

Fit For Work?

Musculoskeletal Disorders and Labour Market Participation

Supported by a grant from Abbott

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By Professor Dame Carol Black, The Government's National Director for Health and Work

In the recent past, the onset of many chronic health conditions tended to bring the curtain down on a working life. Work was seen as being for the fully fit and the wholly well, and the onset of ill-health meant that the role of worker would invariably come to an end for an individual. Thankfully, we are moving on from such blanket assumptions. Work does not have to be so inflexible. And people and their health are seldom so black-and-white. Instead, very gradually, we are moving towards an understanding that for some people work can be part of their treatment because work is an important aspect of life that helps people keep hold of their self-confidence and sense of being productive. Meanwhile, employers have learnt that retaining and supporting people through many common health complaints is both a more sensitive and a more cost-effective way of handling absence than absorbing the substantial costs of redundancy and recruitment as soon as someone becomes ill. Once the relentless focus on incapacity is replaced by a perspective that values what people can do, all manner of innovative, practical steps begin to suggest themselves.

The conditions covered in this report focus on what together comprise the second biggest cause of work-related absence in the UK: MSDs, or musculoskeletal disorders. While they are all very different in their implications, taken together, more than a million people each year are affected by them – two million once their families are taken into account. This amounts to a profound burden on individuals, on employers, on our health service, and on society. And in addition, there is some compelling evidence emerging that these conditions affecting joints, muscles and tendons are closely inter-related with mental health conditions as well, such as stress and anxiety.

Yet the message of this report is that with early intervention and the right support arrangements – and in particular through partnerships between the patient, employers, GPs and specialist medical practitioners – many of these conditions can be managed much better than they are at present. Doing so is fundamental to the government's health, work and wellbeing strategy: management of chronic health conditions is an issue our nation must improve on and which forms a central part of the remit of the Vocational Rehabilitation Task Force.

For some people, inevitably, work may no longer be a practical option as serious and debilitating conditions worsen. Yet it is not overoptimistic to hope that for many more people, better treatment of MSDs holds the potential both to cut high rates of worklessness in the UK and perhaps to boost our position in international league tables of productivity as well. MSDs sometimes draw the reaction that they are just something that have to be lived with – wear and tear, in other words. That there is no ‘cure’ for MSDs should never be an excuse for this kind of shrugging apathy. Treatment, (whether through drug therapies or physiotherapy), active and early intervention, good management, high quality job design and better rehabilitation are the keys to greatly improving how we handle many of our most prevalent causes of sickness absence.

I hope that in time MSDs will become less relevant to work and working life. Until then, efforts to raise awareness of them must continue with ever greater urgency. I welcome this report as a valuable contribution to the debate.

A handwritten signature in black ink that reads "Carol Black". The signature is written in a cursive style with a large, prominent loop at the top of the first letter 'C'.

Carol Black

1. Executive summary

The health of British workers is giving us serious cause for concern. Up to a quarter of the workforce is not healthy enough to drive the improvements in productivity which the UK needs to thrive in an increasingly globalised, knowledge-based economy. Despite record levels of employment and job growth, over 2.6 million people of working age are claiming Incapacity Benefit (DWP, 2007). There is overwhelming evidence that worklessness is, itself, bad for health and that rehabilitation back into work can positively affect physical health, psychological well-being and raise people out of poverty.

Of all the causes of work-related ill-health, 'stress' grabs the headlines because it results in the loss of over 10 million working days each year at a cost to UK employers of in excess of £3.7 billion.

However, amid the understandable concern about 'stress' and the psychological well-being of the UK workforce, one fact seems to have become obscured. The number of working days lost to 'stress' might be high, but almost twice as many workers are affected by musculoskeletal disorders (MSDs) such as back pain, arm or neck strains or diseases of the joints. Indeed, MSDs are, by some margin, the most commonly reported cause of work-related ill health in the UK, affecting an estimated 1,012,000 people in 2005/2006 – twice as many as those suffering from 'stress'. The Health and Safety Executive (HSE) estimated that MSDs were responsible for 9.5 million lost working days in 2005/06, an average of 17.3 days absence for each person suffering from an MSD. The cost of these conditions to society was calculated to be £5.7 billion per year in 1995/1996 (HSE, 1999). When adjusted to 2007 prices, this figure reaches over £7 billion.

This project has looked in some detail at the impact that MSDs have on the working lives of thousands of UK workers, the adequacy of the treatment and support they receive, their experiences at work, and the human and financial costs involved. Specifically, we have looked at back pain, work-related upper limb disorders (WRULDs) – two groups of conditions which are usually characterised by non-specific and short episodes of pain and incapacity – and rheumatoid arthritis (RA) and ankylosing spondylitis (AS), two specific conditions that are often progressive and increasingly incapacitating. We conducted a review of the recent academic and practitioner research on the relationship between these MSDs and labour market participation, and conducted 15 interviews with acknowledged experts in this field.

The impact of MSDs

MSDs have a significant impact on people's ability to work; not only on an individual but an aggregate basis. Together, they affect the productivity and labour market participation of over one million members of the working population. Evidence suggests that:

- Over 2.5 million people in the UK visit their GP with back pain each year. At any one time, 33 per cent of the UK population are suffering with back pain and up to 80 per cent of the adult population will suffer significant back pain at some time in their life. In the vast majority of patients with back pain no specific diagnosis is given.
- Over 375,000 people suffer from symptoms of work-related upper limb disorders which can affect the tendons, muscles, joints, blood vessels and, or, the nerves and may include pain, discomfort, numbness, and tingling sensations in the affected area.
- Almost 400,000 people in the UK have rheumatoid arthritis, with 12,000 new cases reported each year. It is estimated that almost a quarter of RA sufferers stop work within five years of diagnosis. This figure can rise to 40 per cent if the effects of related conditions such as depression, cardiac and respiratory complaints are taken into account.
- Ankylosing spondylitis is a progressive and chronic rheumatic disorder that mainly affects the spine, but can also affect other joints, tendons and ligaments. Over 200,000 people visit their GP with AS every year. Reported unemployment rates are three times higher among people with ankylosing spondylitis than in the general population. It is a condition which is most often diagnosed among men in their early twenties and, in the most serious cases, can severely curtail the working lives of sufferers.

The effects of incapacity and pain from these and other MSDs can impact on several aspects of an individual's performance at work, including:

- stamina
- cognitive capacity or concentration
- rationality/mood
- mobility
- agility

It is becoming clearer that MSD sufferers are also likely to have depression or anxiety problems related to their conditions. This can affect the severity of the condition, the

ability of the individual to remain in work, the length of time they spend away from work and the ease with which they can be rehabilitated. Research suggests that a significant proportion of GPs, employers and even individual MSD sufferers do not fully appreciate the impact of 'stress' on the severity of physical incapacity. The **biopsychosocial model** of health emphasises the interplay between the **biological** (eg disease, strain, joint damage), the **psychological** (eg disposition, anxiety) and the **social** (eg work demands, family support) and represents a helpful way of assessing the causes of some MSDs, of planning treatment and management and of approaching rehabilitation into the workplace. It is not being adopted as widely as it should, however, because many GPs and employers find it difficult to look beyond the immediate physical symptoms.

Work can be both cause and cure. Whilst the physical conditions of work may cause or aggravate musculoskeletal symptoms, the impact or outcome on sufferers (absence from work and disability) is strongly associated with psychosocial factors. Evidence suggests that work can help ameliorate the deterioration of many conditions and help recovery from MSDs. However, many GPs and employers mistakenly believe that the MSD sufferer must be 100 per cent well before any return to work can be contemplated.

The cost of MSDs

Estimates suggest that MSDs are a significant cost to employees, employers and society as a whole.

It has been estimated that NHS inpatient treatment costs for MSDs were £607 million in 2001-2 (two per cent of total inpatient costs). Up to 30 per cent of GP consultations concern musculoskeletal complaints. The total **direct** cost of treating MSDs was estimated at £1,198 million for 2001-2. Adding in a number of indirect costs, such as the impact on carers and families, absence from work and what is termed 'presenteeism', or a loss of productivity in an employee as a result of ill health, the Health and Safety Executive (HSE) has estimated the total cost of MSDs to society at over £7 billion a year (adjusted to 2007 prices).

With an ageing workforce, a growth in obesity, a reduction in exercise and physical activity and general fitness in the general population, it is likely that the incidence and effects of MSDs will intensify and worsen rather than improve in the short-to medium term. We are concerned that this will affect the quality of working life of many UK workers,

and that the productive capacity of the UK workforce will be adversely affected at a time when we need it to be on top form.

What can be done?

There are five principles which GPs, employers, employees and the government should focus on if we are to improve the working lives of workers with MSDs.

- **Early intervention is essential.** The overwhelming evidence is that long periods away from work are usually bad for MSD patients – the longer they are away from work, the more difficult it is for them to return. Early action, preferably in partnership between GPs, the patient and their employer, can help achieve a balance between the individual's need for respite and their need to work. For some MSD patients early access to physiotherapy or to drug therapies can reduce the severity, impact or progression of the condition – a delay in diagnosis or treatment can make recovery or rehabilitation much more difficult.
- **Focus on capacity not incapacity.** Employers and employees can 'catastrophise' MSDs, imagining their effects to be far more serious or insurmountable than is strictly the case. Most workers with MSDs can continue to make a great contribution at work if they are allowed to. They do not need to be 100 per cent fit to return to work – a little lateral thinking will allow managers to give them useful work to do that supports them on their journey back to full productive capacity. Remember that the patient is also a worker.
- **Imaginative job design is the key to rehabilitation.** Managers can change the way work is organised (including simple changes to working time arrangements) to help prevent MSDs getting worse and to help MSD sufferers to return to work. They need to do this in a way which preserves job quality, avoids excessive or damaging job demands and takes heed of ergonomic good practice.
- **Think beyond the physical symptoms.** Clinicians should bring to bear their understanding of the biopsychosocial model and the limitations of the biomedical model in their diagnosis and treatment of the patient and – most importantly – their assessment of the role that a job might play in helping someone to stay active and avoid isolation. GPs are ideally placed to identify the early presentation of many MSDs. Where appropriate, GPs should seek to refer patients to specialist teams as early as practicable, to enable management of the condition to begin.

- **Assess the direct *and* indirect costs of MSDs.** We need some better measures to assess the social, economic and work impact of MSDs to allow the Department of Health (DH) and the Department for Work and Pensions (DWP) to assess and monitor both the clinical and labour market impact of MSDs. For example, the National Institute of Health and Clinical Excellence (NICE) guidelines may need to take the clinical and labour market effects more explicitly into account when evaluating treatments and therapies. Changes to the NICE Statutory Instrument would allow them to take appropriate account of the benefits of full and active labour market participation. Economically efficient guidance on drug therapies may protect the NHS budget but can put extra strain on that of the Department of Work and Pensions.

The evidence presented in this report illustrates that a large proportion of working age people in the UK are, or will be, directly affected by musculoskeletal conditions (MSDs). This can have very significant social and economic consequences for these individuals and their families, it can impede the productive capacity of the total workforce and parts of UK industry, and it can draw heavily on the resources of both the NHS and the benefits regime.

We have found no shortage of clinical, epidemiological, psychological and economic evidence on the nature, extent and consequences of the MSD problem in the UK. However, there still seems to be a lack of coherence or 'joined-up' thinking and action which focuses on the MSD **patient as worker**. While the number of advocates of the biopsychosocial model as it applies to all MSDs is growing, we noted that some of those who can have most impact on fulfilling the labour market participation of workers with MSDs have yet to embrace its principles as fully as they might.

2. Introduction

Sicknote Britain, skiving and stress

Headlines about 'work-shy' employees have been a staple of press coverage about UK workplaces for decades. There is something mildly entertaining about stories of workers taking illicit time off work to watch the World Cup, or coming up with fanciful excuses to explain a cheeky day off caused by a hangover. We've even woven ourselves an elaborate vocabulary to describe this phenomenon – 'throwing a sickie', 'skiving', 'malingering' and 'duvet days' are just a few examples.

At one level, this image of 'sicknote Britain' is harmless and quaintly self-deprecating. In any case, the headlines about 'sickies' are neatly counterbalanced by those which focus on the pervasive long-hours work cultures in many of our organisations, especially when compared with our European neighbours.

But, as ever, the truth about the health and well-being of the UK working population is a little more complex than the headlines imply and, although the overall rate of sickness absence has stayed at about the same level for the last thirty years or so, we have witnessed some very significant – and concerning – changes in the nature and composition of work-related incapacity during this period.

There are at least three 'big picture' reasons why we should be troubled about the health of our workforce:

1. **The productivity gap.** For several years, the USA, Germany and France have led the UK in the labour productivity league table. The conventional cure for this problem has been an array of measures which include investment in technology and innovation, labour market deregulation, and up-skilling the workforce. While each of these, to a greater or lesser extent, have a part to play, none of them takes account of a fundamental problem which represents an increasingly serious barrier to prosperity, the fact that up to a quarter of the British workforce is not healthy enough to drive the improvements in productivity which the UK needs to thrive in an increasingly globalised, knowledge-based economy (ONS, 2004).
2. **The scourge of worklessness.** Despite record levels of employment and job growth, over 15 per cent of UK households are still 'workless' (ie nobody is employed) (NAO, 2007) and over 2.6 million people of working age are claiming Incapacity Benefit (DWP, 2007a). There is overwhelming evidence

that worklessness is bad for health and that rehabilitation back into work can positively affect physical health, psychological well-being and raise people out of poverty – another factor strongly predictive of poor health.

3. **Quality of life in an ageing population.** There are over 13 million people in the UK who are aged between 50 and 69 years, and over 55 per cent of these are still employed. Indeed, the employment rate of those over the State Pension Age is increasing (over one million and rising). Growing life expectancy, poor pension provision and an ageing population will place pressure on the economy, on those still at work and on the NHS unless we improve the lifestyle choices, health and well-being of today's working age population. Health and quality of life, both at work and in retirement, are serious challenges for the UK economy, for society at large, for communities, families and individuals.

Despite the stability in the headline rate of sickness absence, we have witnessed a significant increase in the proportion of the total made up of longer-term absences: workers with more serious illnesses or chronic conditions. By some margin, the majority of these longer-term absences can be attributed to two 'clusters' of conditions. The first is what is now popularly known as 'stress', though should more accurately be termed 'common mental health problems'. These include depression, anxiety disorders and a number of other conditions. The second, known as musculoskeletal disorders, are the subject of this report. 'Stress' grabs the headlines because, each year, work-related 'stress' results in the loss of over 10 million working days, at a cost to UK employers of in excess of £3.7 billion (Lehki et al, forthcoming). According to the Health and Safety Executive, in 2005/06:

- More than 400,000 people in the UK believed that they were experiencing work-related 'stress' at a level that was making them ill.
- 195,000 people first became aware of work-related 'stress', depression or anxiety in the previous 12 months.
- According to Lehki et al 15 per cent of all working individuals thought their job was very or extremely 'stressful'.

Many explanations for the growth in work-related 'stress' have been suggested (Lehki et al, forthcoming). These include increased workloads, concerns over job security, longer working hours, deteriorating 'work-life balance', increased personal debt and

marital breakdown. In addition, some GPs have been criticised for being too quick to sign patients off work with 'stress' without probing the underlying causes more thoroughly. Lehti et al also point to cultural changes which may have made 'stress' more acceptable:

'As the stress phenomenon has been popularised, less stigma has come to be attached to admitting feelings of stress or inability to cope. Increasingly, we interpret events and emotions in terms of stress. This growing legitimisation has been much assisted by representations of stress in the media, the professionalisation of stress treatments ('medicalisation' of workplace problems, (Harkness et al 2005) and a culture in which it can be a matter of pride to describe one's job as having a high degree of stress'.

Economists such as Richard Layard (Layard, 2004) have highlighted the economic and social costs of worsening mental health in the UK. He estimates that mental health is as economically important as poverty in the UK (about two per cent of GDP) and argues that better and quicker access to clinical interventions and so-called 'talking therapies' such as cognitive behavioural therapy (CBT) would help sufferers play a full part in society and at work.

Nevertheless, the evidence also suggests that while levels of 'stress' amongst UK workers remain very high, they appear to have peaked in the late 1990s and early 2000s, since which time they have stabilised.

Musculoskeletal disorders – out of the shadows?

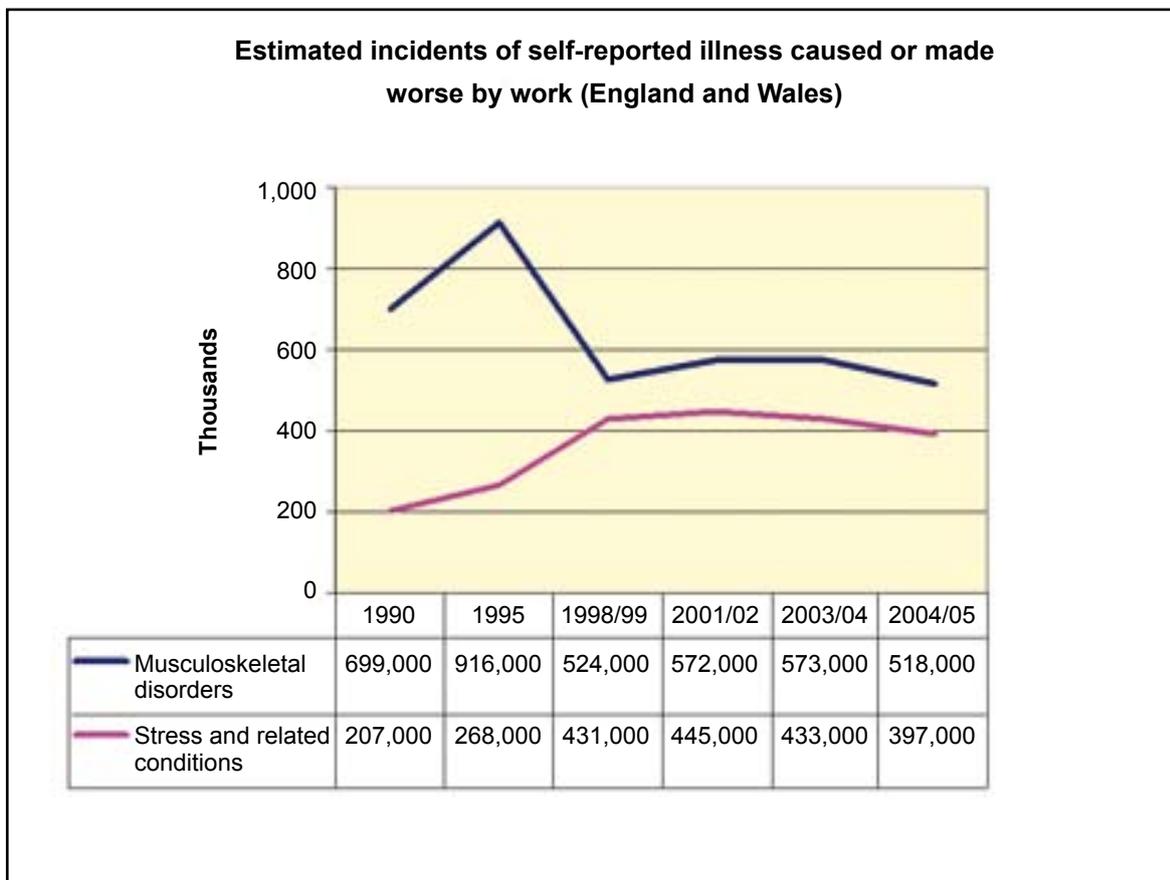
Amid the understandable concern about 'stress' and the psychological well-being of the UK workforce, one fact seems to have become obscured. The number of working days lost to stress and related conditions might be high, but almost twice as many workers are affected by musculoskeletal disorders (MSDs). Indeed, MSDs are, by some margin, the most commonly reported cause of work-related ill health in the UK, affecting an estimated 1,012,000 people in 2005/2006 (HSE 2007)¹. HSE estimate that MSDs were responsible for 9.5 million lost working days in 2005/06, an average of 17.3 days absence for each person suffering from an MSD. The cost of these conditions to society was calculated to be £5.7 billion per year in 1995/1996 (HSE, 1999). When adjusted to 2007 prices, this figure reaches over £7.4 billion².

¹ This figure is for people who have ever worked in the UK

² HSE 1995/96 updated for RPI inflation using the Office for National Statistics recommended methodology results

'Musculoskeletal disorders' is an umbrella term covering over 200 conditions that affect the muscles, joints, tendons, ligaments, peripheral nerves and supporting blood vessels, causing pain and functional impairment to sufferers (Punnett et al, 2004). These include widely known conditions such as arthritis and back pain, injuries caused by trauma, such as fractures, and other conditions that are the result of genetic or developmental abnormalities, as well as bone and soft tissue cancer (DH, 2006). It is estimated that up to 30 per cent of GP consultations concern musculoskeletal complaints (DH, 2006). Figure 1 shows that, during the last 20 years, the incidence of MSDs among UK workers peaked in the mid 1990s. It also shows comparisons with cases of stress and related conditions that were caused or made worse by work.

Figure 1: Work-related illness 1990-2005



Source: HSE, 2005

What this data masks, however, is the proportion of people who have both MSDs *and* a stress-related illness. There is a growing body of evidence which tells us that having chronic low back pain, or a progressive condition such as rheumatoid arthritis, increases the risk of depression or anxiety (Dickens, 2002). Moreover, the chances of a speedy return to work after an MSD-related absence are enhanced if people have positive mental health (Disorbio et al, 2006).

The large majority of musculoskeletal disorders are non-specific, that is, they are difficult to diagnose and they may manifest themselves only periodically. These conditions have a significant impact upon individuals, health care systems, and national economies and societies. The lifetime prevalence of these diseases has been estimated at between 60 and 80 per cent in developed countries (WHO, 2003). Indeed, most people will be affected by an MSD at some point in their life.

In spite of the complexity of addressing MSDs it is a problem that it is too important and too costly to avoid, for individuals, employers and government. When the World Health Organisation (WHO) launched Bone and Joint Decade in 2000, it identified spinal disorders and rheumatoid arthritis as two areas of priority for research. At EU level, the 2007 Lighten the Load campaign aims to raise awareness of MSDs amongst the public, employers and government. In Britain, the Department for Work and Pensions have set the HSE targets on reducing the number of reported MSDs between 2008 and 2010. The Department of Health (DH) has also developed a new national service framework on the treatment of MSDs (DH, 2006) and the Department for Work and Pensions (DWP) has announced a 'Vocational Rehabilitation Taskforce'.³

There is now a growing body of research which shows that early intervention, treatment, condition management and vocational rehabilitation can significantly reduce the damage which MSDs do to physical and mental health, to labour market participation, to labour productivity and to the social and family lives of patients.

The impact of MSDs on work

This project has sought to address each of the following questions:

1. What is the impact of MSDs on employment and economic performance in the UK? How is this likely to change in the context of future demographic, workforce and lifestyle changes?

³ <http://www.dwp.gov.uk/mediacentre/pressreleases/2007/jun/hsc027-180607.asp> 'Minister announces new task force to tackle sickness absence', 18 June 2007

2. What is the relationship between work and MSDs? What impact do biological, psychological and social factors, including workplace factors have on MSDs?
3. How well do GPs and occupational health professionals understand and deal with MSDs as they relate to the workplace? How well equipped is the NHS to provide early intervention, rehabilitation and other support for people with these conditions?
4. What interventions can policy-makers and employers make to ensure that those with MSDs:
 - a. retain their jobs
 - b. maximise their quality of working life
 - c. maintain access to (and routes back into) employment?

In addressing the objectives outlined above, we have used the following methods:

1. **Desk Research:** Here we have drawn on existing published research from the medical, occupational health and health economics literature. This has enabled us to draw together the evidence on the nature, extent, impact and costs of MSDs to the economy, to employers and to individuals. We have examined a range of MSDs to assess the extent to which their impact varies and where policy and practice has been both strong and weak in terms of prevention and intervention.
2. **Expert Interviews:** We have conducted interviews with experts (see Appendix 1 and 2) across a number of disciplines to identify the main areas of policy and practice which need to be addressed by policy-makers, health professionals and by employers.

In addition to the wider picture, to focus the research, we have chosen to concentrate on four categories or groups of MSDs. These are:

- back pain
- work-related upper-limb disorders (WRULDs)
- rheumatoid arthritis (RA)
- ankylosing spondylitis (AS)

Back pain and the majority of WRULDS are categorised as non-specific and episodic.

They manifest themselves in disparate ways and may cause periods of intense discomfort and incapacity which may affect the ability of the individual worker to carry out their work. They may also abate for long periods. Many sufferers of these conditions, such as back pain, never seek treatment and most recover on their own.

RA and AS are specific and progressive diseases. Both are clinically diagnosed conditions that progress in a broadly predictable way. Both can have a significant impact on functional capacity at work and, in the long term, participation in the labour market. Most sufferers require clinical interventions over a prolonged period of time and the management of these conditions for those of working age should involve the active participation of clinicians, employers and occupational health professionals.

Together, these MSDs illustrate the effects of conditions from which over a million UK workers may suffer at any one time. Improving our understanding of the effects of these conditions, and what might be done to alleviate their impact, can yield significant social and economic benefits.

A note on definition

In the absence of a consensus on a clinical definition of many MSDs, navigating the literature on their prevalence, incidence, diagnoses, epidemiology, treatment and cost to society is a difficult task. The lack of standardisation and validation of the terminology and classification of MSDs is one of the reasons for the contradictory findings in the literature regarding the diagnosis, epidemiology, treatment and rehabilitation of these conditions (WHO, 2003).

Structure of the report

This report is structured as follows:

- Section 3 examines the extent of musculoskeletal disorders in the UK and the impact they have on attendance at work and labour market participation.
- Section 4 reviews the range of interventions which can improve job retention, rehabilitation and labour market participation among those with MSDs.
- Section 5 looks at the wider impact of MSDs, focusing on the direct and indirect costs of these conditions to the economy as a whole, to employers and to individuals and their families.
- Section 6 sets out our recommendations for employers, employees, GPs, occupational health professionals and for the government.

3. Work and MSDs

In the UK in 2005-6, MSDs were reported as the most common cause of work-related ill-health, above stress, depression and anxiety (common mental health problems). Of the two million people in the UK suffering from an illness that they believed was caused or made worse by their current or past work, an estimated 1,012,000 people reported symptoms of musculoskeletal pain (HSE, 2007). Most complaints related to the back (437,000 or around 43 per cent), followed by the upper limbs or neck (374,000) and lower limbs (209,000, see Table 1). Common mental health problems accounted for 420,000 cases. The incidence rate of 'stress' (the number of new cases in 12 months) has been higher than that of MSDs for many years but the prevalence rate of MSDs (the actual number of cases) has been higher than that for common mental health problems (HSE, 2007). Although MSDs undoubtedly contribute to absence rates, it is notable that they also have a significant impact on performance when at work. Whilst common mental health problems are generally the cause of employees taking more days absence from work⁴, work reportedly affects the condition of twice as many people with MSDs than with 'stress' (see Tables 1 and 2).

Table 1: Reported number of working days lost in 12 months (millions)

	Stress, depression, anxiety	MSDs
2001/02	12.9	11.8
2003/04	12.8	11.8
2004/05	12.8	11.6
2005/06	10.5	9.5

Source: HSE website

These figures highlight the importance not only of helping people return to work but of helping them to perform to the best of their ability while at work and suffering from an MSD. The findings also emphasise that people can work with many illnesses and the focus should be on their capacity to work, rather than their incapacity.

The figures presented in Table 2 do not include those suffering from MSDs who do not attribute their condition or its severity to their work. In addition, the figures presented do not indicate how many secondary symptoms were experienced as a result of the MSDs.

⁴ Note that whilst different methods of assessing sickness absence rates result in different figures for absence (see discussion in section 5) more days of absence are generally attributed to stress than MSDs, particularly in occupations classified as non-manual

Table 2: Work-related ill health in Britain, 2005-2006: Conditions caused or made worse by work

Type of work-related illness	Number of workers affected
Musculoskeletal disorders (MSDs):	1,020,000
<i>Back</i>	437,000
<i>Upper limbs or neck</i>	374,000
<i>Lower limbs</i>	209,000
Stress, depression or anxiety	420,000
Breathing and lung problems, including asthma	156,000
Hearing problems, including deafness and tinnitus	68,000
Heart disease, heart attack or other circulatory system problem	63,000
Headache and/or eyestrain	32,000
Skin problems	27,000
Infectious diseases (virus, bacteria)	27,000
other types of complaint	140,000
Total	1,958,000

Source: HSE website

It is important to remember the connection between the physical and the psychological. For instance, 'stress' can be related to physical conditions such as heart disease or high blood pressure. Equally, depression and anxiety can be a common side effect of prolonged MSDs (Dickens, 2002; Parkes, Carnell and Farmer, 2005).

Impact of MSDs on ability to work

The impact of MSDs on the individual and their ability to work varies significantly from person to person. Attempts to measure relative work disability differ according to methods of data collection, respondent selection and definitions of work disability. Work disability usually refers to cessation of employment, reduced working hours or claiming of disability benefits. These estimates rarely include estimations of lost productivity whilst at work.

MSDs, as outlined in the introduction can be non-specific or specific. The effects of specific MSDs are discussed below with particular reference to AS and RA. Other, largely

non-specific MSDs are described in relation to two main categories, back pain and work related upper limb disorders.

The impact and consequences of both specific and non-specific MSDs are extremely varied from individual to individual. However, the symptom common to all MSDs is pain, which has an impact on a person's ability to perform their job and therefore their work. Pain has been defined as 'an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage' (Merskey and Bogduk, 1994). If we accept this definition of pain as a sensory and an emotional experience we can see that the effects will go beyond physical ability to complete one's job tasks. The effects of pain from MSDs can thus impact on the following aspects of one's performance at work:

- stamina
- cognitive capacity or concentration
- rationality / mood
- mobility
- agility

An MSD can also have effects on safety aspects of work. If concentration or movement is affected by the condition or associated pain then some aspects of work may become unsafe. It must also be noted that, following diagnosis, some treatments can have significant side effects which affect an individual's ability to perform. Where particular hazards such as heavy machinery or driving are involved then safety aspects must be of utmost concern.

Work-related upper limb disorders

Work-related upper limb disorders (WRULDs) are MSDs affecting the upper part of the body caused or aggravated by work and the working environment. However, there is considerable debate about the definition and diagnostic criteria for WRULDs, which are also commonly referred to as 'sprains or strains', 'repetitive strain injuries or disorders', or 'cumulative trauma disorders'. Van Eerd et al (2003) identified 27 different classification systems for work related MSDs, of which no two were found to be alike. The fact that a single disorder is often described in different ways only amplifies the problem. Critically, Van Eerd et al found that the different classification systems did not agree on which disorders should be included. This definitional problem makes it difficult to calculate the

number of people suffering from WRULDs and to develop a common understanding of associated risk factors.

Whilst no agreed classification exists there is a common consensus that symptoms of WRULDs can present in the tendons, muscles, joints, blood vessels and, or, the nerves and may include pain, discomfort, numbness, and tingling sensations in the affected area. WRULDs can be specific and non-specific conditions (Aptel et al, 2002) and attempts at classification tend to focus either on the affected body area or the cause. Examples of WRULDs by body part include the following:

- Elbow: epicondylitis (tennis or golfer's elbow).
- Hand, wrist and forearm: carpal tunnel syndrome; de quervain's syndrome.
- Shoulder: tendinitis of the shoulder.
- Neck: neck pain.
- Back: acute lower back pain.

Classification by occupational causes refer to actions such as vibration of the hand and arm, which can result in Raynaud's Syndrome, for example. The breadth of the category of WRULDs means that almost all symptoms and impacts on work associated with MSDs are associated with WRULDs. Specific symptoms and impacts of MSDs are therefore discussed in more detail below with reference to back pain, RA and AS.

Back pain

Back pain is a very common complaint; 2.6 million people in the UK visited their GP with back pain in 2000 (ARC, 2002). A survey carried out by the British Chiropractic Association in 2004 found that at any one time, 33 per cent of the UK population are suffering with back pain and up to 80 per cent of the adult population will suffer significant back pain at some time in their life.⁵ In the vast majority of patients with back pain no specific diagnosis is given.

Back pain is common, episodic, often recurrent and generally self-limiting. It is defined as recurrent if several episodes occur in one year for a duration of less than six months, acute if an episode lasts for less than six weeks, sub-acute (7-12 weeks) and chronic if it endures for over 12 weeks. Back pain is a recurrent problem for many people, although this does not necessitate that symptoms will worsen. For the majority of sufferers pain will

⁵ <http://www.chiropractic-uk.co.uk/default.aspx?m=3&mi=4&ms=11&title=Back+Pain> Accessed 24 August 2007

disappear of its own accord within four to six weeks. In one study of people visiting their GPs because of back pain, 65 per cent were free of symptoms within 12 weeks (van der Hoogen et al, 1998 in Bekkering et al, 2003). Recorded absence is greatest amongst the minority of sufferers whose condition is chronic or recurrent. Most people who are affected by back pain either remain in work or return to work promptly. 85 per cent of people with back pain take less than seven days off, yet this accounts for only half of the number of working days lost. The rest is accounted for by the 15 per cent who are absent for over one month (Bekkering et al, 2003).

It is important to recognise that there is a difference between having symptoms, care seeking, lost productivity and disability, and the factors that contribute to them (Burton, 2005). This means that whilst an individual may experience musculoskeletal pain (in their back, for example), it is not possible to predict their strategies for dealing with illness or injury (seeking medical attention for example), how it will affect their work performance, whether they will take time off work and whether, ultimately, they will become one of the very small minority who become disabled by their condition. The important question is therefore why, when so many people experience back pain, does it have such an adverse effect on some and not others? There is a growing consensus that psychological factors are the differentiating factor as they are strongly associated with the progression of back pain from an acute to a chronic condition that affects two to seven per cent of people (Burton, 2005), and to disability (Burton, 2005; Bekkering, 2003).

Rheumatoid arthritis (RA)

RA is an example of a specific MSD. It is a form of inflammatory arthritis with a prevalence of between 0.3 per cent and one per cent in most industrialised countries (WHO, 2003). Data on the prevalence of rheumatoid arthritis derive largely from studies performed in the USA and Europe. Recent estimates of the prevalence rate in the UK suggest that the figure is roughly three times higher for women than men (at 1.16 per cent and 0.44 per cent respectively; Symmons et al, 2002). 387,000 people in the UK have RA, or 0.8 per cent of the adult population. There are an estimated 12,000 new cases every year (Symmons et al, 2002). The disease affects people of any age, although peak incidence is in the mid age range of the working age population, between the ages of 25 and 55 years. Epidemiological studies have shown that RA shortens life expectancy by around 6-10 years, and yet the disease is not mentioned on the death certificate of many people with RA when they die (ARC, 2002).

The exact cause of RA is unknown. Evidence suggests that it is an immune reaction, presenting as an inflammation affecting joints and other tissues. Risk factors include gender, family history of RA and specific leukocyte antigen (HLA) (WHO, 2003). Whilst the clinical course of RA is extremely variable, its features include pain, stiffness in the joints and tiredness, particularly in the morning or after periods of inactivity, weight loss and fever or flu-like symptoms. It affects the synovial joints, producing pain and eventual deformity and disability. The disease can progress very rapidly, causing swelling and damaging cartilage and bone around the joints. It can affect any joint in the body, but it is often the hands, feet and wrists that are affected. RA can also affect the heart, eyes, lungs, blood and skin.

The course of RA varies, meaning that it can go from a mild and even self-limiting form of the disease, to being severe and destructive within a short time (Young et al, 2000). RA is usually chronic (persistent) and sufferers often have 'flare-ups', although the reason for these is not known. In effect, 'flare-ups' mean that one day someone will be able to perform their duties and the next they cannot. This can be difficult for colleagues and managers to comprehend, and can make planning workloads challenging. Managing these 'flare-ups' in employment requires close communication and understanding between employees and employers.

The effects of the disease can therefore make it difficult to complete every day tasks, often forcing people to give up work. Work capacity is affected in most individuals within five years (WHO, 2003). One review of work productivity loss due to RA estimated that work loss was experienced by 36-85 per cent of RA sufferers in the previous year, for an average (median) of 39 days (Burton, 2006). Young et al (2002) reported that 22 per cent of those diagnosed with RA stopped work at five years because of their RA. However, in some cases the condition itself is not the main or only cause of having to leave work. Indeed, Young et al (2002) found a further group of respondents who stopped work due to a combination of RA and other personal factors, giving an estimate of 40 per cent of those with RA withdrawing from the workforce because of their condition.

A survey in 2007 by the National Rheumatoid Arthritis Society (NRAS) showed that people's working lifetimes appear to be significantly curtailed because of RA. Of those surveyed who were not in employment, nearly two thirds (229 out of 353, or 65 per cent) stated that *'they were not in employment because they gave up work early as a result of*

*their RA. This includes people above and below statutory retirement age. This represents 29 per cent of all respondents (229 out of 782)'. Whilst a high proportion cited pain and physical limitations as factors affecting their ability to perform their duties, 11 per cent of those respondents who were employed and 17 per cent of respondents who were unemployed cited a lack of understanding or support as a barrier to job retention. The report goes on to say that 'of respondents who had had to give up work early because of their RA, 13 per cent (30 out of 229) said that their employer had wanted them to leave once they became aware of the respondent having a long term health problem'. The NRAS survey also highlighted that the majority of RA sufferers would like to remain in work, something reflected in the fact that 55 per cent of their respondents said they would like to see 'increased government priority for **schemes to assist people with long term chronic health conditions to remain in work**' (bold text in original).*

Ankylosing spondylitis (AS)

AS is a specific progressive and chronic rheumatic disorder that mainly affects the spine, but can also affect other joints, tendons and ligaments. Up to 200,000 people visit their GP with AS every year (McCormick et al, 1995). First diagnosis is often made when people are in their teens and early twenties (the mean age of onset is 26). It affects more men than women: approximately 1 in 200 men and 1 in 500 women in Britain (NASS, 2007). Prevalence amongst white males is about 0.5 per cent. Research suggests that there is a strong genetic component to the cause of AS. Although anyone can get AS, it affects men, women and children in slightly different ways. In men, the pelvis and spine are more commonly affected, as well as the chest wall, hips, shoulders and feet. In women, it commonly affects the pelvis, hips, knees, wrists and ankles. The spine is generally less severely affected in women. Typical AS symptoms include pain (particularly in the early morning); weight loss, particularly in the early stages; fatigue; fever and night sweats and improvement after exercise. Again, as with RA, the temporal aspects of the disease require good management to ensure that someone can perform their job.

As with most MSDs, particularly specific MSDs, the effects of AS vary greatly from individual to individual. Approximately half are severely affected whilst others report very few symptoms. AS is generally considered to be a disease in which sufferers maintain relatively good functional capacity (Chorus, 2002), yet reported unemployment rates are three times higher among people with ankylosing spondylitis than in the general population (Boonen et al, 2001).

Recent research has provided evidence that physical health related quality of life of RA and AS sufferers was positively influenced by work (Chorus et al, 2003). The authors' conclusion was that work *'might be an important factor in positively influencing patients' perception of their physical performance'*. This finding concurs with Waddell and Burton (2006a) that overall work has benefits for us. The extent to which the workplace can have a positive or negative effect on development of MSDs is discussed below.

The impact of the workplace on MSDs

The risk factors for MSDs are wide ranging. Whilst there is broad consensus among experts that work may be a risk factor for MSDs, non-work activities such as sport and housework can contribute to musculoskeletal strain. Some studies, for example, have noted that a higher prevalence of musculoskeletal pain among working women may be linked to the fact that women are responsible for doing the majority of housework (Punnett et al, 2004). Intrinsic risk factors also have a part to play in the onset and deterioration of MSDs. Some intrinsic factors can be altered, others, such as genetic predisposition, cannot. Table 3 summarises the intrinsic risk factors for non-specific MSDs.

In terms of evidence and risk factors for the impact of work on MSDs a distinction needs to be made between 'work-related' disorders and 'occupational' disorders (Punnett et al, 2004).

Table 3: Summary of intrinsic risk factors for non-specific MSDs

Intrinsic factors
<ul style="list-style-type: none">• Obesity, height• Spinal abnormalities• Genetic predisposition• Pregnancy• Psychosocial stress: self-perception• Health beliefs: locus of control, self-efficacy, perception of disability and expectation• Family stress• Psychological stress: somatisation, anxiety and depression• Ageing

Source: adapted from WHO, 2003

Certain MSDs are recognised as occupational diseases by some European governments, such as wrist tenosynovitis, epicondylitis of the elbow, Raynaud's syndrome or vibration white finger and carpal tunnel syndrome (Eurostat, 2004). As such, the fact that work can cause and contribute to these conditions is widely recognised and the use of assessments of workplace risk to reduce the incidence of these conditions is well established.

The evidence linking other non-occupational MSDs and work is not conclusive and attributing cause and effect between specific aspects of work and particular parts of the body is difficult. However, many of the established risk factors that may contribute to the development of non-specific musculoskeletal conditions can be encountered at work; even if work does not cause a condition it may aggravate it. Moreover, if we consider risk factors beyond the physical, then the impact of the workplace on MSDs is likely to be much greater.

Whilst the link between most non-specific MSDs, such as low back pain, and work is not well evidenced, there are some job demands that are frequently cited as risk factors for MSDs including the following:

- rapid work pace and repetitive motion patterns
- heavy lifting and forceful manual exertions
- non-neutral body postures (dynamic or static), frequent bending and twisting
- mechanical pressure concentrations
- segmental or whole body vibrations
- local or whole-body exposure to cold
- insufficient recovery time (Punnett et al, 2004).

MSDs affect employees in all kinds of industries and occupations, although some are more high risk than others, and certain occupations are associated with strain on specific parts of the musculoskeletal system. Sectors reporting higher than average rates of MSDs include health and social care, construction and building trades, transport and mobile machine drivers and operatives, process plant and machine operatives and caring personal service operations (HSE, 2007).

Many jobs involve activities that can constitute a risk factor for MSDs. According to the European Working Conditions Survey, 17 per cent of European workers report being exposed to vibrations from hand tools or machinery for at least half of their working time, 33 per cent are exposed to painful or tiring positions for the same period, 23 per cent to carrying or moving heavy loads, 46 per cent to repeated hand or arm movements and 31 per cent work with a computer (Parent-Thirion et al, 2005).

Much of the attention that employers pay to the issue of MSDs and the impact of the workplace on their onset or deterioration is driven by a concern to avoid or limit litigation and ensure that they are fulfilling their duty of care by performing workstation assessments and giving guidance on manual handling, for example. However, this neglects a wider issue that other work associated factors can also contribute to MSDs. These aspects are often missed out in the literature and advice on dealing with health and safety⁶. Even where 'stress' is mentioned, the connection between psychosocial factors and physical conditions is omitted, reinforcing the primary focus on safety.

Generally there is an increased risk of injury when any of the physical risk factors mentioned above are combined, or adverse psychosocial factors, personal or occupational are present (Devereux et al, 2004). Psychological and organisational factors can also combine with physical factors to influence sufferers' probability of leaving work prematurely. For example, Sokka and Pincus (2001) reviewed 15 studies and showed that physically demanding work, a lack of autonomy, higher levels of pain, lower functional status and lower educational levels were predictors of an RA sufferer leaving work early. The evidence from Sokka and Pincus highlights that it is not only the physical elements of work that can influence someone's functional work capacity and likelihood of staying in the labour market. We must also consider the psychosocial and organisational factors of work.

Psychosocial and organisational factors associated with MSDs include:

- rapid work pace or intensified workload
- perceived monotonous work
- low job satisfaction
- low decision latitude / low job control

⁶ See for example the Health and Safety Executive brochures or the European Directives on health and safety at work

- low social support
- job stress.

Job stress is a broad term and can result from a variety of sources such as high job demands or a mismatch between skills and job requirements. In addition stress can result from abuse or violence at work. A total of 655,000 incidences of violence were experienced by workers in England and Wales in 2004/05 as recorded by the British Crime Survey. Taking into account different sources of data on violence, the Health and Safety Executive (HSE) reports that 42 per cent of assaults caused injury, the majority of which were minor, such as a black eye or bruising. The number of incidences has remained relatively stable over the last few years. However, with a change of work towards more frontline staff there is a possibility of an increase in violence at work. In the increasingly service based economy we find ourselves in (Brinkley, 2006) we must also recognise the impact of face to face interactions with customers and the public (Devereux et al, 2004).

Again, it is important to recognise the connection between the psychological and the physical. While job stress, including violence at work, might lead to lost productivity due to stress or common mental health problems, it may also lead to MSDs caused by tension or strain. In a study of 8,000 workers in the UK across 11 industrial sectors, Devereux et al (2004) found that *'high exposure to both physical and psychosocial work risk factors resulted in the greatest likelihood of reporting musculoskeletal complaints'*. An increased probability of experiencing a high level of pain has also been associated with low social support, low social anchorage or low social participation (Katz, 2002). 'Good work' and the provision of high quality jobs is therefore crucial (Coats and Max, 2005).

Summary

In this section we have considered the impact that MSDs have on a person's ability to work, both physically, as a result of the condition itself, and from the associated effects, such as loss of concentration from pain. We have also discussed the impact that the workplace can have on MSDs, both at onset and during the development of the conditions. Whilst there are many intrinsic risk factors for MSDs it is clear that the workplace has the potential to expose employees to other risk factors, both physical and psychosocial. Some of the well-established workplace risk factors are already recognised by many employers and assessed in order to minimise their impact, such as vibrations and workstation ergonomics. However, the impact of other workplace risk factors such as job quality are not as widely understood.

In order to address the productivity gap, to have a productive workforce across the entire range of the working age population (which covers an increasingly large age bracket) government and employers need to work together to ensure that people are fit to work. To achieve this it is important that all those involved – employers, clinicians, the government and employees – recognise that the physical, psychological and social factors associated with work have a significant impact upon an individual's fitness for work.

We have also highlighted that it is important to distinguish between risk factors for the onset of MSDs and risk factors for chronic illness and disability. Whilst the physical conditions of work may cause or aggravate musculoskeletal symptoms, the impact or outcome on sufferers (absence from work and disability) is strongly associated with psychosocial factors (Waddell and Burton, 2006a). Evidence suggests that work can help ameliorate the deterioration of conditions (Breen et al, 2005) and assist recovery from MSDs, where appropriate (Feuerstein et al, 2003; Chorus et al, 2003). This has implications for the development of strategies and interventions to ensure that those with MSDs are enabled to enjoy full and productive working lives.

The next section outlines current pathways of care and discusses the role that work can play in interventions to help people with MSDs remain in work and return to work quickly.

4. Interventions

The impact of MSDs, as we have seen, is significant; to the people suffering from them, to employers and to society as a whole. Their impact on the workforce has recently started to receive greater recognition. In an effort to contribute to a 30 per cent reduction in days lost from all workplace injuries and work related ill-health by 2009-10 the Health and Safety Commission (HSC) and the HSE have established a Musculoskeletal Disorders Priority Programme in recognition of the role MSDs play in the number of working days lost. Whilst it is widely acknowledged that early intervention is an essential part of addressing the onset of MSDs and absence caused by these conditions, there is still some way to go before people suffering from MSDs are given the best support possible to remain in work or return to work. Long waiting times for care, certain employer's lack of capacity to deal with sickness, lack of employee awareness about conditions and their management, and mixed messages on the effectiveness of various methods of workplace interventions or return to work programmes are all barriers to making good and healthy work a reality for those suffering from MSDs.

Fundamentally, we argue that there needs to be better channels of communication between employees, employers and clinicians to keep those with MSDs in work, where possible. At government level, the Department of Health, the Department of Work and Pensions and the Health and Safety Executive must work together more closely if the ambitious goals laid out in the Health, Work and Well-being strategy are to be achieved, and the targets outlined in the Musculoskeletal Framework are to become a reality.

The case for early intervention

Ensuring that workers who suffer from MSDs get access to the appropriate treatment and support fast must be a top priority for employers and healthcare professionals. Epidemiological studies of employees whose absence is caused by low back pain have shown that the longer the sick leave, the more difficult it is to get the employee to return to work and the higher the economic cost (Meijer et al, 2006). Sick leave has also been shown to have a negative psychological impact on employees (Meijer et al, 2005). Early intervention is therefore crucial to individual recovery and self-management, and may contribute to reducing the number of working days lost and reduced productivity caused by MSDs (although the evidence on the cost-effectiveness of specific return to work programmes is inconclusive).

The evidence, as summarised by Breen et al (2005), highlights why early intervention is so important:

'Whether or not early intervention would produce better outcomes is difficult to investigate. This is partly because groups being compared may have unknown characteristics that affect outcome and partly because most musculoskeletal episodes do not last long anyway. However, from the back pain evidence that dominates the research in this area, two things are clear; first, return to work is much less likely if longer-term absence has already occurred (Clinical Standards Advisory Group [CSAG], 1994) and secondly, changes related to determinants of disability, quality of life and chronic disability can appear by 14 days after onset, supporting a policy of early assessment (Kovacs et al., 2004). Once pain has become chronic, there are neurophysiological mechanisms, notably central sensitization (Melzack, 1999) and dorsal horn windup (Mannion and Woolft, 2000) that can perpetuate it.'

It is therefore in an employer's best interests to act early if they are to minimise the costs to the health of employees and to their business through absence. Based on their review of the available evidence the authors recommend that employees and employers should discuss and adjust work within the first week. If employees have concerns about their condition they should consult a healthcare professional and, following referral or diagnosis, advice and planned action, a review should be conducted within four weeks.

Job retention and return to work programmes are contingent on patients receiving appropriate medical care as quickly as possible. Yet the length of time that it takes to be seen by a medical professional is a complaint that we all too often hear from individuals and employers. In a recent study by the Engineering Employers Federation (EEF), 38 per cent of employers cited the limited capacity of the NHS to provide fast access to services, such as physiotherapy, as a barrier to successful rehabilitation (EEF, 2007). Moreover, since GPs are the first point of call for most MSD sufferers and the signatory of sick notes, they have a vital role to play in ensuring that patients are able to manage their conditions, and are pivotal in either obstructing or facilitating an individual's return to work. The following section outlines the standard pathways of care for those with specific and non-specific MSDs, and makes the case for ensuring that the outcomes of the 'patient journey' and vocational rehabilitation or other work-based interventions are more closely linked.

**The role of
clinical care
in job
retention and
rehabilitation**

The Department of Health published the Musculoskeletal Services Framework in 2006 as part of the government's strategy for long term conditions. This document outlines what the ideal 'patient journey' for people with MSDs should look like. It is worth noting that while the pathway makes a passing mention of rehabilitation and 'back to work' vocational reintegration the role of employers is not explicitly discussed and does not receive as much attention as it deserves within the document as a whole.⁷

For those with specific MSD, speedy referral to the appropriate specialist for investigation and treatment is vital. The government has set a target of 18 weeks from GP referral to the start of hospital treatment (DH, 2006), yet in practice, those with MSDs experience the numerous problems associated with long term care, including long waits, failure to undertake a multidisciplinary approach, poor advice on pain management, and a lack of clear integrated pathways (DH, 2006; NRAS, 2007; Luqmani et al, 2006). Current practice for the treatment of two specific MSDs, RA and AS is outlined below, followed by a discussion of the treatment practice for non-specific MSDs.

Rheumatoid arthritis

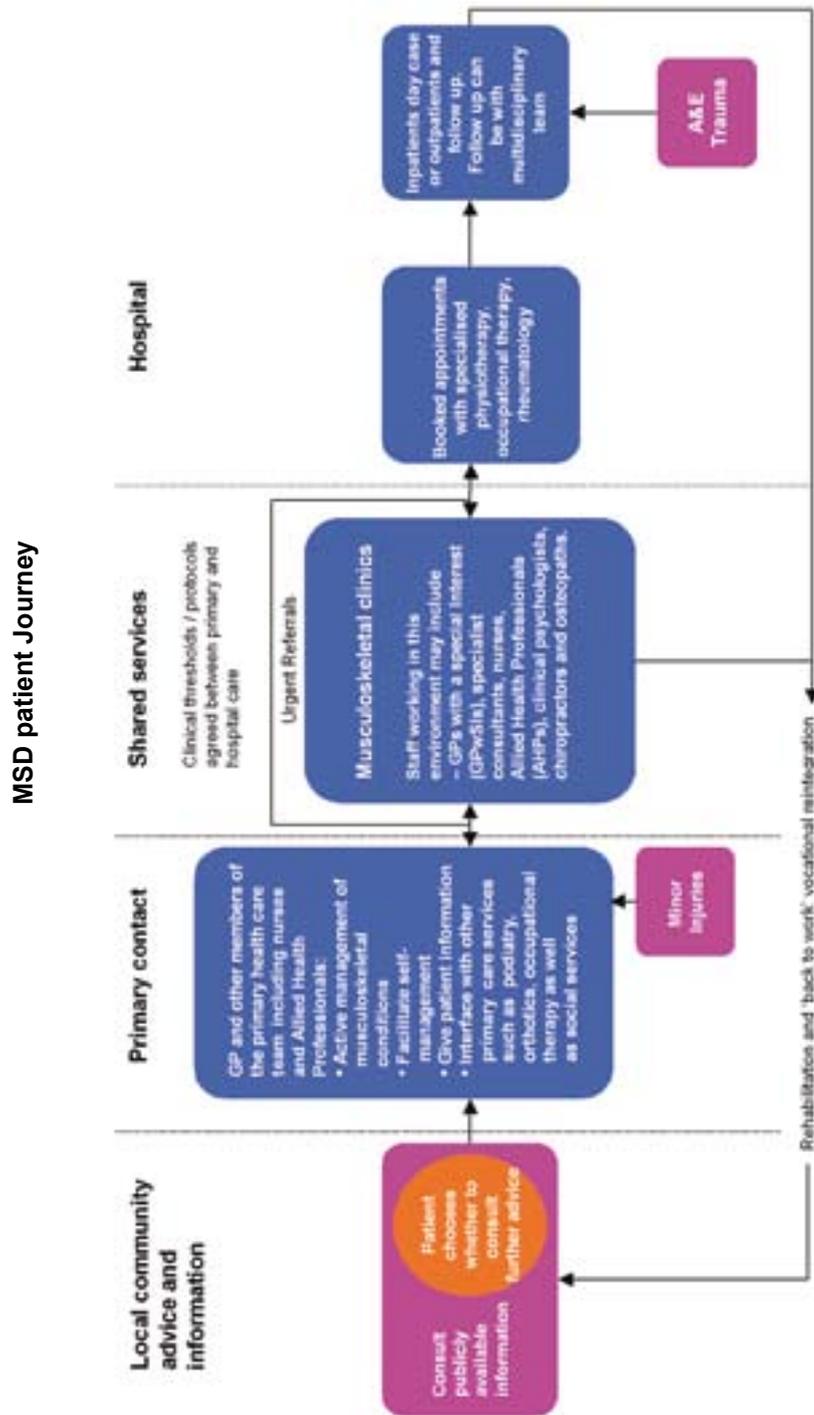
The importance of effective and early treatment of rheumatoid arthritis in reducing joint damage and disability is now widely acknowledged (Pugner, 2000; SIGN, 2000). Since there is currently no 'cure' for RA, the focus of treatment is on controlling signs and symptoms, enabling the patient to manage their condition and improving quality of life. Medical treatments for rheumatoid arthritis are directed at suppressing one or other part of the joint damaging processes, the effectiveness of which have improved in recent years. Since it is well documented that the functional capabilities of RA patients will decline over time, it is critical that patients should be treated as quickly as possible with disease-modifying anti-rheumatic drugs (DMARDs) to control symptoms and disease progression (SIGN, 2000)⁸. Anti TNF drugs,⁹ for example could help to keep patients at work (DH, 2006). Whilst there have been improvements in the time it takes for patients to access rheumatology teams, there is considerable variation amongst them (Luqmani et al, 2006). Reductions to rheumatology services and allied healthcare professionals have introduced further constraints.

⁷ Expert interview

⁸ NICE is in the process of consulting on guidelines for the treatment of RA in adults. See also the British Society for Rheumatology and British Health Professionals in Rheumatology Guideline for the Management of RA, and the standards of care guidelines recently produced by the Arthritis and Musculoskeletal Alliance.

⁹ TNF (Tumour Necrosis Factor) is one of a number of chemicals called cytokines. These help the body to defend itself from outside attack (such as virus and bacteria) by causing inflammation. Anti-TNF drugs are used to stop inflammation by blocking the TNF that is made by the body (NASS). They are sometimes referred to as biological drugs.

Figure 2: Care pathways for musculoskeletal disorders in the NHS



Source: Adapted from DH, 2006

Delays in referral from primary to specialist care have serious consequences for RA patients. One study found that there is a 73 per cent risk of erosive damage in patients who wait over a year between symptom onset and referral to rheumatology clinics (Irvine, 1999 in Luqmani et al, 2006). Moreover, according to the NRAS survey, access to treatment was a significant factor felt to help people stay in work: *'the prompt availability of healthcare was more important to people than any single employment-specific measure, when they assessed what would enable them to remain in employment.'*

However, medical interventions in the form of drug therapy to control inflammation and disease progression, and surgery to redress structural damage are only part of managing the care of RA patients. Other important elements include patient education and empowerment, practical self-management to help deal with symptoms and specialist support to help live with the disease and its consequences (NRAS, 2007). The effective management of RA has to involve not only the clinical team (including GPs, consultant rheumatologists, physiotherapists, occupational therapists, chiropodists, podiatrists, pharmacists, primary care nurses and orthopaedic surgeons), but the participation of the patient and, ideally, their employers. Social workers and occupational therapists also have their role to play.

Ankylosing spondylitis

Prompt referral to specialists for confirmation of diagnosis and the start of treatment is also essential for those with AS. Since (similarly to RA) there is no cure for AS, the aim of therapeutic intervention is to reduce inflammation, control pain and stiffness, alleviate systemic symptoms such as fatigue, and to slow or stop the long term progression of the disease. The prescription of non-steroidal anti-inflammatory agents (NSAIDs) coupled with regular physiotherapy forms the current basis for the treatment of AS (BSR, 2004). The role of anti-TNF drug therapies for more severe cases of AS is currently the subject of further NICE consultation (NICE, 2007).

Although a survey by the National AS Society of 500 members found that the average time it took patients to see a rheumatologist was 27 months, considerably more respondents believed that their condition had been managed either quite or very well (69 per cent) than thought it had been managed quite or very badly (12 per cent). The remaining 19 per cent thought that it had been managed neither well nor badly. Of those who believed their condition has been managed quite badly or very badly, most (36

people out of 61) believed it would be managed better by access to the right healthcare professional. Physical therapy is also an important part of managing AS, with a focus on maintaining good posture and exercising and stretching to maintain spinal and joint mobility.

As AS typically affects relatively young people, its potential to disrupt or even curtail an individual's labour market participation may be significant. As we have discussed, there are important clinical, social and economic benefits to keeping these patients in work as long and consistently as possible. Depending on the severity of their condition, AS patients can benefit from workplace adjustments, flexible working arrangements, exercise regimes and physiotherapy.

Non-specific MSDs

Our primary focus with this report has been to examine the factors which affect job retention, labour market participation and job quality among those with MSDs. As we have seen, there is evidence that physical impairment can represent a barrier to each of these aspects, but that many people – even those with serious and chronic incapacity – can and do lead full and fulfilling working lives. Since back pain and the majority of work-related upper limb disorders are not diseases to be cured, and there is very limited evidence that prevention is possible, it has been argued that the focus of treatment should be on returning to the highest or desired level of activity and participation, and the prevention of chronic complaints and recurrences (Burton, 2005; Bekkering, 2003) rather than eradicating the cause of the problem or returning to normal function.

Whilst treatment to ease or relieve the symptoms of non-specific MSDs will always be a priority, medical intervention is not necessarily the only, or the best route to recovery or to helping those with non-specific MSDs to manage their condition. In fact, for non-specific conditions, an individual's recovery and chances of returning to work can be adversely affected by 'over-medicalising' their condition. The limitations imposed by sick notes, statutory sick leave and formalised return to work programmes may serve to reinforce the 'illness' of the patient and can tie employers hands. Based on evidence that psychosocial factors are a determinant of chronicity and disability in back pain sufferers, there is a strong argument for re-conceptualising this condition and its treatment, which has important lessons for other types of non-specific musculoskeletal pain (Burton, 2005).

Waddell and Burton (2006b) summarise the challenge neatly in their work on vocational rehabilitation. They point out that, whilst many non-specific MSDs do not have clearly defined clinical features and have a high prevalence among the working age population, most episodes resolve themselves and most people with these conditions remain at work or return to work very quickly. In their view, a focus on incapacity alone can be unhelpful:

*‘..the question is not what makes some people develop long term incapacity, but **why do some people with common health problems not recover as expected?** It is now widely accepted that biopsychosocial factors contribute to the development and maintenance of chronic pain and disability. Crucially, they may also act as obstacles to recovery and return to work. The logic of rehabilitation then shifts from dealing with residual impairment to **addressing the biopsychosocial obstacles that delay or prevent expected recovery**’ (Waddell and Burton, 2006, p.7) (bold in original text).*

The biopsychosocial model and work

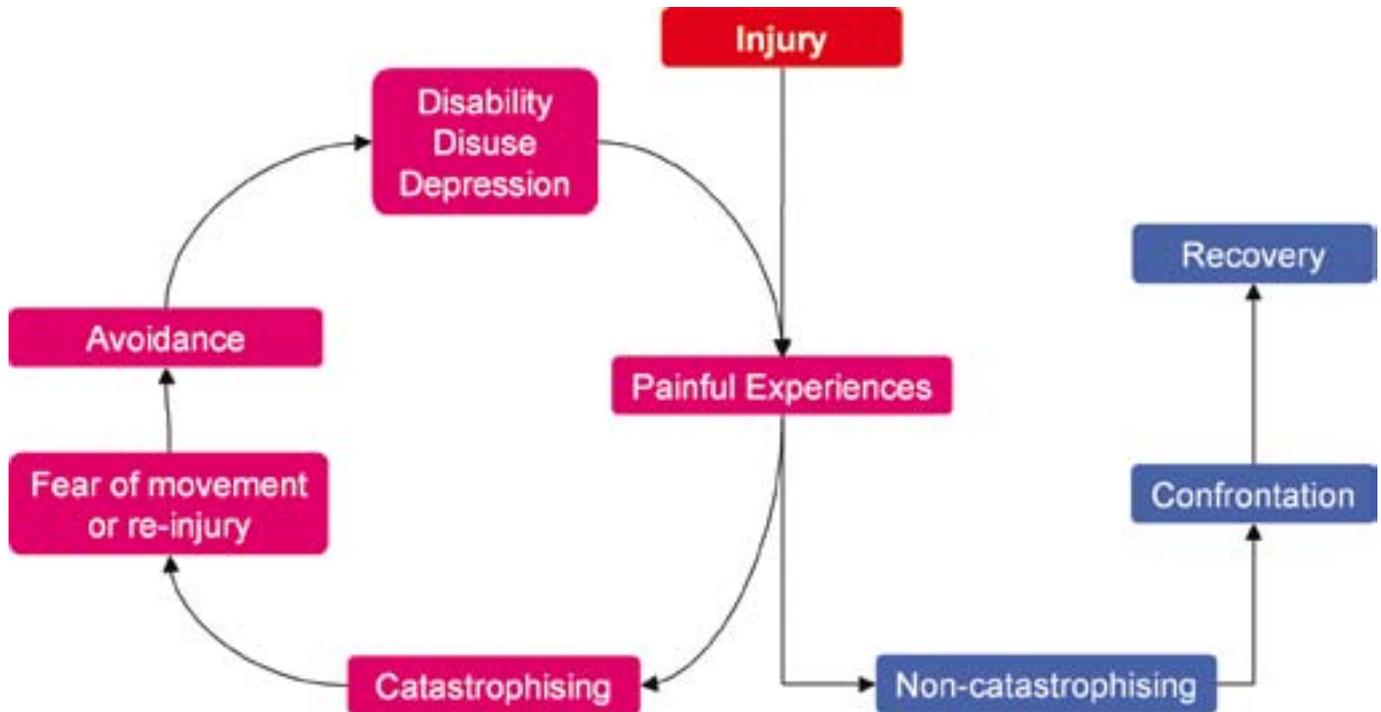
The biopsychosocial model is an explanatory framework that recognises the importance of psychological and social factors in determining how MSD sufferers cope with their conditions. The following section provides a brief overview of the biopsychosocial model and outlines the implications that it has for the workforce.

The biopsychosocial model advocates that clinicians, occupational health professionals and others should assess the interplay between the biological (eg disease, joint damage), the psychological (eg disposition, anxiety) and the social (eg work demands, family support). Figure 3 below illustrates the role which psychological disposition and behaviour can have on the way a physical ‘injury’ (such as back pain) is approached by a patient.

In this example, the injured patient risks entering a self-reinforcing cycle of incapacity, delayed recovery and even depression if their dominant response to pain is to ‘catastrophise’ it. Of course there may be many factors which affect an individual’s disposition to ‘catastrophise’, including personality, previous medical history, levels of family support or job satisfaction (Sullivan et al, 1990). It is evident that the interaction of the biological, psychological and social dimensions can have a significant impact on the development, progression of, and rehabilitation from, a musculoskeletal condition.

Since it was first proposed in the late 1970s, a growing body of evidence has developed to support the biopsychosocial model. For example, research has demonstrated that job

Figure 3: Cognitive-behavioural model of injury



Source: Vlaeyen et al, 1995

dissatisfaction can be an important predictor of speedy and successful return to work (Bigos et al, 1992). On the issue of social support, studies have shown that limitations in functioning attributable to MSDs can stress family systems and lead to family conflicts if the patient is unable to perform normal family duties (Hamberg et al, 1997; MacGregor et al, 2004; Kemler et al, 2002). On the other hand, an overly solicitous family (or, by extension, manager or colleague) may reinforce MSD patient passivity and encourage the patient to adopt a ‘disabled’ role (Kerns et al, 1990; Block et al, 1980).

Some critics of the biopsychosocial model (McLaren, 2006) have picked up on this last point, highlighting concerns that this approach may encourage or ‘permit’ helplessness in some patients or that, in other circumstances, it may alienate patients who feel that they are being told that their condition is ‘all in the mind’. Clearly care must be taken in the way that clinicians and others mitigate these risks, but the balance of the literature – and of the expert opinion offered during the course of our interviews – is strongly in support

of the biopsychosocial model and its role in informing the management of MSDs in both clinical and occupational settings (Smyth et al, 1999; Carter et al, 2002). Indeed, it forms the basis of the World Health Organisation's *International Classification of Functioning, Disability and Health* (ICF) which has been widely embraced as an authoritative guide for vocational rehabilitation (WHO, 2001).

As Waddell and Burton (2006b) have argued, the goals of the biomedical model are to relieve symptoms, whereas the goals of clinical management informed by the biopsychosocial model – especially in occupational settings – should be to control symptoms and to restore function. This suggests that employers contribute to the 'social' part of the biopsychosocial model and that their actions can make a difference to the outcome for MSD sufferers.

The role of employers

Awareness of conditions and their management

Many employers remain unaware of the nature of MSDs, both in terms of their immediate impact on functional capacity at work and, where relevant, the manifestations and progression of the conditions. For example, employees with RA or with AS may be susceptible to periodic 'flares' of inflammation and severe pain followed by fatigue and possible depressed mood. Unless employers are aware that these symptoms are expected or 'typical', they can adopt an unhelpful or over-cautious approach to return to work. The NRAS survey of 782 people with RA found that taking time off when unwell or having a 'flare-up' was one of the most serious problems they faced in work, whilst 20 per cent reported that a lack of understanding or support from their employer posed a problem (NRAS, 2007). Worryingly, 13 per cent also reported that their employer wanted them to leave once they became aware that they were suffering from a long term health problem. Since work disability may occur early in RA, particularly in those with manual occupations, it is also important that employers realise the importance of facilitating re-training or job re-design to keep people in work for as long as possible and to minimise the economic impact (SIGN, 2000).

Whilst the message about manual handling and work design may have got through to many employers, the fact that absence and even reduced work requirements can be counter-productive has yet to become common currency. Changing attitudes and raising awareness about the management of MSDs is an important part of reducing their burden to employers and society. However, it is not just employers that need to know more about

MSDs and their treatment. One of the most persistent (and pernicious) myths about back pain, for example, is that bed rest is the best solution. Health promotion campaigns have been shown to be effective at getting the message across that experiencing pain does not necessarily mean that the condition has worsened or that being active is bad for you (Buchbinder et al, 2001). The Welsh Assembly's Welsh Backs Campaign, for example, was launched in 2005 with the aim of reinforcing healthy lifestyle messages relating to exercise and mobility. The campaign has messages for three key groups:

- To workers: back pain is not normally serious and staying active is the best cure;
- To employers: you can play an active role in helping workers to stay at work by offering rehabilitation and return to work services;
- To healthcare professionals: provide evidence-based messages that are positive and consistent, and work more closely with employers to manage return to work and rehabilitation of back pain sufferers.

(Welsh Backs press release, March 2005)

This follows similar campaigns run by the Health Education Board for Scotland and the HSE entitled 'Working Backs Scotland' (which began in 2000) and another in Australia, featuring a series of television advertisements across the state of Victoria. An evaluation of the campaign in Victoria suggested that this had not only increased the awareness of the general public, but affected behaviour change, resulting in a decrease in the number of medical insurance claims for back pain (Buchbinder et al, 2001). This demonstrates that with sufficient commitment and investment from central government, campaigns of this scale can have an impact on public perceptions of common MSDs.

Intervention and adjustment of work demands

Not only has evidence shown that work is good for you but returning to modified work can help recovery (Feuerstein et al, 2003). Among occupational health specialists, the use of vocational rehabilitation has long been an accepted mechanism for ensuring that individuals with illness, injury or incapacity can return to work (even to perform adjusted work) as soon and as sustainably as possible. There have been concerns that rehabilitation is not well-integrated into mainstream clinical practice and that return to work is not seen by a sufficient proportion of clinicians as a valued outcome for the patient (Frank and Chamberlain, 2006). It is also important to stress that vocational

rehabilitation is not the preserve of professionals¹⁰. In practice, effective management is as, if not more important than formal rehabilitation.

Yet, employers, if they think about this at all, invariably consider the physical job demands which need to be met by an employee with an MSD. The biopsychosocial model requires that the mental demands of the work are also considered as part of the return to work process. There is a growing body of work which shows that adjusting a range of work demands can support successful return to work among those with a range of MSDs (Schultz et al, 2007; de Croon et al, 2004; Feuerstein et al, 2004; Chorus et al, 2001). The success with which both employee and employer can manage the process of re-adjustment during return to work can also depend on the beliefs that both parties have about the extent to which the work itself is (at least in part) caused by or related to the incapacity.

There are numerous types of work-based intervention for assisting those with MSDs, ranging from ergonomic adjustments to providing access to physiotherapy, modifying work programmes to cognitive behavioural therapy, or a combination of various strategies. Evidence on the success of these interventions at tackling non-specific MSDs is mixed (Meijer et al, 2005).¹¹ A systematic review of multidisciplinary treatments of patients with low back pain, for example, demonstrated that whilst the treatment improved function and decreased pain in individuals, it could not be demonstrated that this was linked to employees returning to work earlier than those who had not received it (Guzman, 2001). Whilst biomechanical or ergonomic factors may be related to the onset of back pain, evidence that interventions based on these principals will prevent re-occurrence or progression to

chronicity is thin on the ground (Burton, 1997). In fact, it has proved virtually impossible to determine whether one treatment is significantly more effective than another (Ekberg, 1995). Even for specific conditions such as RA, the evidence for the effectiveness of vocational rehabilitation is slim (Backman, 2004).¹²

There is nonetheless broad agreement on the principles for managing non-specific MSDs, particularly back pain, that are outlined in Box 1. This includes advice and a number of relatively simple measures for employees and employers to follow on how to deal with back pain.

¹⁰ Expert interviews

¹¹ Findings from an evaluation of the effectiveness of return-to-work treatment programmes were inconsistent

¹² Backman, 2004 found only six studies for the period 1980 to 2001

Box 1: Principles of managing non-specific MSDs

- Early treatment should be sought for back pain.
- Most back pain is not due to a serious condition.
- Simple back pain should be treated with basic pain killers and mobilisation.
- It is important to keep active both to prevent and treat back pain.
- Getting back to work quickly helps prevent chronic back pain.
- Adopt the correct posture while working.
- All workplace equipment should be adjustable.
- Take breaks from repetitive or prolonged tasks or postures.
- Avoid manual handling and use lifting equipment where possible.
- Clear information should be provided to employees about back care.
- Health and safety policies should be implemented to cover all aspects of day-to-day work and should be reviewed regularly.

Source: HSE (2002) Initiative Evaluation Report: Back in Work¹³

This requires employers to think beyond their statutory duty to address health and safety risks, and to recognise that sickness absence management, effective return to work programmes and rehabilitation are, at bottom, principles for effective management (Waddell and Burton, 2006b). Much is dependent on raising awareness about how to manage the symptoms of MSDs amongst employees and their managers, and ensuring that the latter have the skills and confidence to support employees in work.

Line managers

What is clear is that the role of line managers in early intervention is crucial, both in work retention and rehabilitation. A survey by the Engineering Employers Federation (EEF, 2007) revealed that 40 per cent of companies that train line managers to tackle sickness absence reported a decrease in absence, compared to 26 per cent who saw a decrease where no management training was carried out (EEF, 2007). Yet many line managers feel ill-equipped to manage long term absence and incapacity¹⁴. They may find aspects of mental ill-health or chronic incapacity awkward and embarrassing to talk about or confront, and are concerned about challenging or asking for more information about GP sick notes, making home visits or telephoning staff at home for fear of being accused of harassment or falling foul of the law and landing themselves and their organisation in a Tribunal. They are also ignorant of, or uncomfortable with, the idea of rehabilitation.

¹³ Key lessons from an evaluation of 19 projects set up jointly between the DH and the HSE to develop innovative ideas to tackle back pain in the workplace.

¹⁴ Expert interview

Although the Disability Discrimination Act (DDA) requires employers to make 'reasonable adjustments' to accommodate employees with long term illness or injury, most line managers find job re-design difficult, irritating and disruptive.

Given that MSDs are the most common work-related health problem, and the importance of psycho-social factors in determining whether an employee remains in work or returns to it as soon as they can, managers need to have the skills to deal with staff who suffer from them, or the costs to their organisation may be significant, particularly for small and medium enterprises. The EEF survey found that: *'For long terms absence (four weeks or more), the main cause was "surgery and medical test/investigations". This is cited by a quarter of companies (27 per cent) as the single most important cause of long term sickness absence. SMEs are struggling with "surgery and medical test/investigations" more than large companies – 28 per cent of SMEs compared to 19 per cent of companies with more than 500 employees.'* This highlights that small employers also have issues with employees with MSDs, as their absence from work can have, potentially, more impact on customer service, productivity and business performance. The HSE's 'Workplace Health Connect' service has been targeting SME's with workplace health advice in response to these concerns, though the early results appear disappointing (Tyers et al, 2007).

Improved employer-clinician dialogue

On the face of it, many of the return to work challenges faced by employees with MSDs would be met if there was an improved level of mutual understanding between employers and clinicians. As highlighted above, the clinical appreciation of most MSDs by employers can be cursory to say the least. It is often argued that most GPs, in their turn, have little or no appreciation of the vocational or occupational dimension of many MSDs. Medical students spend a very small proportion of their time learning about occupational health¹⁵, whilst training in MSDs or GPs has been found lacking (Akesson, 2003). Many GPs are making return to work judgements without a very clear view of the demands of the job, the extent to which adjustments to the job can be made or, indeed, whether swift and appropriate return to work might have positive psychological (and economic) benefits. Without this understanding of specific tasks undertaken by employees and the ability to adjust those tasks, GPs may feel that a return to work would exacerbate a condition unless an individual is 100 per cent fit. More than a third (39 per cent) of employers surveyed by EEF identified GPs as a barrier to successful rehabilitation (EEF, 2007).

¹⁵ Expert interview

For their part, employers will only very rarely challenge a GP's sick note, or ask for a second opinion on the potential for a beneficial return to work for a patient. The consequence of this mutual lack of understanding and resulting dearth of dialogue can often be that the MSD patient is left stranded in the middle, with no clear pathway back to work and, more importantly, no voice. A proactive, inclusive, multi-disciplinary, capability-focused approach to vocational rehabilitation, informed by the biopsychosocial model and delivered through case management is widely regarded as the most enlightened and effective approach to take in the majority of work-related MSD cases¹⁶.

Quite often both employers and GPs will focus on the aspects of the job which an MSD patient cannot currently perform, rather than on those which they can. In some cases, Statutory Sick Pay (SSP) regulations can reinforce the 'biomedical' model and encourage employers to consider the physical symptoms of the incapacity and their effects to the exclusion of the psychological and social dimension.

One of the attractions of the biopsychosocial model is that it 'joins up' the three core strands of the MSD patient's experience, and management of, their condition. It offers a comprehensive framework with which to look at the diagnosis and treatment of a range of MSDs, especially when an important outcome for the individual is to stay in, or to return swiftly, to work.

Summary

This section has outlined the case for early intervention, first and foremost to benefit the health of those suffering from MSDs but also to ensure that they remain productive members of the workforce. However, it also demonstrates that intervention should ideally begin before those experiencing musculoskeletal pain visit their GP, and extend beyond the signing of a sick note. The biopsychosocial model clearly illustrates the need for a more comprehensive understanding of the factors that contribute to the development of non-specific MSDs, taking into account individual or psychological factors as well as the social milieu in which the sufferer lives their lives, in which work plays a large part. To achieve this, employers, employees and clinicians need to talk to one another more effectively. Whilst this is challenging, and undoubtedly not common practice today, the costs of not addressing this problem are highlighted in the following section.

¹⁶ Expert interview

5. The wider impact of MSDs

In the previous sections we have outlined the general scale of the problem of MSDs within the UK and the work-related risk factors which can impact on the onset and outcome of any symptoms. The effect that MSDs can have on an individual's ability to work and the time they may require to be absent from work means that MSDs have significant associated costs to the individual, their family, the employer and the wider economy. Calculating the exact costs is not straightforward. Several factors need to be considered and obtaining accurate, reliable and consistent figures is almost impossible. However, existing figures on the economic impact of MSDs based on conservative approximations show that MSDs are a significant economic burden to the UK.

To calculate the cost of MSDs (or any illness) the following factors must be estimated:

- **Direct costs** (including medical expenditure, such as the cost of prevention, detection, treatment, rehabilitation, long term care and ongoing medical and private expenditure).
- **Indirect costs** (including lost work output attributable to a reduced capacity for activity, such as lost productivity, lost earnings, lost opportunities for family members, lost earnings of family members and lost tax revenue).
- **Intangible costs** (including psychosocial burden resulting in reduced quality of life, such as job stress, economic stress, family stress and suffering; WHO, 2003).

These costs vary considerably depending on the condition, on the severity of the symptoms, and whether these cause short or long term absence or disability. Moreover, they vary depending on the particular methods used to calculate the costs. Some factors which affect the calculations include the following:

- severity of the patient's conditions
- mix of patient demographics in a study
- calculation method for productivity
- definitions of work disability
- the treatment costs or outcomes due to treatments (the year costs were calculated is also a factor, not least because treatment processes can change)
- changes in healthcare financing systems
- incidence or prevalence based estimates of costs.

Intangible costs are rarely included in cost calculations as it is almost impossible to properly express the intangible costs in monetary terms (Sieper et al, 2002).

Direct costs A study of the costs of sickness absence by the Institute for Employment Studies in 2001 (Bevan and Hayday, 2001) included a detailed review of the direct and indirect costs of absence to 12 employers (ranging from small to large organisations across sectors). The authors found that on average employers spent nine per cent of their salary bill on absence. Whilst the direct costs borne by employers, such as statutory sick pay, should not be underestimated, most of the direct costs resulting from MSDs are likely to be healthcare costs shouldered by the NHS.

A Norwich Union report on the evidence base for work-based health initiatives highlighted that NHS inpatient treatment costs for MSDs were £607 million in 2001-2 (two per cent of total inpatient costs in 2001-2002; Nera, 2007). Estimates of the costs in GP consultation time vary from 5-30 per cent. The musculoskeletal services framework estimated that up to 30 per cent of GP consultations concern musculoskeletal complaints (DH, 2006). Taking the conservative five per cent estimation of GP consultation time, Norwich Union estimated that GP costs for MSD consultations were £238 million in 2001-2 (Nera, 2007). The total cost of treating MSDs was estimated at £1,198 million for 2001-2 (Nera, 2007).

Calculations of the costs of treatment tend to evaluate the clinical costs and benefits of treatments. Indeed, the NICE evaluations of treatments concentrate on examining the clinical costs and benefits. Although this evaluation does include a brief consideration of the extent to which a treatment allows someone to regain normal functionality, it is currently beyond NICE's statutory remit to consider the wider consequences of keeping more employees in the labour market. The wider impact of sufferers remaining in work or returning to work early extends to the biopsychosocial and economic effects to the individual of being in work and to the reduced costs to DWP and other government departments. Taking a wider, joined-up approach to an analysis of costs of treatments for illness in general, and MSDs in particular, may provide a different and perhaps more realistic assessment of the costs of treatments.

The Scottish Intercollegiate Guidelines Network (SIGN) guidelines suggest that an evaluation of the costs of an untreated disease, or a delay in treatment, should include more indirect costs. For example:

'Personal costs: lost work opportunities, decreased leisure activities and stress on relationships. Costs to society: loss of working skills of individuals, loss of contribution to the home, the burden of economic cost of care' (SIGN, 2000).

Indirect costs

There are two main types of indirect cost most commonly measured in association with ill health in employees. These are absence from work and what is termed 'presenteeism', or loss of productivity in an employee as a result of ill health. Presenteeism is extremely difficult to measure and there is no national data on presenteeism costs, rather it is measured on a case by case basis in individual studies. As a result, most estimates of indirect costs are based on absence data. However, it is worth noting some of the limitations of data collected on absence from work. The recording of sickness absence is rarely accurate. Different organisations have different ways of recording absence: in some cases employees complete records themselves, in other cases managers must record the absence for them. Employer surveys require HR employees to complete the survey about their organisation from their records (for example, Chartered Institute of Personnel and Development and Confederation of British Industry surveys). Self-report surveys ask individual employees to complete the survey with respect to a particular reference time, for example, the previous two weeks (such as the Labour Force Survey). Each method has limitations, with self-reported surveys, employees might report sickness on days when they were not due to work anyway. With employer surveys the responses are limited by the quality of the absence records employers keep (for example, employees do not always record absence accurately or categories for recording causes are not adequate). Employer surveys are also subject to response biases where only organisations with good methods to measure absence are likely to be able to respond quickly to the survey request. In all cases records and reports are subject to biases. Managers, for instance, tend to under-report their own absence.

Bearing in mind these limitations we outline some of the estimates of absence caused by MSDs. Findings from the CIPD survey of employers show that back pain and musculoskeletal injury are amongst the most significant causes of workplace absence. For manual workers, back pain and musculoskeletal injuries are the most common causes of absence after minor illness like cold and flu. For non-manual workers, back pain was cited by 41 per cent of employers as a leading cause of short-term absence (CIPD, 2006). Other surveys show similar figures. The EEF sickness absence and rehabilitation survey 2007, which surveyed employers, reported that 55 per cent of *short term* absence was primarily due to MSDs.

What is more revealing about the cost of MSDs to businesses is the fact that in 2006 musculoskeletal injury and back pain were cited by the greatest number of employers as the leading cause of *long term* absence in manual workers (20 per cent and 18 per cent respectively; CIPD 2006). The number of employers reporting these as causes of long term absence for non-manual workers was lower: mental ill health, acute medical conditions and recovery from operations were more commonly cited. In contrast, the EEF survey findings in 2007 report that employers in their survey believed up to 68 per cent of long term absence was attributable to MSDs. The Department of Health estimates that 60 per cent of those on long term absence leave cite musculoskeletal problems as the cause and 22 per cent of those on incapacity benefits are musculoskeletal patients, the second largest group (DH, 2006). In the 2004/05 there were 370 new cases assessed for disablement benefit due to a prescribed musculoskeletal disorder under the Industrial Injuries Scheme¹⁷.

However, these absence figures still underestimate the true cost of MSDs. Most MSD sufferers do not become disabled. In fact, whilst there is a relatively high background prevalence of MSDs, most people (even those with diagnosed conditions) continue to work (Waddell and Burton, 2006a). For back pain, Nachemson et al (2000) calculated that some 80 per cent of healthcare costs are generated by the 10 per cent of sufferers with chronic pain and disability. However, there are still potentially significant costs associated with lost productivity where people remain at work but in pain or distress while awaiting intervention or workplace adjustments. As discussed in the previous section, the indirect costs of ill health extend beyond lost productivity of the individual, often impacting on the labour participation of family members (Pugner et al, 2000).

Total costs

The cost calculations for MSDs in general provide relatively good estimations of the costs of non-specific MSDs given that non-specific MSDs constitute the vast majority of cases. Calculating the costs for specific MSDs is fraught with the same difficulties as for MSDs as a whole. The majority of studies estimating the economic burden of RA have provided cost estimates specific to the US population and health care system (Cooper, 2000). The cost of AS to society is less well established (Chorus, 2002). More research has been done on cost in the US, Canada and other European countries, particularly the Netherlands, France and Belgium, than in the UK. However, findings across countries with respect to work disability rates are generally not directly comparable given the differences in working terms and conditions, such as the length and conditions of

¹⁷ <http://www.hse.gov.uk/statistics/causdis/musc.htm> accessed 24 August 2007

statutory sick pay (Sieper et al, 2002). Sieper et al (2002) found that the patient's country of residence as a factor was a strong influence on levels of labour force participation, introducing another large error factor into the estimates, such that calculations of cost based on international comparisons must be interpreted with great care. For this reason, we have only included estimates of costs based on UK data in what follows.

Pugner et al (2000) reported an estimate of the cost of RA across various countries and calculated that in the UK the total costs were between £3.8 billion and £4.75 billion a year. Though this estimate was conservative in comparison to a previous study by McIntosh (1996), Pugner et al attribute this to differences in the demographics of study samples and observed that *'indirect costs almost always are underestimated because they rarely take into account forgone income of informal caregivers'*. A more recent analysis conducted by the NRAS (2007) has estimated that the average loss of productivity when an individual stops working because of their RA to be £287,544.

Recent data on the economic cost of AS in the UK is more limited. Based on a study of 1,413 patients Kobelt et al (2004) have estimated that the mean annual cost per patient is £6,165. Indirect costs made up the greatest percentage (57.9 per cent), largely as a result of early retirement caused by AS, which was reported by 23 per cent of the sample. Kobelt et al found that of direct costs, hospital costs were the greatest burden, whilst drug treatment represented a very low percentage of the total. Functional capacity was found to be a better predictor of high costs than disease severity.

The limitations of data collection outlined above highlight some of the difficulties encountered in trying to cost the impact of MSDs for employers and society. Although perhaps a conservative estimate, one of the most reliable figures of the economic impact of MSDs in the UK overall is based on figures from the HSE. In 2005/6 based on self-reported absence data from the Labour Force survey, the HSE estimated that of the 1.01 million people affected by MSDs, 9.5 million working days were lost. According to the HSE's calculations, on average, each affected person took 17.3 days off work in that 12 month period (HSE, 2007). Using a conservative estimate based on 1995/96 data with figures adjusted to 2005 prices, it was calculated that MSDs cost employers between £760 and £804 million per year (Nera, 2007). Using similar price adjustments we estimated the total cost of MSDs to society to be £7.4 billion in 2007.¹⁸

¹⁸ HSE 1995/96 updated for RPI inflation using the Office for National Statistics recommended methodology results

The future workforce

The large majority of cases of MSDs are non-specific, but as we have outlined both specific and non-specific MSDs have a significant impact upon individuals, health care systems, and national economies and societies. Given that MSDs are having a demonstrable effect on productivity within the UK, it is worth considering what risk factors the workplace of the future might hold for MSDs. There are several key trends in the UK workforce of the future that are relevant to the incidence and prevalence of MSDs: chief among these are that the workforce is ageing, it is becoming increasingly female and that obesity rates are rising. The key trends are shown in Box 2 on the next page.

For many, though not all MSDs (including conditions such as osteoporosis which have not been covered in detail here), age is an important risk factor. Estimates suggest that by 2010 the proportion of the working population aged between 50 and 64 will be greater than at any time since the mid 1970s (Dixon, 2003). It is a trend that is set to continue. The DWP has estimated that by 2021, 12 million workers will be aged over 65, compared to just 1.3 million aged 23-25. In this context the experiences of this older age group will become relatively more important for the performance of the workforce as a whole (Dixon, 2003).

The health of the ageing workforce will be a crucial factor in ensuring the prosperity of the economy and helping the UK to meet its productivity targets. The Employers' Forum on Age (2005) found that almost half the workforce would be happy to work until they are 70, but only one in five thinks that they will be fit enough to do so. The European Commission posits that a significant factor in keeping our ageing workforce at work will be reducing the risks of occupational accidents and improving workers' health (European Commission, 2005).

Pertinent to the ageing workforce and the impact of MSDs is the finding that older workers are less likely to become unemployed, but that if they do, they take longer to return to work and are more likely to leave the labour force for good (Dixon, 2003). With an ageing workforce it is crucial that employees, employers, health professionals and government ensure best practice to help employees stay at work or return to work quickly.

Best practice must include physical adjustments to work but it must also address the psychosocial and organisational factors of work. Research by Hirsch et al (2000) suggests that people feel increasingly 'out of place' as they get older. We have already

Box 2: Key trends in the future workforce

Key Trends

- The workforce is set to grow by 300,000 from 2004 to 2010 – 80 per cent of this growth will be attributable to the entrance of women.^a
- 1 in 5 UK workers will be mothers.^a
- 25 per cent of all families will be single parent families.^a
- There will be 1.8 children per family.^a
- Up to 10 million people will be caring for elderly relatives.^a
- The average age of workers in the labour force is gradually increasing – between 1991 and 2001, the mean age rose from 37.5 to 39.0.^b
- The number of people aged over 55 in employment is increasing – between 1992 and 2005 the number rose from 3,225,647 to 4,532,837.^c
- Over the last decade, the proportion of women in their 50s and in employment increased from around 59 per cent to 67 per in 2003/4. For men aged 50 to 64, the employment rate increased from 65 per cent to 72 per cent over the same period.
- There is set to be one million fewer working age people under 50 and three million more aged over 50 by 2022.^d
- Estimates suggest that by 2010 around 6,658,953 men and 5,984,653 women will be obese (increasing from 4,302,588 and 4,754,080 respectively in 2003).^e

Sources: ^a Britain in 2010, Department of Work and Pensions, 2001; ^b Dixon S, 'Implications of Population Ageing for the Labour Market', Labour Market Trends, February 2003, pp67–76; ^c 14 Office for National Statistics, Labour Force Survey, spring 1992 and spring 2005, www.statistics.gov.uk/STATBASE/Source.asp?vlnk=358&More=Y

^d Government Actuary's Department population projections, 2002; ^e Zaninotto, P., Wardle, H., Stamatakis, E., Mindell, J., Head, J. (2006). Forecasting Obesity to 2010. (Department of Health)

discussed that low social support at work is a risk factor for MSDs. In particular it is worth noting that one option people are choosing as they move towards retirement is to work more flexibly or reduce the amount of hours they work (Turner and Williams, 2005). It is important to ensure that these individuals do not feel a loss of status or control over their working lives, not least because a lack of these factors has a negative impact on health and well-being (Marmot, 2004).

With an ageing population research suggests that 'it will not be uncommon to see four surviving generations of the same family' (European Commission, 2005) and individuals in the middle generations will have both children and elderly relatives to care for. This means that people in their 50s represent a pivot generation with both care and work roles (Mooney et al, 2003). The combination of work and care roles can have negative consequences on well-being, including lack of leisure time, tiredness and ill-health (Mooney et al, 2003).

Women are responsible for doing the majority of housework and caring duties (EOC, 2005). With an increasing number of women in the workforce and the increased caring responsibilities of the pivot generation the workforce of the future, (particularly female workers), is likely to be more exposed to the risk factors associated with the conflict between work and care roles. How we conceptualise health at work, and interventions aimed at addressing work-related MSDs, must take this into account if they are to be effective.

The rising level of obesity is another trend that is likely to have an impact on the number of cases of MSDs as obesity is a risk factor for many MSDs. The estimates calculated for the Department of Health in 2006 suggest that if the current situation continues well over one million men and one million women more than today will be obese by 2010. This has serious implications not only for general health but also for the potential onset and deterioration of MSDs.

Summary

MSDs have a significant impact on people's ability to work; not only on an individual basis but on aggregate they affect over one million people within the working population. However, given that work is good for our long term health it is a positive sign that whilst MSDs reportedly affect twice as many people as stress, depression and anxiety, we cannot attribute twice as many days of absence to MSDs compared with common mental health problems. While MSDs may affect people's ability to work many are still able to work. Despite this, estimates suggest that MSDs are a significant cost to employees, employers and society as a whole. It is therefore important that we focus on what people are able to do to while suffering from an MSD to ensure that we retain as much of their productivity as possible both for the long term health of individuals and to reduce the negative economic impact of lost productivity.

6. Conclusions and recommendations

Work is, unambiguously, good for our health (Coats and Max, 2005). It provides us with income, generates social capital and gives us purpose and meaning. Even when unwell or injured, remaining in work – at least in some capacity – is often better for recovery than long periods away from work. If the UK workforce is to be productive and competitive in the global economy, and if the quality of our working lives is to be enhanced, we need to ensure that we are all, as far as possible, fit for work.

The evidence presented in this report illustrates that a large proportion of working age people in the UK are, or will be, directly affected by musculoskeletal conditions (MSDs). This can have very significant social and economic consequences for these individuals and their families, it can impede the productive capacity of the total workforce and parts of UK industry and it can draw heavily on the resources of both the NHS and the benefits regime.

There is no shortage of clinical, epidemiological, psychological and economic evidence on the nature, extent and consequences of the MSD problem in the UK. However, there still seems to be a lack of coherence or ‘joined-up’ thinking and action which focuses on the MSD **patient as worker**. While the numbers advocating the application of the biopsychosocial model to MSDs is growing, we noted that some of those who can have most impact on fulfilling the labour market participation of workers with MSDs have yet to embrace its principles as fully as they might.

The Work Foundation has a number of recommendations for several interested parties in this field. Our intention is to acknowledge the considerable progress which has been made in the last two decades, but also to encourage some of the key players to recognise that yet more can be done to ensure that continued active participation in the labour market is almost always a strongly positive force for health, fulfilment and for prosperity.

Recommendations for employers

- Managerial awareness-raising and training must include a health and well-being component. Managers are in the front line of staff absence and are in a good position to spot the early warning signs of a problem and to help rehabilitate employees after a period away from work. Despite the current focus on ‘stress’, managers need to be aware that MSDs can be even more of a problem for their staff and for the whole organisation.

Conclusions and recommendations

- Imaginative job design will assist rehabilitation. Managers can change the ways work is organised (including simple changes to working time arrangements) to help prevent MSDs getting worse and to help MSD sufferers to return to work. They need to do this in a way which preserves job quality, avoids excessive or damaging job demands and takes heed of ergonomic good practice.
- Challenge GPs. If sick notes from GPs are not providing a clear enough indication of the nature of the health problem an employee has, and its impact on their capacity to work, employers should challenge and clarify the GP's assessment, if only to help understand which tasks the employee can still perform, or what support they might need to return to work.
- Intervene early. Employers should always take action sooner rather than later because caution and delay can only make matters worse. As long as they behave compassionately and make decisions based on evidence and on expert opinion, early intervention cannot be construed as harassment.
- Use occupational health advice. Vocational rehabilitation, carefully organised and tailored to the individual, can make a real difference to return to work, productivity, morale and sustainability of performance. Involve OH professionals as early as possible.
- Beyond legal compliance. Try to avoid a 'risk management' mentality when dealing with an employee with an MSD, this can often lead to delay and ambiguity. In almost all cases, the employee is better off at work.
- Use the biopsychosocial framework. Thinking about the physical symptoms of the MSD without considering the psychological and social dimensions can mean that the work-related causes of an MSD or the work-related benefits of rehabilitation can be underestimated.
- Focus on capacity not incapacity. Employers can catastrophise too! Most workers with MSDs can continue to make a great contribution at work if they are allowed to. They do not need to be 100 per cent fit to return to work, and a little lateral thinking will allow you to give them useful work to do which will support them on their journey back to full productive capacity.

Recommendations for employees

- Focus on capacity not incapacity. It's natural to be anxious or even guilty about the parts of your job which you may find difficult to perform because of your MSD. But you still have much to contribute and you should play to your strengths. Your specialist knowledge and experience doesn't disappear just because you are

suffering pain, discomfort or mobility problems, you can still contribute in many ways. Work with your managers and your colleagues to find out how you can maximise your impact at work within the constraints of your condition. Be open with them and they should respond better.

- Talk to your manager soon. Your line manager, despite what he or she might tell you, is not a mind-reader. If your MSD is causing you difficulty or you anticipate a period when you will need to adjust your working time, talk to your manager so that you can both plan what to do about it. The earlier the better as managers don't like last minute surprises, but they can usually find a solution to most problems if they have some notice. You might also find it useful to talk to your Union representative, your HR manager or someone in occupational health. Don't delay.
 - Play an active part in the management of your condition. Your MSD is bound to get you down sometimes and you will feel like it's controlling your life at home and at work. But you don't need to be a passive victim of pain or immobility. Find out more about your condition, watch for patterns in pain or fatigue and learn how you can minimise its impact on your functioning and your mood. This can sometimes be very hard to do, but persevere, people who play an active part in the management of their condition tend to get back to work more quickly.
 - Know your rights. As both a patient and as a worker you should know what support and advice you are entitled to. If you are a Trade Union member, your Union should be able to guide you on much of this.
 - Family involvement in job retention and rehabilitation. Your family and friends are important sources of support. They may not realise that staying in or returning work is both possible and desirable. You need to help them to help you by getting them involved in your rehabilitation at work. Even small adjustments to working time or travel to work arrangements can make the world of difference.
-
- Identify where job retention or early return to work is good for the patient. It is easy to assume that work is unambiguously bad for your patient, especially if you suspect that aspects of their job makes their symptoms worse. Consider carefully whether, with some adjustments you can recommend, staying at work on lighter duties or with adjusted hours might still be a better option than a prolonged absence from work.

Recommendations for GPs

- Think beyond the physical symptoms. Bring to bear your understanding of the biopsychosocial model and the limitations of the biomedical model in your diagnosis of the patient and – most importantly – your assessment of the role that their job might play in helping them stay active and avoid isolation. As a GP you are ideally placed to identify the early presentation of many MSDs. Where appropriate, you should seek to refer patients to specialist teams as early as practicable, to enable management of the condition to begin.
- Avoid catastrophising. A patient can hold a very negative view of the impact and likely progression of their condition if the way that clinicians present it focuses on incapacity rather than capacity.
- Encourage self-management. Try to ensure that the patient can adopt strategies to manage aspects of their own condition, especially if they are staying in or returning to work. A feeling of empowerment and control will help their mood and ensure that they can keep on top of important aspects of their incapacity while at work.
- Early intervention. The evidence suggests that long periods away from work are usually bad for MSD patients. The longer they are away from work, the more difficult it is to return. Early action, preferably in partnership with the patient and their employer, can help achieve a balance between the individual's need for respite and their need to work.

Recommendations for occupational health professionals

- Think beyond the physical symptoms. More importantly, ensure employers, employees and GPs fully appreciate how this multi-factor perspective can contribute to constructive, active, participative and sustainable rehabilitation. Shape your interventions and advice around the three domains of the biopsychosocial model and help employers see how small workplace adjustments can bring wider benefits than just compliance with the Disability Discrimination Act (DDA).
- Early intervention. OH professionals, above all others, understand the benefits of early interventions with MSDs. They must play a proactive part in mediating between employer and employee, or employer and GP to ensure that the patient can use return to work as a positive part of the way they learn to manage their condition and maintain their sense of self-worth and self esteem.

- Encourage self-management. Working with the employee, their colleagues and their manager, help the individual to find strategies to manage their own condition. This will enable them to make their own decisions about their working arrangements.
- Support managers with job design interventions. Making 'reasonable adjustments' under the DDA is often seen by managers as a way of complying with the law. Helping managers to look at job redesign as a more constructive way of meeting the needs of a patient/worker with an MSD and meeting changing customer demands can help them to see the business benefits of more flexible working arrangements.

Recommendations for Government

- Help make GPs more effective in handling occupational health issues. This will require an input into GP training, through the Postgraduate Medical Education and Training Board. In fact, we believe that medical training at all levels, from undergraduate to continuing professional development would benefit from inclusion of health and work issues.
- SME's need particular help with occupational health. They often lack expertise and do not always know where to seek advice. There should be a dedicated public support service available to them. The HSE's Workplace Health Connect has yielded only mixed early results.
- Alternative approaches to reaching employees with MSDs who work in smaller organisations must be prioritised.
- The Musculoskeletal Framework (MSF) is a welcome contribution to the effort to prioritise early intervention in diagnosis and treatment of MSDs, especially among those of working age. The opportunities for the MSF to support the drive for 'joined up' working between government departments, to help reduce the time taken to diagnose MSDs and to highlight the benefits of early access to rehabilitation and treatment by physiotherapists and other allied health professionals (AHPs) are considerable. We urge the government to ensure that the MSF remains a properly resourced priority.
- We need some better measures to assess the social, economic and work impact of MSDs to allow NICE guidelines to take these more explicitly into account when evaluating treatments and therapies. Changes to the NICE Statutory Instrument would allow them to take appropriate account of the benefits of full and active labour market participation. Economically efficient guidance on drug therapies may protect the NHS budget but can put extra strain on that of the DWP.

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Appendix 1 – Expert interviews

We interviewed the following people during the course of our research and we are very grateful for the time each spent with us. We have taken their views into account in writing this report, though their participation in the study does not in any way imply endorsement of the report's conclusions.

Sarah Bazin	Chair of the Chartered Society of Physiotherapy
Dr John Ballard	Editor, Occupational Health @ Work
Dame Carol Black	The Government's National Director for Health and Work
Alisa Bosworth	Chief executive, National Rheumatoid Arthritis Society
Paul Buckley	Health and Safety Executive
Professor Paul Emery	Professor of Rheumatology, University of Leeds
Dr Bill Gunnyeon	Chief Medical Advisor, Department for Work and Pensions
Brian Kazer	Chief Executive, British Occupational Health Research Foundation
Professor Sayeed Khan	Chief Medical Adviser of Engineering Employers Forum
Dr Mike O'Donnell	Chief Medical Officer, UNUM Provident
Susan Oliver	Chair of Royal College of Nursing Rheumatology Forum
Jane Skerrett	Director of the National Ankylosing Spondylitis Society
David Snashall	Head of Occupational Medicine, Kings College London
Professor Gordon Waddell	Orthopaedic surgeon with clinical and academic interests in the field of back pain and related disorders.
Dr Nerys Williams	Medical Policy Advisor, Department for Work and Pensions

Appendix 2 – Expert interview questions

The Work Foundation Study of Musculoskeletal Disorders (MSDs) & Work

Expert Interviews

N.B. Some interviewees had specific expertise relating to one or more MSDs. The interviews focused on the conditions with which they were most familiar.

Questions

A. Prevalence and impact

1. What do we know about the incidence of these MSDs in the working age population and how this is changing? (eg trends over time, gender, age, occupational differences). Is there good evidence about the main factors which might account for these changes?
2. What is the 'typical' pattern of onset and progression with these MSDs? Are we getting better at early diagnosis? If so, what impact does (could) this have?
3. In the context of work, what are the primary effects of these MSDs on functional capacity, job retention, work effectiveness, productivity and wider labour market participation?
4. What other problems are associated with these MSDs? (eg fatigue, concentration, mental health problems). How do these affect the progress of the condition, return to work etc?

B. Responses and interventions

1. To what extent are employers aware of the impact of these MSDs on their employees, the design of their jobs and on the quality of their working lives? What are the strengths and weaknesses of employers' responses?
2. To what extent is the government aware of the impact of MSDs on productivity, reduced work effectiveness, mental health and labour market participation?
3. What interventions can help working age people with these MSDs to return to and remain in work? (eg drug therapies, physiotherapy, OH, OT).

- Is there any evidence on the cost and benefits of these measures?
 - What interventions from policymakers are needed to keep people in employment?
 - What interventions are needed from employers to maximise functional capacity and quality of working life?
 - Does the size of the organisation make a difference in terms of making reasonable adjustments to accommodate people with MSDs?
4. When people receive a diagnosis of these MSDs, which professional groups are associated with treatment or support? To what extent do these groups communicate? Do people fall between the gaps and, if so, what are the consequences?
 5. How well-equipped are GPs to diagnose these conditions and refer patients with these MSDs? How good is their understanding of the occupational health implications? What can be done to ensure GPs are playing a constructive part in the management of these conditions for patients in work?
 6. What provision is there within the NHS for people with these MSDs? How well equipped is the NHS to provide early intervention, case management, rehabilitation and other support for those with these conditions (both newly diagnosed and those with long term needs) to:
 - Retain their jobs;
 - Maximise quality of working life/contribution;
 - Maintain access to routes back into work for those who have had time away from work.
 7. What examples of best practice exist in the management of these conditions in employment settings? What do these examples have to commend them and what can government, the NHS and employers learn from them?

C. Future challenges

1. What will be the consequences of failing to improve our understanding, diagnosis, treatment and management of these MSDs for:
 - individual workers
 - employers
 - the government and the wider economy?

2. What three things could the government do to minimise the economic and social consequences of these conditions? Which interventions would have the most impact for the least cost?
3. What are the main barriers to the adoption of more enlightened and sustainable management of these conditions in employment settings? How could these barriers be overcome?
4. Are there any key resources or contacts that we should follow up as part of this study?

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