

Rev 17/3/05 (v.4 - final)

**RESEARCH AGENDA FOR THE PRIORITY PROGRAMME ON
MUSCULOSKELETAL DISORDERS
(2005/06 EDITION)**

Summary

This paper sets out the latest agenda for research on musculoskeletal disorders (MSD), designed to help achieve the targets in the Health and Safety Commission (HSC) priority programme on MSD. It is published to help research groups and other stakeholders to understand the research priorities that we believe are required, to foster debate and collaboration, and to help in the generation and development of specific, relevant research proposals. The research agenda is reviewed annually and published with any necessary revisions. This version has been produced following a survey of recent research, literature reviews and other published information, undertaken by HSE officials during 2004. It is intended that it should guide research priorities for the next five years.

Background

Musculoskeletal disorders (MSD) are the commonest kind of occupational ill health. In 2003/04 it was estimated that about 1.0 million people in Great Britain were suffering from a MSD caused by work, accounting for half of all occupational ill health. It was estimated that about 200,000 **new** cases of work-related MSD occur each year; and that around 11.6 million working days are lost each year to work-related MSD. The cost to society was earlier estimated at about £5.7 billion (at 1995/96 prices). Musculoskeletal disorders can affect any part of the musculoskeletal system, but the highest levels of reporting relate to the back, followed by the neck and upper limbs.

In early 2004, the Health and Safety Commission (HSC) published its business plan for 2004/05. This is aimed at delivering HSE's Public Service Agreement (PSA) targets which have their origins in the 2000 occupational health strategy, "*Securing Health Together*" (SH2) and in the Government's *Revitalising Health and Safety* (RHS) initiative. HSC acknowledges that MSD is the single largest contributor to occupational ill health, and a major contributor to working days lost in the UK. It will be essential to tackle MSD in order to achieve the PSA targets.

The work being done as part of the MSD programme is brigaded under the five SH2 programme elements:

- Compliance: to improve the law and promote compliance with it;
- Continuous improvement: to promote a culture where issues are addressed through stakeholders collaborating, forming partnerships and valuing best practice.
- Knowledge: to obtain the knowledge required to move other parts of the agenda forward and monitor success;
- Skills: to ensure all interested parties have the necessary competence and skills to promote occupational health;
- Support: to improve the delivery of advice and support where it is needed.

More information about the Musculoskeletal Disorders programme can be obtained from the HSE website <http://www.hse.gov.uk/msd/>.

Planning the revised MSD research agenda

HSE has a long history of sponsoring research on MSD and most of the previous research is available to view or download on the HSE website. Links to this published research can be found under "Relevant research" at <http://www.hse.gov.uk/msd/information.htm> In the late 1990s HSE began taking a more strategic look at future MSD research themes and involved leading experts in identifying where further research was needed. This led to a paper giving an overview of UK research needs, which was promoted through the Ergonomics Society and in other professional circles (see references).

HSC's recent emphasis on delivering the ill-health targets in the MSD programme has meant taking a different approach to formulating our MSD research strategy in which we focus on those issues that will help deliver the MSD programme targets. This new approach was begun during 2002/03 when the first version of this research agenda was published. The change in emphasis means that, unlike the earlier research strategy, the agenda is more concerned with achieving specific outcomes (i.e. action which results in reduced levels of MSD and working days lost) and less with fundamental research. It is presented as a framework that identifies the broad areas within which research can contribute to the aims of the MSD programme. It is expected that this framework will remain relevant for the duration of the MSD programme although the details under each theme are reviewed annually and can change.

The agenda takes as its starting point a broad definition of MSD. It is not focused on any one type of musculoskeletal problem or body region (e.g. the neck and upper limb, back and lower limb are all included). It also recognises that tackling the MSD issue requires flexibility of approach and willingness to intervene at whatever is the most appropriate stage to prevent or mitigate development of these conditions. So the agenda is not based around any particular model of prevention. It is recognised that in relation to occupational disorders, such as MSD, consideration of the job-specific risk factors (physical, psychological and organisational) and the individual are essential aspects of prevention. However the agenda also seeks to go wider than these immediate factors, in improving the effort to prevent and control MSDs by including management and rehabilitation aspects of MSD.

Since the agenda is primarily concerned with helping HSE and stakeholders achieve the MSD programme targets, it is expected that some of the aims are likely to be met by research led and funded by others or through collaboration with relevant organisations.

Use of the agenda

The research agenda will primarily be of use to HSE officials to guide their planning and prioritisation of projects. Most projects will be commissioned through the usual tendering process, although some may be undertaken as reactive support. The agenda will also be useful to researchers and other interested parties to inform them about HSE's expected plans. However, it is not the intention that the agenda should be seen as an open invitation to submit unsolicited proposals on any of the research areas listed. It is unlikely that unsolicited proposals will be funded.

It is hoped that other funding bodies with an interest in aspects of the prevention and management of work related MSD will find this agenda helpful in assisting them to establish their own priorities and research programmes.

It is possible that projects identified by other funding bodies that clearly contribute to the MSD research agenda may be suitable for collaborative funding.

Work to tackle MSD features in a number of other HSE programmes, for example, construction, public services, worker and business involvement, and other cross cutting interventions. The MSD research agenda will inform the development of research priorities in these other programmes where MSD are important health outcomes. It is also noted that some of the work under the stress programme is relevant to MSD and that links to this programme need to be strengthened.

Utilisation of Results

It is important that all the research commissioned on MSD links clearly into the MSD programme and contributes to meeting HSC/E's targets. Some work may contribute directly such as that which helps with targeting action towards particular sectors or issues. The agenda particularly encourages research that can have a rapid impact on tackling the MSD issue. However, the results of other projects will require further development and dissemination before they can have an impact. For example, research findings will often need to be critically reviewed before being incorporated into HSE guidance when a suitable opportunity arises.

Evaluation of the Agenda and Outcomes

Evaluation of the research agenda will link into the MSD programme evaluation process. Each research project will be evaluated on whether it has met its objectives, delivery of outputs on time and to cost and on how the results have been used. It may not always be possible to make a clear link between individual research projects and progress towards the reductions required in the MSD programme targets. This is partly due to the complex nature of MSDs and partly due to the time lag between the resulting action

and outcomes. However, progress towards the targets will be monitored and linkages made as far as is possible.

As it stands the agenda does not contain detailed proposals for evaluating the impact of individual projects. However such proposals are likely to form part of work in connection with intervention logic models which HSE is developing at the moment.

The list of priority research topics is reviewed each year in the light of the results of completed projects, and the overall needs of the MSD programme. HSE officials undertake these reviews.

Contact

For any queries about the MSD Research Agenda, please e-mail nigel.watson@hse.gsi.gov.uk

References

HSC (2004). *Health and Safety Commission Business Plan 2004/05*. <http://www.hse.gov.uk/aboutus/plans/hscplans/0405/index.htm>.

HSC (200X). *A strategy for workplace health and safety in Great Britain to 2010 and beyond*. <http://www.hse.gov.uk/aboutus/hsc/strategy2010.pdf>

HSC (2001). *HSC Strategic Plan 2001-2004 Summary*. HSE Books MISC 319a. or <http://www.hse.gov.uk/aboutus/plans/hscplans/plan0104.htm>

HSC (2000). *Securing Health Together: A long-term occupational health strategy for England, Scotland and Wales*. HSE Books MISC 225.

HSC (2000). *Revitalising Health and Safety: Strategic Statement*. DETR.

Morris, L.A., McCaig, R.H., Gray, M., Mackay C.J., Dickinson, C.E., Shaw, T.F. and Watson, N. (1998a). Prevention of musculoskeletal disorders in the workplace: a strategy for UK research. In Hanson M (Ed) *Contemporary Ergonomics 1998, Proceedings of the Ergonomics Society Annual Conference*, London: Taylor and Francis

Morris, L.A., McCaig, R.H., Gray, M., Mackay C.J., Dickinson, C.E., Shaw, T.F. and Watson, N. and Leighton, D. (1998b) Development of a UK strategy for the prevention of work related musculoskeletal disorders. Abstract in proceedings PREMUS-ISEOH '98, Helsinki: Finnish Institute of Occupational Health

COMPLIANCE

This theme is about improving health & safety law and compliance with it by duty holders. This means considering factors that contribute to the effectiveness of our health and safety system. The overall aim is to increase the number of duty holders complying with occupational health-related law.

The 2004 review found evidence to support the continued use of a preventative approach to the MSD issue e.g. through risk assessment and risk reduction. Therefore it is important that HSE continue to find ways of encouraging duty holders to comply with health & safety law relevant to MSD. To achieve improved compliance we need to ensure that inspectors are adequately trained and that regulations and their associated guidance are appropriate, coherent and easy to follow. We also need to seek the most effective ways of ensuring that duty holders are aware of the relevant law and guidance and their duties under them. In addition we need to ensure that suitable tools are available for carrying out risk assessments and that information is available on the application of appropriate risk control systems (although this is more properly covered under Support).

With respect to musculoskeletal disorders this programme of research will therefore be concerned with:

- Identifying and developing the tools and information that inspectors and duty holders need in order to enforce on/comply with the law on MSD;
- Getting data to ensure effort is targetted appropriately at the sectors and groups where MSDs are prevalent;
- Evaluating the effectiveness of HSE in regulating MSDs. This includes assessing the effectiveness of existing regulations and guidance, success in influencing duty holders regarding MSDs, etc.

Past work that contributes to the MSD compliance theme includes the evaluations of the Display Screen Equipment and the Manual Handling Regulations and associated guidance; the development and promotion of the Manual Handling Assessment Charts (MAC) and the further development and evaluation of the Quick Exposure Check. Current research includes an evaluation of the impact the MAC can make on compliance with the law on manual handling. The aims below highlight the areas where HSE believes research can contribute to the Compliance theme, the focus of such research and the desired outcomes.

Aim Co-1: To identify, develop and evaluate appropriate tools and information needed by inspectors and duty holders in order to enforce on/comply with the law on MSDs

The recent review did not find any new tools or techniques that could be easily applied or adapted to MSD risk assessment by duty holders or inspectors. There is still scope to develop additional MSD risk assessment tools and information, although immediate priority should be given to refining, validating and increasing the use of existing tools. Tools need to be validated

using an evidence-based approach, but the criteria used to assess tools for duty holders will be different to those aimed at researchers and 'professional' users. The outcome should be usable and effective tools for use by inspectors and duty holders to help them make quick and accurate assessments.

Expected outcome: easier, more effective identification of where MSD risks can be reduced and improved compliance with the law.

Aim Co-2: To effectively address those sectors and groups where MSDs are most prevalent

Priority areas are expected to be those where MSDs are believed to be a serious cause for concern either because of exposure to relatively high risk (e.g. patient handlers) or the large numbers affected (e.g. computer users). High prevalence could indicate the effect of other influences such as socioeconomic or personal factors e.g. ageing. There is little new UK data which aids the identification of high risk occupations and means of obtaining better data are being considered (see Knowledge aim K-2). In the meantime, it is true that MSD symptoms are present in most workplaces and there is an argument for pursuing a population-based approach which attempts to reduce overall levels of MSD by encouraging action across all workplaces and by seeking co-operation with other organisations to tackle the issue from all angles (in and outside work, from cradle to grave) – this links to the Continuous Improvement theme.

This aim is also concerned with addressing changes in work practices, employment sectors and work equipment and technology. It will be necessary to more clearly identify these sectors/changes and then identify the most appropriate ways of reaching and influencing them. This aim therefore also links to both the Support and Knowledge themes (see later sections).

Expected outcome: that the results from HSE's regulatory efforts and activities are maximised.

Aim Co-3: To evaluate the effectiveness of HSE as a regulatory body in addressing MSDs

This aim is concerned with determining where and how HSE can improve in its performance in tackling MSD with respect to traditional approaches (e.g. the provision of advice, guidance and enforcement) as well as exploring new ways of influencing others to take action. Some relevant work (e.g. the impact studies) has been done previously by HSE, but little specifically on MSD. The available evidence suggests that measuring effectiveness (e.g. relating HSE action to changes in ill-health) presents a challenge and methods need to be developed further and new approaches sought out; but it also supports the continuation of all current activities – for example face-to-face contacts with employers by inspectors are very effective in raising awareness and promoting action, though resource intensive. Some generic SH2 work on this topic (e.g. on duty holder attitudes and reasons for non-compliance) will feed

into the MSD Priority Programme as well as a recent study which examined worker perceptions of MSD risks. There will also be a need to evaluate the effectiveness of the revised Display Screen Equipment and Manual Handling Regulations and the associated guidance in a few years time.

Expected outcome: the information required to improve HSE's effectiveness in regulating MSDs.

CONTINUOUS IMPROVEMENT

This theme is about promoting a culture and environment where occupational health issues are addressed. This means encouraging more openness and acceptance with respect to the relevant hazards, risks and health outcomes. The aim is to facilitate collaboration and partnership working to address occupational health. There are strong synergies with other elements within the Better Health at Work programme.

The challenge here is to get those who currently overlook occupational health issues to realise their significance and to begin to take action. Such action needs to go beyond compliance with health & safety law, and include rehabilitation where necessary. To achieve this we will need to identify those best placed to act in partnership with HSE and to gain their involvement, encouraging people to collaborate, form partnerships and work together in innovative ways to address musculoskeletal disorders. We will need to influence through the provision of appropriate messages, leading by example and facilitating the development of appropriate support systems.

In this context the partnerships include:

- employers or trade associations and employees or trade unions within particular occupational sectors;
- relevant professional groups (e.g. ergonomics and occupational health consultancies/practitioners);
- employers and health care professionals in local areas;
- employers and national health and safety organisations.

In terms of MSDs, this programme of research is concerned with:

- Finding how best to address the needs of particular groups with specific requirements or where inequalities exist;
- Understanding how to gain the involvement in and commitment to partnership working of collaborators, to effectively use partnership working to improve compliance and ensure continuous improvement by promoting the kind of culture and environment required in duty holder organisations, that is, by example, through campaigns etc.

Past work in this area has included the Back in Work programme jointly funded with the DoH and research into inequalities in the experience of musculoskeletal disorders. Current research includes the application of the staged approach to the prevention of musculoskeletal disorders. Future research ideas are likely to address how best to enable different types of partnerships to operate, including providing them with appropriate information and how best to disseminate established good practice and to achieve its uptake on a widespread basis. Some of these issues will relate to perceptions, attitudes and behaviour change. This may extend to considering how to influence and promote the health of groups of workers who are already disadvantaged in the labour market. Some work may relate to developing

more sensitive markers of harm arising from musculoskeletal symptoms to allow interventions at an earlier stage in their development, going beyond currently accepted standards for compliance.

Aim CI-1 To identify how best to meet the needs of those with particular requirements, including rehabilitation of those with an injury/ill-health.

This aim is concerned with identifying the variation in risks from MSD hazards that particular groups are exposed to and how to adequately address them. The evidence shows that age is one significant factor in the development of MSD symptoms, which could be important in interpreting the data on incidence given the ageing profile of the UK workforce. The effects of obesity in relation to MSD risk may also need to be better understood given its emergence as a UK health concern. The range of groups may include new and expectant mothers, young workers, older workers particularly post-menopausal women, disabled workers, homeworkers, migrant workers etc. Better information is currently available for some of these than others. Migrant workers pose particular challenges given the present lack of information about their characteristics.

Expected outcome: better inclusion of such groups in occupational ill-health/MSD prevention and rehabilitation.

Aim CI-2 To identify and promote better tools for MSD health monitoring.

In going 'beyond compliance' many employers may need to be more proactive than at present and will need ways to identify MSD symptoms at an early stage. There are no practical approaches available currently other than the use of self-report measures (e.g. body-mapping). Identification of a decrement in performance has been suggested as a possible tool to detect signs of the development of MSDs. However, there is currently little research published on this topic and it seems fraught with difficulties. There seems little scope for the development of better techniques, although more work spent refining the existing self-report tools/techniques might be beneficial. This aim is mainly included for completeness - it is not currently seen as a high priority for HSE.

Expected outcome: better tools for MSD health monitoring and/or wider understanding of the limits of what is practicable.

Aim CI-3 To identify the most effective approaches to managing sickness absence and return to work.

Managing sickness absence and return to work is an emerging area for HSE. HSE has funded work on obstacles to MSD recovery and has two current projects related to the topic, on active case management / rehabilitation cost benefit studies and pain management. HSE's parent department, DWP, has a strong interest in long term sickness absence and has funded important work based on the biopsychosocial model. The implication is that a 'systems' approach is needed for successful rehabilitation. However, further work is

needed in order to produce more specific understanding. The results of the current HSE projects will inform the way forward for HSE on this topic.

Expected outcome: clear guidelines on which approaches to rehabilitation and active case management are the most effective.

KNOWLEDGE

This theme is concerned with promoting the collection and processing of facts and data to move other parts of SH2 forward and to monitor success. This means facilitating and encouraging data collection, processing and sharing by relevant parties. The aims are to gain increased collaboration in collecting/processing such information using a co-ordinated and standardised approach.

To achieve this theme requires identifying what information is needed, how it should be collected (i.e. standardised approach), who is best placed to collect or provide it, who should process it, who should disseminate the results and in what form. Encouraging trust and collaboration will be imperative for the aims to be achieved.

In terms of MSDs, there are four main aspects to this theme: -

- Seeking a clearer understanding about the relationship between MSD and stress;
- Finding out which solutions work and under what circumstances;
- Gaining more information on incidence and prevalence data across the working population and in particular sectors/groups;
- Improving our understanding of the pathomechanisms and epidemiology of MSDs and their prevention.

In the past a significant component of HSE's MSD research focused on the development of the scientific knowledge base (i.e. relating to the fourth bullet above). But the emphasis is now less on gaining a full understanding of MSD and more on determining how to reduce it. Previous research has generated useful information on prevalence and the risk factors linked to MSDs. This included the SWI surveys and epidemiological research on supermarket cashiers and keyboard operators. Work continues on developing existing and new sources of data (see *Achieving the Revitalising Health and Safety Targets: Statistical Progress Report, November 2004* at <http://www.hse.gov.uk/statistics/pdf/prog2004.pdf>).

Recent research has looked at the link between stress and MSD with the results suggesting the MSD programme would benefit from having stronger links to the stress programme. Other recent research has examined, for example, whether the use of warm up or stretching exercises has a beneficial effect in terms of MSD prevention/management. For the future, the emphasis under this theme is more on gathering better information to help provide baseline and target assessment data (although most of this will be collected outside the MSD programme) and on finding practical solutions to MSD. HSE is keen to encourage a fresh approach with greater collaboration and encourages other organisations to take a more proactive role in relevant MSD research.

Aim K-1: To find out which solutions work and under what circumstances.

There have been relatively few intervention studies published to date and even fewer good quality ones. However, appropriate models for carrying out effective intervention studies have been published. What are now needed are more high quality intervention studies to determine what works especially in reducing MSD incidence and re-occurrence. This aim also requires the sharing of information and knowledge arising from stakeholder experience of different solutions to MSD problems. There is scope for formal research also to examine particular kinds of solutions and their application, relevance and benefit in particular situations. There is evidence that management commitment and worker involvement are important factors for the success of an intervention, but research would also provide a better understanding of the barriers to success.

Expected outcome: better information on the ways of solving MSD problems in different circumstances.

Aim K-2: To establish incidence and prevalence of MSDs across the working population and in particular sectors/groups.

This aim will be met through the use of a variety of data collection methods including surveys to establish the incidence and prevalence of musculoskeletal disorders. Most of this work will be addressed outside the MSD programme, in consultation. The sharing of relevant data between organisations is one means that needs to be encouraged. HSE has also put effort into developing a new survey (WHASS) and enhancing some of its other existing data collection methods. There are also a number of surveys which HSE could potentially tap into to gain further data sources. Current data tends not to provide detail of type and severity of MSDs and more information is needed to enable pinpointing of high risk tasks and occupations (including those deriving from new technology or new working practices). Work in this area could help ensure we target our efforts more effectively. There is also a need to develop improved intelligence about the prevalence and incidence of lower limb disorders.

Expected outcome: better data that can be used by HSE and other stakeholders to target effort appropriately (see also Compliance) and to determine progress against the SH2 targets.

Aim K-3: To improve our understanding of the risk factors for MSD, their relative importance and the interactions between them.

The physical risk factors linked to MSDs are well understood and there is convincing evidence to support their role. Although there is a need to improve knowledge of the factors that affect causation and prevention of lower limb MSDs and to provide better guidance in this area.

We recognise that there has been a shift in emphasis in recent years towards the role of more psychological and organisational factors. HSE has funded recent work on the relationship between psychosocial variables and the development of MSD. While a growing body of research supports the important contribution of these 'new' factors, evidence for the contribution of physical risk factors remains substantially stronger. Further work on understanding of the relationship is likely to be more fruitful if the present reliance on self-reported MSD symptoms is reduced e.g. by using more objective measures, or the existing self-report tools are further developed (see also CI-2).

Expected outcome: a better understanding of the relative roles of psychosocial and physical risk factors in the reporting of MSD.

Aim K-4: To continue encouraging studies into the pathomechanisms and epidemiology of MSDs.

This aim is included in recognition that further work in this area may be worthwhile. However, it is not currently a high priority for HSE and we expect that much of the fundamental research to achieve it will be initiated and funded by other stakeholders. It is suggested that research under this aim could include:

- developing improved epidemiological methods and tools for studying MSD to facilitate early identification and better management
- studies of the natural history of MSDs with a particular focus on the development of acute versus cumulative/chronic cases
- developing/assessing exposure assessment methods for use in large scale longitudinal studies to refine our understanding of the risk factors associated with MSDs
- studies on the nature of the pathomechanisms for musculoskeletal disorders including investigating possible early indicators (e.g. biomarker such as cytokine responses);
- studies to better understand the changes associated with damage and the recovery process at the cellular or tissue level
- much work could be done on further exploring factors associated with individual susceptibility (e.g. gender, genetics and age) especially in particular sub-groups of the overall population at risk.

Expected outcome: a greater understanding of the fundamental aspects of MSDs allowing better approaches to prevention, management and rehabilitation to be developed.

SKILLS

This theme is about ensuring all relevant parties have the relevant competence and skills to perform their roles effectively. This means determining the relevant competencies and skills and how they can be gained. The aims are to obtain an understanding and agreement as to what the relevant skills are and to increase the opportunities to gain them.

To achieve this requires gaining an understanding of the competencies and skills that are relevant to tackling MSD occupational health issues. Then an assessment needs to be made of the best way for people to gain them and the opportunities available for them to do so.

In terms of MSDs there will be a range of competencies and skills which are relevant. These are likely to apply at different levels ranging from employees to managers through to occupational physicians and other specialists. E.g. GPs need good diagnostic skills; supervisors, safety reps, H&S consultants and others need skills in ergonomics risk assessment and workplace redesign; OH nurses, physiotherapists, GPs need rehabilitation skills. The research will need to focus on:

- Determining how to increase knowledge and competence where skills are lacking or in need of improvement and the opportunities available to do so;
- Determining what range of competencies and skills those who tackle MSDs need and to what level. This includes the skills needed by HSE and LA inspectors, workers, supervisors/managers, etc as well as relevant professionals and experts.

Past work in the skills theme includes developing a diagnostic aid for general practitioners to use in the management of cases of upper limb disorders and providing support via the training initiative for trade unions to promote the technique of body mapping. Recent research has been largely centred on understanding how to increase the effectiveness of health professionals in managing cases of upper limb disorders. Future research may relate to the process of identifying necessary skills (e.g. by means of training needs analysis), developing vehicles to deliver these skills and evaluating their effectiveness.

HSE's future interests are likely to focus on the needs of groups who would not be served by other bodies such as professional organisations. This might include the needs of individual workers and employers in the SME (small-medium enterprise) sector. Where professional bodies exist HSE will seek to work with them in identifying ways to improve and spread more widely the skills available for tackling MSD.

Aim Sk-1: To determine how to increase the MSD skills, knowledge and competence of workers, employers and trainees/students, and create opportunities to do so.

Little research has been published on what MSD-relevant skills are required by people in the workplace. The range of such skills is likely to range from risk assessment and control through to knowledge of how to work safely (e.g. use of your body). The latter overlaps with workplace interventions in as much as training (e.g. in lifting techniques) could be used as an intervention but should also be imparting knowledge and skills. This aim encompasses:

- scoping the competencies and skills required in order for relevant parties in the workplace (e.g. workers, supervisors/managers, safety representatives etc) to tackle MSDs;
- understanding the factors influencing employers', supervisors' and managers' perception of the risk of musculoskeletal disorders and their likelihood of using appropriate control measures.

HSE will be particularly interested in workplace training such as the development and assessment of training packages on ergonomics awareness and understanding, or on specific topics such as manual handling. This aim may include research concerned with:

- increasing supervisor and manager skills in involving workers and their representatives in developing and implementing reporting and control strategies for MSDs;
- the availability and effectiveness of MSD risk assessment training;
- finding out what relevant skills are taught in schools and other educational and vocational training courses and seeking ways to increase them.

As well as looking at what opportunities are available this aim is concerned with assessing ease of access to them.

Expected outcome: improved prevention and early identification of MSDs leading to a reduction in the number of working days lost due to MSDs.

Aim Sk-2: To determine how to increase the skills, knowledge and competence of HSE and LA staff, and create opportunities available to do so.

The effectiveness of officials responsible for regulating health & safety at work and delivering the MSD programme has an important role to play in delivering the targets. Therefore it is important to seek ways of evaluating and upgrading the MSD skill and confidence levels of such staff, who may work for either HSE or Local Authorities. Effective training is a way of doing this and HSE has been providing training to its Field Operations inspectors on ergonomics and MSD since the late 1990's. Such training has also been made available to LA inspectors through a self-study package or by attending one of the courses. However, only a proportion of inspectors will have attended the training and its effectiveness is not clear. There is scope for

gaining a better understanding of the competencies inspectors (and others) actually require and those they already have; how effective the existing courses actually are; and how to improve the training and support that is available both to HSE and LA inspectors.

The needs of specialist staff should also be considered, although to some degree this is addressed through the relevant professional bodies (e.g. the Ergonomics Society).

Internal reorganisation of HSE's science and technology resources is also addressing this issue. The Skills programme also hopes to conduct an analysis of what inspectors need to deliver the MSD programme.

Expected outcome: an improved understanding of the minimum and preferred levels of knowledge and skill currently available and required in order for HSE and LA staff to successfully tackle MSD and how to achieve this.

Aim Sk-3: To determine current levels of specialist skills, how to increase them and the opportunities available to do so.

There is a broad range of specialist skills that can be applied to tackling MSD problems. These range from ergonomists and designers, through the various medical specialists (GP, OH doctor/nurse, rheumatologist, physiotherapist, podiatrist) and alternative medical specialists (chiropractor, osteopath). For many of these (e.g. ergonomist, GP, OH Nurse) MSD is but one of a variety of issues they may be asked to address and so level of knowledge and skills varies widely. Clearly such people have the potential to contribute to tackling MSD issues at various stages of the process and should therefore be a useful resource for employers and employees to call upon. A scoping exercise that could be undertaken by the relevant professional bodies might provide clarification of the distribution and depth of relevant skills amongst members. Professional bodies are expected to play a leading role in terms of the training that is relevant to their members.

HSE has funded work over recent years concerned mainly with medical professions. Work has looked at training needs amongst health professionals. There appears to be scope for improving the training and support provided to these specialists on MSD.

HSE needs to look at other specialists too so that the most appropriate way forward can be sought. As well as looking at what opportunities are available this aim is concerned with assessing ease of access to them. An example area that may be addressed is increasing the skills of ergonomists and others in providing cost-benefit assessments of interventions for MSDs.

Expected outcome: improved prevention and management of MSDs leading to a reduction in the number of working days lost due to MSDs.

SUPPORT

This theme is concerned with ensuring employers and employees have available the appropriate information, advice and support, provided by competent individuals or organisations. This means identifying what is appropriate, who is best placed to provide it and then ensuring it is provided. The aims are to identify what is needed to help people to contribute to SH2 targets and to set up suitable ways of delivering this and ensuring they are known about.

To achieve this theme will require the identification of the information, advice and support needs of all those who can help in tackling occupational health issues. It will also mean identifying the means by which it can be provided and the agents who can be involved most effectively in delivering this support.

With respect to MSDs this means the research agenda is concerned with: -

- Identifying the information, advice and support needs of all those who can help tackle MSDs, especially duty holders and employees, but also various other intermediaries and suppliers, and how best to meet them;
- Evaluating existing guidance relevant to MSDs and identifying the most appropriate channel and form for the delivery of this support so that improvements can be made where necessary.

Past work that contributes to this programme includes the revision and publication of HSG60 (HSE's Upper Limb Disorders guidance) and research into portable computer use and non-keyboard input devices which fed into the recent revision of DSE guidance. Future research needs are likely to focus on ways of improving the accessibility of HSE information particularly for SMEs. Intermediaries are expected to play an increasingly large part in providing support.

Aim S-1: To identify how to provide the right support to the right people in the most appropriate way.

This aim may require research to ensure we are addressing the support needs of the full range of stakeholders. HSE is particularly concerned to reach small businesses since they form a major proportion of the UK employment base, but also minority groups and employment sectors who may have particular support requirements. Research could examine:

- the optimal balance between enforcement and advice;
- identifying practical ways to achieve oral, face-to-face communication with SMEs;
- and identifying new and alternative ways of getting our messages across, especially to achieve a long-term impact.

It is also important to consider the needs of those who design, manufacture or supply equipment and machinery if they are to make a useful contribution to the reduction of MSDs by improving design. Research needs to examine if there are other opportunities where additional guidance or information might

be beneficial. This could include the provision of better information, or standards, for designers, suppliers and purchasers of work equipment and machinery.

Expected outcome: more relevant, appropriate, targeted information and advice.

Aim S-2: To evaluate the content, form and channel for delivery of existing approaches HSE uses for support on MSDs so that improvements can be made.

HSE is moving away from relying entirely on traditional written guidance and has in recent years sought alternative ways of providing information and support. A recent success (based on the evaluation of its impact on advice given and health beliefs about back pain) is the HEBS-led Working Backs Scotland national educational campaign in which HSE collaborated. Building on this, HSE is collaborating on a new project based in two areas of England which seeks to replicate the findings on the effectiveness of multi-media interventions in influencing beliefs about back pain. Other research may include the evaluation of Upper Limb Disorders guidance (HSG60) and other MSD guidance which is not linked to specific regulations. Research may also include an examination of how to influence and communicate effectively with employers and employees using, particularly for SMEs, practical solutions. This could include considering the most appropriate ways of reaching duty holders e.g. through publications, publicity, campaigns, topic coverage through the media (e.g. in 'soap opera' storylines), etc. There will also be a need to consider if better use can be made of intermediaries such as employers/trade associations etc. Most research fulfilling this aim will be carried out under the generic SH2 programme. Some work has already been undertaken on improving access to occupational health.

Expected outcome: greater impact through more effective advice and guidance relevant to MSD prevention, control and management.