If this is being managed by a case manager the individual should be introduced to them.
Step 4	Decide whether an assessment is needed of the individual and / or their work and workplace to develop a RTW plan and refer as appropriate. These assessments may be by in-house staff or may require external specialist input. All relevant parties (e.g. line manager, individual, healthcare provider) should be informed of the outcome of the assessment.
Step 5	Obtain information on the employee's usual job and tasks, and potential suitable duties to enable a safe and early return to work.
Step 6	From this information (steps 3 and 4) draw up an individualised plan that outlines the RTW programme. This should be developed and agreed in consultation with the injured employee, treatment providers, the line manager and others as necessary. The plan should identify the goals, services, timeframes and costs. Alterations to work should be transitional, with the aim of returning the individual to full duties within a defined time period.
Step 7	Identify physical and psychosocial obstacles to return to work and remove these.
Step 8	Maintain contact between the line manager, case manager and healthcare providers during the individual's RTW. Ensure there is a system for promptly identifying and addressing any emerging problems.
Step 9	Close the plan once the goals are achieved, and employee has resumed normal duties. However, the line manager should continue to monitor the employee for a period to ensure their return to work can be sustained. They should also review the work related risks.

6.4 Return to Work (RTW) Plans

Every worker who takes time off work for more than a few days is likely to need some type of plan to help them return to work. This plan will detail the duties the employee will undertake, any modifications to work equipment, and the hours of work. If the RTW plan involves a temporary adjustment to work arrangements (e.g. different tasks), the duration over which these tasks will be performed should be specified. If the RTW plan includes temporary adjustment to working hours, the initial hours of work, and the increase in hours worked should be specified. Review dates should be included in the plan, so the individual's condition can be monitored.

The plan should specify goals for the individual, and should be developed and agreed with the individual, their line manager and healthcare provider. A named individual (e.g. line manager or case manager) should review the individual's progress against the plan, and modify it if necessary.

6.5 Key features of a RTW plan

The most important feature of a successful RTW Plan is that all the key players have agreed on what is going to happen, who will do it, and when. This means every RTW plan needs to be individualised. There is no 'one size fits all' approach.

In general, the plan should contain the following information:

- Details of any temporarily adjusted work arrangements. These are nearly always temporary, and may involve modifications to work tasks or hours, for example. Some changes made in the workplace effectively become permanent, such as modifications to a workstation or having a new chair. However, when temporarily adjusted work arrangements such as modified work tasks or hours are put in place this invariably involves a limited timeframe.
- Clear goals should be specified, which are achievable and can be measured as milestones.
- A timeframe which provides a start and end point, with appropriate steps. For example, a graduated RTW approach may involve an initial phase where hours are built up doing a different set of tasks, then the next phase might involve a graduated transition to usual tasks.
- Access to important services such as ongoing treatments and other healthcare.
- Defined review points. This allows for adjustment as it is being implemented when necessary. For example, a graded RTW programme may be accelerated, or slowed down, depending on progress actually achieved.

6.6 How to help those who are absent for longer periods

Most pain, particularly back pain, resolves relatively quickly, and the actions outlined above should help ensure those who have discomfort are able to stay in work or return to work. In a minority of cases the pain is of longer duration. Identifying that individuals have pain early on in its development means that there is opportunity to make appropriate changes and manage the individual, and help avoid it becoming a longer term problem. For those whose MSD-related absence continues for longer periods (e.g. over 6 weeks) it can be helpful for them to undergo a rehabilitation programme which can help restore their function for work activities (work hardening), manage their pain,

and help change attitudes and beliefs towards discomfort. Such a rehabilitation programme should be focussed specifically on the tasks and activities of the workplace, and should be conducted by a competent healthcare provider who has experience in this area.

Further specialist treatment may be required for those with longer term discomfort, such as Cognitive Behavioural Therapy (CBT), to help the individual manage their pain more effectively, and functional capability assessment to identify tasks the individual is able to do.

The principles relating to case management should still be applied; it is necessary for good communication between the organisation and the rehabilitation provider so that the rehabilitation provider is aware of the work and workplace adaptations that may have been made, and of the requirements of the job. They should also feed into the individual's return to work plan.

7. Summary

This document presents a model of active case management for employees with MSDs. The model may be used by all sizes of organisation, and should be suitable for all forms of MSD. However, it will need to be adapted and tailored for each specific organisation and individual with an MSD. The important points are to respond to the needs of individuals quickly, make appropriate arrangements for them (which may include treatment and workplace changes), and gain agreement from the individual, employer, healthcare provider and case manager as to the individual's planned return to work if absent.

The role of the case manager may be taken by an occupational health professional or the employer. In simple cases the employer may be able to manage the case effectively. For more complex cases which are typically of longer duration, an experienced case manager may be able to assist with the employee's treatment and return to work.

Adopting a model such as this can assist with the successful management of those with MSDs. This can help reduce costs and staff turnover, and contribute to the success of your organisation.

Appendix A: Policies and procedures

A1: Policies and Procedures content

A POLICY on managing MSDs should include the following elements. These will need to be tailored to your organisation so that they complement other related policies.

- Definitions
- Policy statements
- Responsibilities
- Exclusions and related policies

Definitions should describe what is meant by the key terms that the policy relates to e.g. 'MSDs' and 'rehabilitation'.

Policy statements are statements of what is to be delivered and achieved (this does not require a description of 'how' this will be delivered and achieved).

Responsibilities outline who is expected to do what in order for the policy statements to be achieved.

Exclusions should be outlined in the policy (e.g. if the organisation decides not to provide support for those with MSDs caused by non-work activity). It may be appropriate to link the policy to **other related policies** e.g. Sickness absence management policy, Health and safety policy etc).

An example of a Policy on managing MSDs is provided below.

PROCEDURES are descriptions of the processes by which the policy statements will be achieved. These may be linked to other procedures that are already in place e.g. informing employees of the risks of MSDs during induction training.

A2: Example Policy for Managing Musculoskeletal Disorders

A2.1 Introduction

Organisation A is committed to protecting and promoting the health of employees. Musculoskeletal disorders continue to be a major cause of sickness absence in the UK and our data monitoring reveals that they represent a significant proportion of our own sickness absence. Musculoskeletal disorders can be caused by a range of activities in and outside work or a combination of both. This policy outlines our commitment to preventing musculoskeletal disorders at work as well as our support to staff who experience musculoskeletal disorders whether or not they are caused by work.

A2.2 Definitions

'Musculoskeletal disorders' (MSDs) refers to soft tissue pain or discomfort that may be associated with injury and results in limitation or disability. In this definition we are excluding fractures, cancer, and rheumatic and degenerative diseases that may also result in discomfort and disability and may require particular healthcare interventions.

'Active case management' describes the goal-oriented approach to achieving specific work retention and return to work outcomes. Active case management is usually undertaken by someone designated as a 'case manager'. Case managers use a range of methods and techniques including, but not limited to, a screening and intake process; assessment; planning; service arrangement; and, monitoring and evaluation of outcome. Case managers provide coordination, facilitate communication, and work collaboratively with treatment providers, the employee, and the workplace to ensure an early and sustainable return to work. The case manager remains involved until a satisfactory outcome has been achieved.

'Rehabilitation' refers to restoration of productive activity. The focus in this document is 'work rehabilitation', which can also be described as 'occupational' or 'vocational' rehabilitation. It involves multi-dimensional methods to facilitate work retention and return to work outcomes for employees with injuries or diseases that have led to time off work. It is recognised that the workplace is important in helping the employee to recover.

A2.3 Policy statements

We will:

- Inform existing and new employees of the risks of developing musculoskeletal disorders at work, in particular those who carry out high risk jobs / tasks.
- Inform existing and new employees of simple steps they can take to prevent musculoskeletal disorders and minimise the long term impact of new / existing musculoskeletal disorders.
- Provide an accessible and useable system for reporting musculoskeletal disorders and encourage employees to report symptoms early.
- Encourage retention of staff who experience musculoskeletal disorders, which may require adjustments to work, work equipment or work arrangements.
- Develop a 'Return to Work' approach based on best practice.

- Monitor and review individual cases of musculoskeletal disorders as well as the Policy and associated Procedures for managing MSDs.

A2.4 Responsibilities

The employer and every employee have responsibilities under this policy.

Employer

- Inform existing and new employees of the risks of developing MSDs at work, in particular those who carry out high risk jobs / tasks.
- Inform existing and new employees of simple steps they can take to prevent musculoskeletal disorders and minimise the long term impact of new / existing musculoskeletal disorders.
- Provide an accessible and useable system for reporting MSDs and encourage employees to report symptoms early.
- Encourage retention of staff who experience MSDs, which may require adjustments to work, equipment or work arrangements.
- Develop a Return to Work approach based on best practice.
- Monitor and review individual cases as well as the overall approach.

Line managers

- Encourage staff to report symptoms early using the appropriate procedure.
- Discuss jobs / tasks that are contributing to the MSD or making it worse and any appropriate changes that can be made to the work, equipment or work arrangements.
- Seek support and advice in managing cases of MSDs from appropriate persons.
- Work with relevant persons involved in the development and implementation of the Return to Work plan.

Employee experiencing MSD

- Report symptoms early, as per reporting procedure.
- Cooperate with line manager in seeking suitable adjustments to work, equipment and work arrangements to support retention at work.
- Follow advice of therapist or other health professional.
- If absent, work with relevant persons in development and implementation of the Return to Work plan.

Other employees (including those experiencing MSDs)

- Follow the information and advice provided by the employer during induction / employment in relation to MSDs.
- To support employees with MSDs, particularly where there are temporary adjustments to work or work arrangements.

Healthcare provider (of treatment for those with MSDs)

- Provide appropriate treatment and advice for each individual case, considering the work that the individual is carrying out.
- Consider any psychological as well as physical obstacles to retention / Return to Work.
- Consult with all stakeholders in development and implementation of Return to Work plan

A2.5 Exclusions and related policies

We aim to provide therapy and support to all staff that are experiencing MSDs, whether or not it is caused or made worse by work.

Please see the following related policies:

- **Sickness absence management policy** for how to ensure effective and consistent management of absence, address questions to the Human Resources Department.
- **Health and safety policy** for how to assess the risks of jobs and tasks, seek advice from the health and safety manager or occupational health to support you in developing appropriate adjustments.

A2.6 List of procedures

The following is a list of some of the procedures that might be required to support the Policy for Managing Musculoskeletal Disorders:

- Managing absence (see absence management procedures)
- Reporting procedure for symptoms of MSDs
- Induction training (MSD awareness and procedures element)
- Ongoing awareness training (particularly for higher risk jobs and tasks)
- Assessing risks associated with MSDs
- Developing a Return to Work plan

Appendix B: Points to consider when setting up a programme

The following points should be considered when setting up an MSD case management and rehabilitation programme.

Which workers should be case managed?

Some organisations make a distinction between whether the MSD was work caused or not, as regards the treatment they will provide. However, many organisations consider that actively managing those with an MSD which is having an impact on their work (whatever the cause) is the most appropriate scope.

Consideration may need to be given to provision of the service for temporary or agency workers.

Payment arrangements

Will those who are on a graduated return to work (transitional work arrangements) be on full pay during their transfer period? Not offering full pay can undermine the effectiveness of a programme as the individual may be financially better off not being at work, than being at work on reduced pay, or if having to use annual leave to attend clinics / work reduced hours in their return to work.

Can the case be managed in-house?

This decision will need to take account of the following:

1. How complex is the case? If it appears that the MSD is likely to be of short duration, it may be appropriate to case-manage it in-house by a non-health professional. More complex cases may require further support.
2. Does the organisation have appropriate personnel in-house to be able to undertake case management? If there is an in-house occupational health service it may be appropriate for them to manage it. If an in-house occupational health service is not available, is there an appropriate manager? This may be the individual's line manager, but if there are potential conflicts in the relationship, it would be better if it were a different manager, or perhaps HR. The person selected to be the case manager should have good communication skills, and should be familiar with and follow the guidance for case managers in this document.

Selection of an external case manager

If the organisation decides to use an external case manager how will they be selected? Things to look for include:

- Experience concerning MSD case management
- Qualifications or affiliations. Currently there are a few formal qualifications available in MSD rehabilitation, although many professional courses for healthcare providers will cover rehabilitation. Currently there are two case management associations in the UK (The Case Management Society UK and the Vocational Rehabilitation Association).

Liaison with GPs

If the organisation's internal case manager is liaising with the individual's GP, what should they tell the GP?

- Make the GP aware of the provisions made in the workplace to support the individual in their RTW. Seek the GP's support for facilitating any necessary interventions to assist the individual RTW. Provide information to the GP on the nature of the work (e.g. specific tasks) and ask the GP for a view on the individual's fitness for work.
- Seek a 'fit note' from the GP, : i.e. an indication of what the person can do rather than what they can't - the standard Med 3 form has provision for this. If the GP specifies restrictions, what they are and how long should these restrictions be in place for?



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RR 493