

Prevention policy and practice: approaches to tackling work-related musculoskeletal disorders

European Risk Observatory

Report

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Table of Contents

Executive summary	6
Introduction	6
Methodology.....	6
The 25 initiatives	7
The six initiatives studied in depth	8
Findings.....	10
Themes identified in the policy analysis	11
1 Introduction: overview of policy-level initiatives fostering preventive action in the workplace in relation to musculoskeletal disorders	14
1.1 Background to the overview	14
2 Study objectives	14
3 Methodology.....	15
3.1 Identification of national initiatives.....	15
3.2 Collation of initiatives.....	15
3.3 Selection of 25 initiatives.....	17
3.4 Selection of the six initiatives for detailed review	19
3.5 Preparation of in-depth reports.....	20
4 The 25 initiatives selected.....	20
5 In-depth country reports	27
5.1 Introduction.....	27
5.2 The six reports summarised	27
6 EU background.....	29
6.1 EU legislative framework and policy.....	29
6.2 EU OSH strategies	30
6.3 Centralised EU initiatives to address MSDs.....	31
7 Analysis: pulling it all together – what policy actions have the potential to help in the planning and execution of interventions for the prevention of MSDs?	32
7.1 Introduction.....	32
7.2 Policy actions and drivers for the planning and execution of interventions for the prevention of MSDs	36
7.3 Summary of messages.....	42
8 Conclusions.....	46
Annex: Classification taxonomy for the 25 initiatives	51

Executive summary

Introduction

The project entitled 'Review of research, policy and practice on prevention of work-related musculoskeletal disorders' aimed to gain a more complete understanding of the occupational safety and health (OSH) challenges in tackling work-related musculoskeletal disorders (MSDs). The intention of the project was to provide a better understanding of the conditions under which strategies, policies and actions to address MSDs are most effective. To achieve this goal, a range of policy-level strategies and initiatives that were used by major stakeholders, including regulators and regulatory agencies, social partners, professional bodies and preventive services were identified. Following their identification, an analysis was undertaken to determine how these various strategies were adapted to the conditions and needs of different beneficiaries (e.g. in different sectors).

To complement this analysis, the resources that were developed and used in the initiatives described were reviewed, with a view to identifying the factors that contributed to their success or failure (including any barriers to their implementation).

Methodology

The starting point for this study was a list of intervention initiatives. This list was compiled from responses of the national Focal Points (FOPs) ⁽¹⁾ of most European Union (EU) Member States ⁽²⁾ to a questionnaire sent to them by the European Agency for Safety and Health at Work (EU-OSHA). The FOPs were asked to list up to 10 policy-level OSH initiatives carried out over the period 2010-2018. These initiatives needed to be expressly or mainly related to the prevention of work-related MSDs, or to public health initiatives on the prevention of MSDs, and needed to include a significant OSH component.

Over 140 interventions were reported, and these were supplemented with a number of initiatives that were not initially reported by Member States, and some further initiatives from a limited number of non-European countries. Exclusion and inclusion criteria were drawn up and used to select 25 initiatives to be examined further. As part of this selection process, a key consideration was to ensure there was a good range of types of initiative. However, no attempt was made to present a balanced geographical spread, as it was felt that the suitability of initiatives was the overriding factor.

The 25 initiatives were drawn from 14 different countries (including three non-European countries: Australia, Canada and the USA). These represented a wide variety of types of action, ranging from awareness-raising campaigns (including some aimed at schoolchildren or other young people) to direct interventions through inspection and enforcement action. The initiatives from the non-European countries were chosen for their innovative approaches that complemented those undertaken in the EU countries.

Following this selection process, desk research was carried out based on material supplied by the FOPs and from a number of other sources, including interviews with those responsible for the initiatives. On the basis of this material, 25 short summary reports were prepared covering each of the initiatives selected.

Initially, the plan was to restrict the selection of initiatives to those that had undergone some form of formal evaluation to establish their impact. However, it became apparent that very few had been through a systematic and thorough evaluation process and so this criterion was not strictly applied.

Building on this initial work, initiatives from six European countries were chosen for more detailed analysis. The selection was based on the original 25 initiatives selected but, in some instances, the decision was made to broaden the reach of the evaluation to reflect the overall policy or strategy in the

¹ Nominated by each government as EU-OSHA's official representative in that country, the FOPs are typically the national competent authorities for safety and health at work and are primary contributors to the implementation of EU-OSHA's work programmes.

² At the time of publication of this report, the United Kingdom is no longer a Member State of the European Union. Nevertheless, it was still part of the European Union when the research was carried out in 2018-2019; therefore, henceforth in this report, the United Kingdom is referred to as a Member State.

country selected, not just the initiative selected. The six countries selected then also served as the focus for in-depth analysis of the practical experiences of implementing MSD prevention actions in workplaces.

These six reports are available at <https://osha.europa.eu/en/themes/musculoskeletal-disorders>.

Material for these in-depth reports was derived from further desk research and explorations of publicly available material, complemented by interviews with relevant stakeholders in the countries concerned.

The 25 initiatives

The original 25 initiatives are representative of what has been done, and what can be done, for preventing MSDs in the workplace. The initiatives were selected to be as varied as possible, in terms of both the intervention and the target group, and they include campaigns, interventions, legislation, inspections, infographic material and financial assistance at the national level that was usually specifically targeted at small and medium-sized enterprises (SMEs).

The initiatives selected were as follows:

Country	Title
Australia	A participative hazard and risk management (APHIRM) toolkit for the prevention of musculoskeletal disorders
Austria	Campaign/Support scheme for micro and small enterprises — AUVAsicher
Austria	Healthy working in the HORECA sector — Prevention of psychological and ergonomic strain: a targeted campaign of the Austrian Labour Inspectorate
Belgium	Campaigning on musculoskeletal health: 'When a worker suffers, the whole company is affected' and 'Well-being at work in the federal truck'
Belgium	Intervention typology and guidance on preventing musculoskeletal disorders
Canada	Development of a new prevention guideline for musculoskeletal disorders for Ontario
Denmark	The Danish National Job & Body Campaign
Denmark	A strategy for working environment efforts up to 2020 — Risk-based inspections
Denmark	Preventing low back pain in bricklaying work
France	Epidemiological monitoring of work-related health problems: Cohorts Coset-MSA and Coset-Independents
France	TMS (<i>troubles musculo-squelettiques</i>) Pros and assistance of regional coordinators
Germany	The prevention campaign of German Social Accident Insurance (DGUV) — 'Think of me — Your back' (<i>Denk an mich — Dein Rücken</i>)
Germany	Prevention makes you strong — including your back (<i>Prävention macht stark — auch Deinen Rücken</i>)
Germany	The Preventive Health Care Act of 2015 (<i>Präventionsgesetz</i>)
Italy	Economic Incentive Programme
Netherlands	National Social Programme on Working Conditions (MAPA) — Sub-programme on physical workload
Netherlands	Sustainable Physical Work Network
Norway	3-2-1 Together for a good working environment
Norway	Be prepared! (<i>Føre var!</i>) — Norwegian Labour Inspection Authority project to prevent work-related musculoskeletal disorders

Country	Title
Spain	Programme to prevent ergonomic and psychosocial risks in the health and social care sectors
Spain	Good practice guidelines for on-foot shellfish workers
Sweden	Women's work environment
Sweden	Provisions and general recommendations for the prevention of musculoskeletal disorders
UK	Helping Great Britain Work Well strategy and Work Programme on MSDs
USA	NIOSH Musculoskeletal Health Cross-Sector Program

The six initiatives studied in depth

As noted above, following a preliminary examination of the 25 initiatives selected, the initiatives of six EU Member States were selected for in-depth appraisal. They are briefly summarised below.

Austria

The prevention of MSDs has been a fundamental goal of the Austrian Workers' Compensation Board (*Allgemeine Unfallversicherungsanstalt* — AUVA) since 2007. In 2009-2010, AUVAsicher (AUVA's long-term assistance programme for SMEs) focused specifically on MSDs in response to the increased incidence of MSDs and (frequent) related absences from work in Austria. AUVAsicher is underpinned by the fact that SMEs are legally obliged to make use of safety-related and occupational-medical counselling services.

The challenges faced by SMEs in understanding and addressing workplace safety and health are well recognised. The approach of this intervention, by placing specific legal obligations on such employers, presents an interesting concept that might have value for other Member States. The MSD initiative adopted through the AUVAsicher scheme therefore provided an interesting case study for in-depth appraisal.

The target group for AUVAsicher was Austrian SMEs with up to 50 employees (or up to 250 when employees worked in several branch offices). The consultation targeted personnel in SMEs involved in worker protection, workers and employers themselves, workers' representatives and safety advisors.

Implemented through the regular OSH services provided by AUVAsicher to SMEs, the initiative aimed to reduce the incidence of MSDs in three ways, namely through (1) increasing awareness among employers and employees on the prevention of MSDs, (2) proposing and implementing measures to prevent MSDs in enterprises and (3) providing information and instruction.

Belgium

The aim of the campaign 'When a worker suffers, the whole business is affected' was to raise awareness of MSDs and of the tools that can be used to prevent them. It was set up in response to a relatively static (high) incidence of MSDs in Belgian workplaces. This campaign reflected an ongoing national strategic approach that, in recent years, has adopted an increasingly holistic approach to work and health, integrating wellbeing at work and seeking to broaden the 'reach' of MSD messages beyond the narrow focus on workplaces. Although the use of promotional campaigns is not new, the broader dimension of Belgium's initiatives was considered valuable and could be used as a template by other countries. In previous years, the ministry developed a series of MSD prevention brochures for different professions and jobs. The website and the outreach activities promoted the use of these materials.

The focus of the campaign 'Well-being at work in the federal truck' in 2015-2016 was on MSDs and it specifically targeted students in secondary education. The aim was to provide information about MSDs and their causes, and how they can be prevented.

France

The current national strategic plan on health at work adopts a strong focus on the prevention of workplace risk and includes a specific action on the design of equipment and workplaces. MSDs have a major economic effect on French businesses, accounting for 87 % of all work-related illness. Prompted by the burden imposed by MSDs, Health Insurance — Occupational Risks (*Assurance Maladie Risques Professionnels*) launched a national-level prevention programme in 2014, TMS (*troubles musculo-squelettiques*) Pros.

The objective of the programme was to tackle work-related MSDs. It offered businesses support for the development of an action plan to put in place effective MSD prevention measures to reduce the prevalence of work-related MSDs. This strong emphasis on prevention through design is widely recognised as being particularly effective in the long term and this initiative was therefore considered worthy of more detailed appraisal. This initiative was considered within the wider national context, as in France a number of other initiatives have been implemented, such as an initiative to improve the epidemiological surveillance of occupational risks in France (the CONSTANCES population-based epidemiological cohort and the COSET programme).

Germany

Although the incidence of work-related MSDs appears to have fallen in Germany in recent years, it remains high and further action is required to address this and reduce the resultant burden. In 2015, Germany passed an act to strengthen health promotion and preventive health care, namely the Preventive Health Care Act (*Präventionsgesetz*). It stipulated that a National Prevention Strategy (*Nationale Präventionsstrategie*) needed to be developed by the country's different health insurance funds, to be implemented through a National Prevention Conference (*Nationale Präventionskonferenz*, NPK). It therefore provided a strong legal basis for cooperation between social security institutions, federal states and local authorities in the field of prevention and health promotion, as it provided a framework for the development of recommendations and common goals in this area. Goals developed under the National Prevention Strategy needed to take into account the goals of the Joint German Occupational Safety and Health Strategy (*Gemeinsame Deutsche Arbeitsschutzstrategie*, GDA). As a result of the concrete coordination and planning activities required by this law and the budget associated with it, this act has laid important groundwork for MSD prevention in the workplace.

This policy approach, namely collaboration at a strategic level between different partners that is enshrined in legislative provisions, helps to ensure a degree of consistency and coordination that would not be possible if each organisation worked in isolation on individual initiatives. As there is a widespread trend in many European countries (and further afield) towards adopting a more holistic view of health and work, it was considered pertinent to explore this integrated systematic approach in greater depth.

Sweden

Prompted by statistics that showed that women are disproportionately affected by MSDs, in 2011 the Swedish Government tasked the Swedish Work Environment Authority (SWEA — *Arbetsmiljöverket*) with investigating the topic of 'women's work environment' (government decision A2011/2209/ARM). The assignment encompassed a number of projects, with the aim of building an evidence-based plan of action. These projects involved knowledge generation and the dissemination of that knowledge to key players, namely those who had the power to change working conditions and the work environment. The assignment was for the period 2011-2014, and its focus on gender and work has become now 'mainstreaming' and embedded in the national strategy for MSDs prevention.

In September 2014, SWEA received another assignment: to further develop the lessons learned from the previous assignment in order to improve safety and health in mainly female-dominated sectors (e.g. one of the aims was to 'create and make accessible tools for risk assessment with a special focus on women's work environment'). This would benefit not only women but also men working in those sectors. In 2015, SWEA was given further funding to continue this work and to develop sustainable procedures for including the gender perspective in OSH management.

These initiatives had several mutually reinforcing aims: first, to increase knowledge and awareness of the status of women's occupational health, including their higher risk for developing MSDs, and, second, to develop better methods of highlighting the risks of MSDs in SWEA's inspections. This increased knowledge and awareness is also expected to translate into greater gender-sensitivity in workplaces and ultimately into an improved work environment for both women and men. This enhanced gender-sensitivity places Sweden ahead of many of its European neighbours and, therefore, this approach was explored further to establish lessons that might be of value elsewhere.

United Kingdom

The incidence of work-related ill health in the UK remains unacceptably high and MSDs continue to be a major component of this. As the latest in a series of strategies and initiatives, the strategy 'Helping Great Britain Work Well' was launched in 2016 and will be in place until 2021. It defines six priority themes, one of which tackles work-related ill health ranging from cancer and other long-latency diseases to stress and MSDs. Key elements of this theme have included earlier prevention, which is the most cost-effective strategy, and a greater focus on health issues at work.

This strategy is operationalised through the comprehensive Health and Work programme of the Health and Safety Executive (HSE), which has three health priority plans. The plan for MSDs summarises the UK's current position in relation to MSDs, sets priorities and expected outcomes and defines actions to achieve these priorities and outcomes. In addition, sectoral plans were drawn up to define the HSE's focus over the next 3-5 years. These cover 19 industry sectors and reflect both the three health priorities and the direction set out in the 'Helping Great Britain Work Well' strategy. Employers, trade unions and professional bodies provided input into the development of the sectoral plans.

The policy approach adopted in the UK is focused on enabling and informing, encouraging employers to take action and to address risks, rather than taking the more prescriptive approach adopted in many other EU countries. In the context of concerns about gaps in prescriptive legislative provisions in many EU Member States, this strategy was considered a viable alternative and so was selected for further evaluation.

Findings

Some of the selected interventions had been monitored over the course of their implementation and information on their implementation had been collected (e.g. publicity campaigns that documented the 'reach' of the publications used or the number of visitors to exhibitions). However, no evaluations of their impacts, documenting their success (or failure) in reducing the prevalence of MSDs at work, could be identified for any intervention. One barrier to any such evaluation that emerged during the exercise was the poor quality (or complete lack) of viable data that such an assessment could be based on. Many countries therefore instead have to rely on EU surveys such as the European Working Conditions Survey (EWCS) ⁽³⁾ together with data on workplace injuries collated by Eurostat.

The 2015 EWCS included questions on the extent to which individuals were subject to work exposures to MSDs, such as carrying or moving heavy loads, as well as self-reported health problems over the preceding 12 months. These included one question on backache and two questions on muscular pains in the upper and lower limbs. Although providing a useful general picture of the prevalence of MSDs, the data provide little insight into specific causes (e.g. manual handling).

Like the EWCS, Eurostat's Labour Force Survey (LFS) ad hoc module on accidents at work and other work-related health problems is carried out fairly infrequently, namely every 6 to 8 years. Again, this makes it difficult to use the data to gauge the impact of a relatively short intervention. Eurostat houses a further database relating to accidents at work (European Statistics on Accidents at Work — ESAW), into which data are collated annually, including data on 'injuries' to the back. However, as the database defines an injury as 'a discrete occurrence in the course of work which leads to physical or mental harm', it does not include the cumulative injuries that are the cause of many back problems.

³ The EWCS covers, in addition to the EU Member States, other countries; these differ across surveys, but, in 2015 (the sixth survey), five EU 'candidate' countries together with Norway and Switzerland were included.

Although some national data provide limited additional insights, the inadequacies of such data present challenges. In many instances, for example, the data are limited to officially recognised MSDs. Therefore, the data present an incomplete picture of the overall prevalence of MSDs and their impact on individual sufferers and those who employ them, as well as on national support infrastructures such as health care and rehabilitation services.

A further limitation of such cross-sectional data is that it is not possible to infer causality from these data sources. The evaluation report on the implementation of the Manual Handling Directive ⁽⁴⁾ referred to this problem. In considering the effectiveness of the directive, it concluded:

It is not possible to determine the extent to which these reported injuries and health problems are directly associated with manual handling activities.

The same report continued:

Statistical data sources relevant to manual handling risks are not ideal as they usually focus on injuries without reference to the underlying cause.

Although the initiatives in question were all felt to have been successful (and, as shown by reports from follow-up visits, those that directly engaged with and were used in workplaces did seem to have evoked real change), there was no evidence to demonstrate their overall effectiveness in reducing the prevalence of MSDs.

From the detailed analysis of the policy initiatives in the six selected countries, including interviews and material from focus group records, several themes emerged that reflected the success factors and challenges in policy-level interventions. As noted above, these did not reflect measurable success (as this could not be assessed), but factors of significance were identified, namely factors that would be valuable to take into account in any future programme of interventions.

One overarching issue that transcends individual interventions is the question of legislation and its benefits. Some countries have detailed legislation requiring employers to engage in certain actions to address workplace hazards and risks relevant to MSDs, although there are pressures to provide more prescriptive legislation specific to MSDs, covering a more comprehensive range of MSD risks than is already the case. Such pressures were apparent in comments made during focus groups that were carried out as part of the present project, and were documented as part of the *ex post* evaluation of the EU OSH directives ⁽⁵⁾. However, legislation cannot be presented as a solution to the difficulties in reducing the prevalence of MSDs, because there is evidence from a number of countries (as reported in the focus groups) that employers do not adequately respond to existing legislative requirements, and a significant minority of companies fail to engage with the process at all.

Themes identified in the policy analysis

A series of central themes has emerged from this research and these should underpin future policy-level interventions to prevent MSDs in the workplace.

Top-level prioritisation, commitment and resourcing

The complexity and multifactorial nature of MSDs means that they cannot easily be addressed by one actor acting in isolation within the national occupational health infrastructure. To be successful, policies need commitment and prioritisation from all actors, starting at the top. In the case of national activities, this might involve government/political prioritisation, although, in the case of industry-specific initiatives, commitment from stakeholders within the industry, rather than from government, is more likely to be effective. Such commitment is unlikely to be effective without adequate resourcing to ensure that it is carried through into concrete action.

⁴ DG Employment, Social Affairs and Inclusion (2015) Evaluation of the Practical Implementation of the EU Occupational Safety and Health (OSH) Directives in EU Member States — Report by Directive: Directive 90/269/EC on the minimum health and safety requirements for the manual handling of loads where there is a risk particularly of back injury to workers.

⁵ DG Employment, Social Affairs and Inclusion (2017) Evaluation of the Practical Implementation of the EU Occupational Safety and Health (OSH) Directives in EU Member States: Main Report, available at: <https://ec.europa.eu/social/main.jsp?catId=148&langId=en&moreDocuments=yes>

Encouraging collaboration among stakeholders

Involvement in a process helps people to become committed to that process. This applies whether a strategic-level intervention or an individual workplace intervention is planned. Whatever the level of intervention and action, there is undoubted value in involving all stakeholders in identifying risks and in identifying, developing and introducing risk control or prevention intervention strategies (or workplace measures).

Incentivising positively

Both negative and positive incentives appear to be effective in successful workplace change. Their degree of effectiveness relies substantially on the national culture and the perception of change. There is widespread support for the role of formal inspection — and with it the threat of punitive action when failings are identified. However, in one country (France), it was suggested that an inspection was seen by employers as so unlikely that it ceased to present any motivation.

Although information and education are valuable, they are, at times, insufficient, especially among smaller businesses that lack expertise in-house. Therefore, direct support and guidance, either in-kind or financially, can provide a positive incentive for employers to take action.

Despite many efforts to publicise the benefits of workplace interventions (through cost-benefit analyses), businesses can see them as intrusive, invasive and disruptive (and this is one reason why they frequently use training as a ‘solution’). Focused support (including financial incentives where appropriate) can help to provide an incentive for change and encourage the adoption of more effective preventive measures.

Coherent planning

Too often, interventions have been carried out without due consideration of the intervention logic or the development of a theory of change to describe and illustrate how and why the desired change is expected to happen. Policy-level interventions need coherent planning, with the intervention logic clearly thought out and explored without neglecting the fact that MSD prevention is one part of the integrated actions needed to promote safety and health in the workplace.

Adopting a wider perspective

There is a widespread tendency to compartmentalise issues and this is especially true of MSDs, which are complex. Workers are not isolated individuals within an organisation; generally, a person cannot (or should not) be seen as purely a task performer, without physical, psychological or social perspectives. There is growing recognition of the fact that workers are exposed to MSD risks outside work (e.g. individual workers might have care responsibilities at home involving a degree of lifting and handling) and that their altered susceptibilities as a result must be taken into account in the workplace. A culture that regards the human worker as, in effect, an ‘integrating entity’ that reacts to a wide range of influences in a variety of scenarios (often referred to as a ‘whole life’ perspective) is essential. Moving towards a broader approach, whereby occupational health and public health are considered as a unified entity, is considered a positive step, but this is not yet occurring in all Member States.

Providing continuity

Policy-level actions should not simply stop once they have been completed. They should be continually evaluated and refined, and new (or refreshed) activities should draw on experiences of what has gone before and build on those experiences to improve intervention effectiveness and efficacy.

Promoting the preventive approach

In some countries, there are well-established teams for addressing MSD risks at work. However, in some cases, these teams often act in a responsive, rather than a preventive, manner, initiating action only when a problem arises, rather than taking steps to prevent it from happening in the first place. MSD-related legislation sets out a preventive pathway, and this should be better encouraged to prevent MSDs from occurring.

The preventive pathway embodied in OSH legislation recognises the importance of primary, secondary and tertiary measures, where appropriate. However, the legislation establishes these as a clear hierarchy, with primary prevention taking priority. Evidence from focus group discussions and experience elsewhere suggests that many employers adopt the ‘easy’ tertiary measure of manual handling training and do not give adequate consideration to workplace design measures that can ‘design out’ primary risks. However, it must be acknowledged that measures such as training do have a role to play at times — as do rehabilitation measures designed to help those with injuries return to or remain in employment. A human-centred approach — a central tenet of ergonomics — is essential, with workplaces designed to fit the worker, rather than expecting the worker to fit the workplace.

Strengthening the role of ergonomics and ergonomics teaching

The need for expertise in ergonomics has been highlighted in this study. Ergonomists are able to liaise with designers, engineers and others to develop solutions and to take an ergonomic approach to risk identification and job redesign. It is important to recognise that the ergonomics discipline does not concern itself only with the physical hazards associated with the immediate workplace; instead, it adopts a ‘systems’ approach, exploring the roles of work organisation and the wider organisational environment.

This is not to suggest that ergonomics should solely be the responsibility of professional ergonomists. Experience has shown that other disciplines, including design, engineering and psychology, can benefit from ergonomics knowledge and awareness. As well as enabling professionals from those disciplines to apply ergonomics principles in their own work, such knowledge and awareness can help to facilitate communication between the different disciplines. A number of countries are understood to provide ergonomics training to their inspectors, for example. Beyond these professional groups, there are also suggestions that other groups (e.g. workers themselves) would benefit from suitable ergonomics awareness training.

1 Introduction: overview of policy-level initiatives fostering preventive action in the workplace in relation to musculoskeletal disorders

1.1 Background to the overview

Musculoskeletal disorders (MSDs) are, worldwide, among the most frequently reported ill-health problems in the workplace. The European Agency for Safety and Health at Work (EU-OSHA), recognising the gravity of this phenomenon, carried out the project 'Review of research, policy and practice on prevention of work-related musculoskeletal disorders'. The project comprised three research components. The first was an exploratory literature review that examined the reasons for the continued high prevalence of MSDs in the European Union (EU) and identified gaps in prevention practice. The second (which findings are presented in this report) was an extensive policy analysis, across EU countries and beyond, to gain a better understanding of the conditions under which strategies, policies and actions to address MSDs are most effective. The third was field research carried out in six EU Member States to explore, through focus groups, what was happening at the workplace level and, through interviews, the role of strategies and policies in MSD prevention. This report presents the second part, the policy analysis.

The aim of this component of the project was to gain a more complete understanding of the challenges for occupational safety and health (OSH) policy-makers in tackling work-related MSDs. It was intended to provide a better understanding of the conditions under which strategies, policies and actions to address MSDs are most effective. The project team identified a variety of strategies and initiatives used by stakeholders (including regulators and regulatory agencies, social partners, professional bodies and preventive services) and explored how these strategies were adapted to meet the conditions and needs of different beneficiaries (e.g. in different sectors).

In addition, the resources developed and used in these initiatives, such as guidance, toolkits, training packages, web applications and e-tools, were reviewed to identify factors contributing to their success or failure (including any barriers to their implementation).

The structure of the report reflects this approach, beginning with short descriptions of 25 specific policy-level initiatives that were systematically selected from over 140 such initiatives reported to EU-OSHA by national representatives in the EU Member States. Drawing from both the 25 initiatives selected and the initial information set, six countries were selected for in-depth analysis. These six were selected because they demonstrated a variety of national strategic approaches to the prevention of MSDs that other countries could potentially learn from and adapt for their own purposes. Finally, the evidence accumulated from the 25 short reviews, the six in-depth reviews and other project material (e.g. the focus groups conducted in the third project component) was drawn together to provide an overarching policy overview.

2 Study objectives

In essence, the objectives of the study were to:

- explore the range of strategies and initiatives used by major stakeholders (including regulators and regulatory agencies, social partners, professional bodies and preventive services);
- investigate the role and effectiveness of strategies, policies, programmes and other policy instruments and identify success factors of and obstacles in their implementation;
- gain a more complete understanding of the challenges for OSH in tackling work-related MSDs and a better understanding of the conditions under which strategies, policies and actions to address them are most effective.

3 Methodology

3.1 Identification of national initiatives

The starting point for the identification of national initiatives was the responses sent to EU-OSHA by its network of National Focal Points (FOPs)⁶ in reply to a consultation questionnaire on policies and practices in the area of MSDs.

The FOPs were asked to list up to 10 policy-level OSH initiatives that were expressly or mainly related to the prevention of work-related MSDs, or to public health initiatives on the prevention of MSDs, that included a significant OSH component. The responses referred to the time period 2010-2018.

To guide respondents, the questionnaire listed categories of initiatives for possible inclusion. This comprised:

- legislation included in OSH strategy;
- action plans;
- programmes;
- major research projects;
- guidance;
- campaigns;
- targeted inspections or other initiatives by the labour inspectorate;
- social partners' initiatives;
- support schemes for micro and small enterprises;
- initiatives by insurance providers.

3.2 Collation of initiatives

In total, the FOPs identified 142 initiatives from EU and European Free Trade Association (EFTA) countries as summarised in Table 1. Not all countries submitted a response (Lichtenstein, Luxembourg, Malta and Poland did not do so) and, as shown in the table, some others that did submit a response had no initiatives to report.

Table 1: Focal Points' survey results

Country	No. of initiatives	Responding institution
Austria	8	Federal Ministry of Labour, Health, Social Affairs and Consumer Protection
Belgium	9	Federal Public Service Employment, Labour
Bulgaria	0	Ministry of Labour and Social Policy
Croatia	0	Ministry of Labour and Pension System
Cyprus	3	Department of Labour Inspection
Czechia	1	Occupational Safety Research Institute
Estonia	4	Labour Inspectorate of Estonia

⁶ Nominated by each government as EU-OSHA's official representative in that country, the FOPs are typically the national competent authority for safety and health at work and are primary contributors to the implementation of EU-OSHA's work programmes.

Country	No. of initiatives	Responding institution
Finland	4	Ministry of Social Affairs and Health
France	6	Ministry of Labour
Germany	10	Federal Institute for Occupational Safety and Health
Greece	5	Ministry of Labour, Social Security and Social Solidarity
Hungary	1	Ministry for National Economy
Iceland	8	Administration of Occupational Safety and Health
Ireland	10	Health and Safety Authority
Italy	10	National Institute for Insurance against Accidents at Work
Latvia	9	State Labour Inspectorate of Latvia
Lithuania	6	State Labour Inspectorate of the Republic of Lithuania under the Ministry of Social Security and Labour
Netherlands	5	TNO - The Netherlands Organisation for applied scientific research
Norway	7	The Norwegian Labour Inspection Authority
Portugal	5	Authority for Working Conditions
Romania	2	The National Research and Development Institute for Occupational Safety and Health
Slovakia	1	National Labour Inspectorate
Slovenia	3	Ministry of Labour, Family, Social Affairs and Equal Opportunities of the Republic of Slovenia
Spain	10	INSSBT - National Institute for Safety and Health at Work'
Sweden	7	Swedish Work Environment Authority
Switzerland	3	State Secretariat for Economic Affairs
UK	5	Health and Safety Executive

3.3 Selection of 25 initiatives

To facilitate the selection of a suitable set of initiatives for inclusion in the current study, a number of exclusion and inclusion criteria were identified to be applied to the primary list of 142 initiatives as listed in Table 1. The exclusion criteria were developed and applied in the first step.

These exclusion criteria were as follows:

- not a policy-level initiative ⁷;
- not focused on work-related MSD prevention;
- not yet implemented or implemented before 2010.

Initiatives were also excluded when 'MSD prevention' was not mentioned in the textual description of the intervention. Most of the research projects were excluded through this more restrictive application, especially when there was no information on the research results having been applied in a broader policy context.

Through a restrictive interpretation of these exclusion criteria, the original list was reduced to 60-70 initiatives.

As the next step, inclusion criteria were developed and applied to the remaining 60-70 initiatives, to reach the final selection of initiatives. The inclusion criteria were as follows:

- as this was intended to primarily be desk-based research, information needed to be available through contact with the FOP, research papers, an informative web link or other published material readily available;
- indications that the initiative had been delivered (or was being delivered) and was not just planned;
- some level of evaluation of the results/impact of the initiative.

The initial plan was to restrict the selection of initiatives to those that had undergone some form of formal evaluation to establish their impact. However, it became apparent that very few initiatives had actually been through a systematic and thorough evaluation process and so this criterion was not strictly applied.

The assumption was that, if the originators had any evidence of the effectiveness of any specific intervention, this would have been publicised. Nevertheless, the organisation responsible for the initiative was approached to establish if any such material existed and, if so, if it could be shared.

The candidate initiatives from the EU and EFTA countries were supplemented by initiatives from beyond Europe. This resulted in three further initiatives being selected from Australia, Canada and the USA. The rationale for their selection was that they appeared to offer innovative approaches that were complementary to those undertaken in the EU countries.

The list of initiatives proposed for inclusion were discussed and agreed with EU-OSHA. As part of this final selection process, consideration was given to providing a good range of types of initiative. However, no attempt was made to present a balanced geographical spread, as it was felt that the suitability of the initiative was the overriding factor.

A descriptive taxonomy was developed to classify and categorise the selected initiatives. This included the type of initiative, the responsible organisation (promoter), the target strategy and the main focus (workplace or other). The results from this are presented in Annex 1. The taxonomy shows that the 25 initiatives encompassed a wide variety of approaches, in terms of the type of initiative adopted (e.g. enacting specific legislation or conducting focused campaigns), the involvement of different organisations and stakeholders, and the focus of the initiative.

⁷ Entries were excluded only when they were clearly not related to a policy-level initiative, for example when they described a tool that could then be used as part of an initiative.

The final 25 initiatives chosen and agreed with EU-OSHA were developed into short reports and are listed in Table 2. These short documents are available as stand-alone reports ⁸.

Table 2: Initiatives approved for further evaluation

Country	Title
Australia	A participative hazard and risk management (APHIRM) toolkit for the prevention of musculoskeletal disorders
Austria	Campaign/Support scheme for micro and small enterprises — AUVAsicher
Austria	Healthy working in the HORECA sector — prevention of psychological and ergonomic strain: a targeted campaign of the Austrian Labour Inspectorate
Belgium	Campaigning on musculoskeletal health: 'When a worker suffers, the whole company is affected' and 'Well-being at work in the federal truck'
Belgium	Intervention typology and guidance on preventing musculoskeletal disorders
Canada	Development of a new prevention guideline for musculoskeletal disorders for Ontario
Denmark	The Danish national job and body campaign
Denmark	A strategy for working environment efforts up to 2020 — risk-based inspections
Denmark	Preventing low back pain in bricklaying work
France	Epidemiological monitoring of work-related health problems: Cohorts Coset-MSA and Coset-Independents
France	TMS (<i>troubles musculo-squelettiques</i>) Pros and assistance of regional coordinators
Germany	The prevention campaign of German Social Accident Insurance (DGUV) — 'Think of me — Your back' (' <i>Denk an mich — Dein Rücken</i> ')
Germany	Prevention makes you strong — including your back (<i>Prävention macht stark — auch Deinen Rücken</i>)
Germany	The Preventive Health Care Act of 2015 (<i>Präventionsgesetz</i>)
Italy	Economic Incentive Programme
Netherlands	National Social Programme on Working Conditions (MAPA) — Sub-programme on physical workload
Netherlands	Sustainable Physical Work Network
Norway	3-2-1 Together for a good working environment
Norway	Be prepared! (<i>Føre var!</i>) — Norwegian Labour Inspection Authority project to prevent work-related musculoskeletal disorders
Spain	Programme to prevent ergonomic and psychosocial risks in the health and social care sectors
Spain	Good practice guidelines for on-foot shellfish workers
Sweden	Women's work environment
Sweden	Provisions and general recommendations for the prevention of musculoskeletal disorders
UK	Helping Great Britain Work Well strategy and Work Programme on MSDs
USA	NIOSH Musculoskeletal Health Cross-Sector Program

⁸ Available at: <https://osha.europa.eu/en/related-content/16697/publication/4700%2B173>

Each of the initiatives was described using a standard template, agreed with EU-OSHA, that included:

- a summary of the national OSH legislative background and other relevant contextual information;
- a description of the initiative;
- a summary of the aims of the initiative;
- the stakeholders and organisations that participated;
- what was done and how;
- what the initiative achieved.

Emphasis was also placed on success factors and challenges and the possible transferability of the initiative to other countries or other target groups.

3.4 Selection of the six initiatives for detailed review

Following the preparation of the short reports, initiatives from six countries were selected for further review.

This selection served two purposes. First, the six countries were selected to provide the basis for the development of in-depth country reports that aimed not only to provide additional material about the initiative, but also to frame the initiative and other national initiatives against the current background of national policies and strategies for MSD prevention. The aim of this overview was to:

- gain a more complete understanding of the challenges for OSH in tackling work-related MSDs and a better understanding of the conditions under which strategies, policies and actions to address them are most effective;
- explore the range of strategies and initiatives used by major stakeholders (including regulators and regulatory agencies, social partners, professional bodies and preventive services) and how these strategies are adapted to the conditions and needs of different beneficiaries (e.g. in different sectors);
- review the resources developed and used in the initiatives described, such as guidance, toolkits, training packages, web applications and e-tools.

The six countries were also selected to provide the basis for the third component of the project (reported elsewhere), namely to explore in detail (through focus groups and interviews) MSD prevention activity in the workplace to provide insight into how the national policies and strategies were reflected among companies (i.e. a focus on practitioners rather than on policy-makers).

The 25 initiatives that had been summarised in the short reports served as the initial raw material to help identify the six countries for in-depth study. However, it was recognised that an important aspect of this next phase was to explore a range of different approaches, with a particular emphasis on a systematic approach to prevention and reflection of a variety of different policy instruments (e.g. cross-policy initiatives, action plans, campaigns, sectoral initiatives, major research programmes that involved workplace interventions, funding schemes, etc.). Detailed discussions of the 25 initiatives were therefore widened to take into account other preventive initiatives adopted within the countries they were drawn from, although, in some instances, the limited number of additional initiatives reported meant that it was not always possible to establish a wider focus of action in a particular country. At this stage, given the dual purpose of this exercise, the non-European countries included in the 25 initiatives were excluded. This left 11 countries that were considered further. It should be noted that the identification of the final six was constrained by the limitations of the initial source material supplied by the FOPs, as some countries made a nil return (or did not submit a response).

The initiatives and approaches selected were from six countries, Austria, Belgium, France, Germany, Sweden and the UK, and comprised the following:

- a campaign/support scheme for micro and small enterprises — AUVAsicher (Austria);
- the prevention of MSDs as a priority in the national strategy and campaigning on MSD prevention (Belgium);
- the TMS Pros programme and other initiatives to tackle MSDs (France);
- a systematic approach to preventing MSDs, including the Work Programme on Musculoskeletal Disorders of 2013-2018 of the Joint German Occupational Safety and Health Strategy (*Gemeinsame Deutsche Arbeitsschutzstrategie* — GDA) entitled 'Prevention makes you strong — including your back' (Germany);
- the 'Women's work environment' project and MSD prevention initiative (Sweden);
- the 'Helping Great Britain Work Well strategy on tackling MSDs (UK).

3.5 Preparation of in-depth reports

In-depth reports were prepared for the six selected initiatives. These reports incorporated knowledge from the focus groups and the policy-level interviews conducted with the national experts and aimed to investigate further the reality in each Member State. This entailed further desk research to identify, for example, additional MSD statistics (where available), especially in relation to trends in the incidence or prevalence of MSDs, to provide the rationale behind the intervention. These were further refined with the addition of material relating to national policies and strategies for OSH in general and for MSDs in particular. In some instances, published reports were available describing aspects of the initiatives selected, and material from these was also used in formulating the reports.

Investigations aimed to explore the success factors in implementing the approach described, as well as the challenges and obstacles faced. Where appropriate, material derived from focus groups was used to explore apparent gaps between policies and practices at the workplace.

4 The 25 initiatives selected

Applying the exclusion and inclusion criteria summarised above resulted in the initial list of candidate initiatives being reduced to 28. These were further reduced when preliminary investigations revealed a paucity of additional information on certain initiatives, leaving 25 for reporting as case studies. These are briefly summarised below.

- **Austria: healthy working in the HORECA sector — prevention of psychological and ergonomic strain: a targeted campaign of the Austrian Labour Inspectorate**

This was an initiative created by the Austrian Labour Inspectorate and included targeted labour inspections in the hotel/restaurant/café (HORECA) and hospitality sector over a 2-year period.

The aim of the initiative was to promote the prevention of psychosocial and ergonomic risks and resulting health problems among workers in the hospitality industry and, in the long term, to reduce the prevalence of these health problems in the sector. The initiative also sought to improve the implementation of workplace risk assessment, safety and health documentation and the application of the principles of risk prevention, as provided for in the Worker Protection Act. In addition to reducing the physical risks associated with MSDs, the initiative was intended to support the implementation of the 2012 European Inspection Campaign 'Prevention of psychosocial risks'.

The initiative targeted various groups of employees (mixed age/gender groups, migrant workers, part-time/full-time/temporary workers, etc.). The hospitality sector is mainly composed of small and medium-sized enterprises (SMEs), which pose particular challenges in terms of awareness and implementation of workplace risk assessments. This is due to a frequent lack of financial resources, time and knowledge to carry out such assessments.

- **Austria: Campaign/Support scheme for micro and small enterprises — AUVAsicher**

The Austrian Workers' Compensation Board (*Allgemeine Unfallversicherungsanstalt*— AUVA) provides assistance to SMEs through 'AUVAsicher' prevention centres in every federal state. AUVAsicher is a prevention model that was initiated by AUVA as a long-term assistance programme to SMEs. The programme was developed following an amendment to the 1994 Health and Safety at Work Act (*ArbeitnehmerInnenschutzgesetz*), requiring SMEs to make use of OSH preventive services.

This specific MSD initiative was carried out in 2009-2010 within the regular preventive services provided through AUVAsicher. The aim of the initiative was to reduce the incidence of MSDs through increasing awareness among employers and employees on the prevention of MSDs, proposing and implementing measures to prevent MSDs in enterprises and providing information on MSD prevention. Following presentations to organisations, there were further consultations on MSD prevention. These consultations targeted those persons in SMEs involved in worker protection, for example certain employees and employers, worker representatives or safety advisors.

- **Belgium: Campaigning on musculoskeletal health: 'When a worker suffers, the whole company is affected' and 'Well-being at work in the federal truck'**

The Belgian Federal Public Service Employment, Labour and Social Dialogue (FPS Employment) launched its campaign on the prevention of MSDs in November 2015. The campaign slogan was 'When a worker suffers, the whole business is affected! Musculoskeletal disorders (MSDs) are everyone's business! Learn how to avoid them' (*'Quand un travailleur souffre, toute l'entreprise est touché! Les troubles musculosquelettiques (TMS) sont l'affaire de tous. Apprenez à les éviter'*). The campaign encompassed a website, brochures and outreach activities. The campaign concluded in 2016.

The 'federal truck' is a truck owned by the federal government that is fully equipped to carry out awareness campaigns addressing different aspects of wellbeing at work. It travels around Belgium and offers the federal government the opportunity to meet citizens. The truck is run by a campaign team providing support for the preparation and implementation of campaigns. The campaign team's support is available to other federal government services free of charge. In 2015-2016, the truck was campaigning on MSDs and it specifically targeted students in secondary education. The aim was to provide information about MSDs and their causes, and how they can be prevented.

- **Belgium: Intervention typology and guidance on preventing musculoskeletal disorders**

The Belgian Federal Public Service Employment, Labour and Social Dialogue (FPS Employment), with the support of the European Social Fund, financed a research study on success factors of and barriers and obstacles to interventions to prevent MSDs and psychosocial risks in Belgian companies (2012). The research study aimed to understand the extent to which companies make use of MSD prevention services. The research also covered the prevention of psychosocial risks in the workplace in its scope. Based on the study results, a guide for prevention of MSDs at work with practical examples of interventions was developed and published.

- **Denmark: The Danish National Job and Body Campaign**

The motivation for this and other similar interventions came from data gathered during the 2000s showing that many people in Denmark had negative beliefs about pain, movement and work. The initiative aimed to raise awareness among public-sector employees about work-related musculoskeletal pain, which is one of the main reasons for work disability and sickness absence in this and other sectors.

The Job and Body Campaign was developed by the Danish Working Environment Authority during the period 2011-2015 in cooperation with researchers from the National Research Centre for the Working Environment. The strategies for the dissemination of the campaign were planned in cooperation with employers' associations and trade union organisations. The campaign used a variety of networking activities, workplace visits and a mass media campaign to improve beliefs about musculoskeletal pain and work among public-sector employees in Denmark, with the ultimate aim of promoting a balance between demands at work, physical activity, the capacity of the body and overall physical wellbeing.

- **Denmark: A strategy for working environment efforts up to 2020 — risk-based inspections**

In 2011, the Danish government (Denmark's Liberal Party and the Conservative People's Party), the Social Democratic Party, the Danish People's Party and the Social Liberal Party agreed on an ambitious strategy for working environment efforts up to 2020. The overall goal of the strategy was to create a good working environment to help improve safety and health at work, and to ensure a long working life for the individual with the least possible absenteeism as a result of health problems. MSDs were one of three areas selected for attention.

As part of this strategy, enterprises were selected for a risk-based inspection using an index model, which contained several indicators to identify those enterprises that had the most serious safety and health issues. Selected companies were subjected to enhanced risk-based inspections in which the general risk-based inspection was extended in order to undertake a thorough and targeted review of the company's ergonomic (covering MSD risks) and psychosocial working environment. The strategy is an integral government strategy, of which social partners have an element of co-ownership through the preparatory discussions and implementation of the initiatives.

- **Denmark: Preventing low back pain in bricklaying work**

Bricklaying is considered to be a high-risk job in the construction sector. Research showed that a high level of low back pain among bricklayers was due to working in very low or high work postures. This initiative aimed to reduce the range of heights at which bricklaying was carried out by reducing the size of scaffold platform heights for bricklaying from 1.5-metre to 1-metre stages. Reducing the height of work in this way (i.e. reducing the height of each stage and therefore limiting the vertical range over which bricklayers work) was considered to enable a major reduction in the amount of time spent working in high or low postures and would help prevent lower back pain and other MSDs. A critical element of this project was that it was conceived, developed and introduced on the basis of an agreement between the social partners, thus helping to ensure its implementation.

- **France: Epidemiological monitoring of work-related health problems: Cohorts Coset-MSA and Coset-Independents**

Coset (Cohortes pour la surveillance épidémiologique en lien avec le travail) is a research programme for monitoring work-related ill health. It is a major national-level research programme that monitors the health of economically active people in France. It monitors developments in the health and career of workers from two social security platforms: *Mutualité Sociale Agricole* (MSA), the insurance scheme for the agricultural sector, and *Régime Social des Indépendants* (RSI), the insurance scheme for self-employed or independent workers. Employees outside these agencies are covered through another epidemiological study called CONSTANCES (which provides a broader perspective, not restricted to workplace health). As the first large-scale and national-level programme for monitoring people's health at work in France, COSET aims to study the whole of the active population, regardless of sector, age or employment status. It also continues to monitor participants' health after retirement to measure long-term health effects. Its objective is to provide a better understanding of the links between occupational exposures and work-related diseases. The programme helps to identify those occupations and working conditions that pose a risk to the health of workers and provides recommendations for the prevention of disease, including MSDs.

- **France: TMS (troubles musculo-squelettiques) Pros and assistance of regional coordinators**

This is a national-level prevention programme that aims to guide businesses in creating a personalised MSD prevention strategy. It aims to reduce the prevalence of work-related MSDs by supporting enterprises in putting in place effective MSD prevention measures. The project started in 2014 and is run by the Health Insurance — Occupational Risks (*Assurance Maladie-Risques Professionnels*) section of the National Health Insurance Fund for Salaried Workers (*Caisse Nationale de l'Assurance Maladie des Travailleurs Salariés*, CNAMTS), with the participation of and support at the local level from 15 regional offices of the pension and health at work insurance funds (*Caisse Assurance Retraite et Santé au travail*, CARSAT) and *Caisse Régionale d'Assurance Maladie* (CRAM) d'Ile de France).

- **Germany: The prevention campaign of German Social Accident Insurance (DGUV) — ‘Think of me — Your back’ (‘Denk an mich — Dein Rücken’)**

This campaign focused on physical loads in the workplace, specifically back load, and targeted schools and companies. It was introduced in January 2013 by the German Social Accident Insurance organisation and ran until 2015. The initiative consisted of awareness raising, training and providing information about MSDs due to physical loads, aiming to reduce back load (both at work and in schools). It also targeted strain on the back from other sources, including a lack of exercise, and psychosocial risks. The campaign sought to raise awareness and create change in workplace practices and in the behaviour of individuals in companies and schools, thereby preventing work-related back injuries.

- **Germany: ‘Prevention makes you strong — including your back’ (‘Prävention macht stark — auch Deinen Rücken’)**

This action plan was launched in 2013 and ran until 2018. It was part of the working programme of the GDA, which is a concerted, long-term initiative by Germany’s Federal Government, federal states (*Länder*) and occupational accident insurance funds to improve OSH in the workplace.

The general goal of the work programme was to reduce work-related musculoskeletal health risks and disorders, focusing mainly on those activities seen as presenting the greatest risk for the development of MSDs, such as lifting and carrying heavy loads, repetitive work and work involving little movement. The strategy to achieve this goal was based on two aspects: improving the prevention culture in enterprises and increasing health literacy on the prevention of MSDs among employees and insured persons.

- **Germany: The Preventive Health Care Act of 2015 (Präventionsgesetz)**

The Preventive Healthcare Act of 2015 (*Präventionsgesetz*) was passed to strengthen health promotion and preventive health care. It promotes the ‘healthy worker’ ideal, in which the focus is on promoting the whole health of workers, rather than simply on the prevention of illness. It aims to strengthen prevention and health promotion for all age groups in various settings, in particular where people live, learn and work, focusing strongly on common risk factors and health inequalities. The act also promoted a strategy that included recommendations and goals relating to health promotion and prevention for different target groups; these will be monitored and reported on every 4 years (the first such report will be published in 2019).

- **Italy: Economic Incentive Programme**

The National Institute for Insurance against Accidents at Work (Istituto nazionale per l’assicurazione contro gli infortuni sul lavoro INAIL) funds preventive action in workplaces through its support for projects aimed at improving safety and health. The scheme ‘Support incentives for enterprises’ (‘Incentivi di Sostegno alle Imprese’ — ISI) provides financial support to enterprises and self-employed persons to improve safety and health at work, including for projects tackling the risks posed by manual handling of loads and projects involving the replacement or adaptation of work equipment to meet the latest standards.

The aim of the ISI scheme is to reduce the incidence of work-related accidents and occupational diseases and to improve safety and health at work by providing financial support to enterprises. The scheme provides non-repayable grants to companies for the implementation of projects on safety and health at work, including projects tackling work-related MSDs.

- **Netherlands: National Social Programme on Working Conditions (MAPA) — Sub-programme on physical workload**

The sub-programme on physical workload forms part of the Social Programme on Working Conditions (*Maatschappelijk programma Arbeidsomstandigheden* — MAPA), a national research and communication programme on working conditions. The aim of the initiative was to assess risks in order to prevent musculoskeletal complaints and to promote sustained healthy, productive work within organisations.

The aims of the sub-programme on physical workload were to enhance the capacities of Dutch OSH professionals and prevention officers in SMEs. To develop, implement and evaluate digital tools for companies to assess physical load and improve the level of physical load at work; to collect and disseminate good practices on improving situations with high physical load, by organising networking sessions and workshops; and to develop knowledge on future aspects of physical load, such as sensory systems and robotics.

Risk assessment tools and a checklist were developed to help companies assess risks of MSDs and identify preventive measures, providing them with user-friendly methods that could be applied without specific prior knowledge or training. The Inspectorate of Social Affairs and Employment also uses these tools as a basis for its enforcement policy to avoid discrepancies.

- **Netherlands: Sustainable Physical Work Network**

This initiative aims to promote safety and health at work through a bottom-up process of sharing knowledge of effective initiatives and measures implemented by organisations and companies. The overall aims are to promote sustainable employability by supporting organisations in reducing and managing physical workload in a responsible manner and to prevent absenteeism.

This campaign consisted of bringing together organisations and companies that had an interest in tackling physically demanding work and that wanted to share their knowledge and experiences about their working methods and approaches. The exchange of knowledge and experiences was based on the 'pay it forward' principle. This means that organisations and companies shared their knowledge and experience with colleagues free of charge, with the baton then passed on to the next organisation.

- **Norway: 3-2-1 Together for a good working environment**

The project '3-2-1 Together for a good working environment – 3 parties, 2 branches, 1 goal' was a collaboration between the Norwegian Labour Inspection Authority (*Arbeidstilsynet*), the Norwegian Labour and Welfare Administration (NAV), employers' and workers' organisations and industry. The project lasted 3 years (2007-2010) and was managed by the Labour Inspection Authority. It focused on improving the working environment, reducing sick leave and increasing the retirement age in two chosen sectors: the meat and poultry industry and nursing homes. In both sectors, MSDs account for the highest proportion of medical problems leading to early retirement and sick leave (with mental illnesses being the next largest category); therefore, these issues were a particular focus for the project. The nursing home sector was of particular concern, as rates of MSDs are higher in women than in men, not only among older workers but also among relatively young workers.

- **Norway: Be prepared! (Føre var!) — Norwegian Labour Inspection Authority project to prevent work-related musculoskeletal disorders**

The aim of this initiative was to help businesses to systematically prevent MSDs in the work environment. It consisted of targeted inspections to assess the measures taken by employers to prevent MSDs and awareness raising of the need for risk assessment and the implementation of appropriate preventive measures. The inspections were performed in the sectors with a high risk of workers developing MSDs and focused on aspects of prevention.

- **Spain: Programme to prevent ergonomic and psychosocial risks in the health and social care sectors**

The programme was developed within the framework of the 'II Plan of occupational health in Navarra 2007-2012'. It aimed to promote and encourage psychosocial risk assessments, especially in combination with exposure to ergonomic risk factors, taking into account the most appropriate method in each case and ensuring the participation of workers and their representatives. It aimed to improve the working conditions of social care workers caring for dependent older people.

The programme was structured in several phases, which included site visits and information, awareness-raising and training sessions, and the development of tools to disseminate the results.

- **Spain: Good practices guidelines for on-foot shellfish workers**

During the period 2006-2010, the Galician Institute of Occupational Safety and Health (*Instituto Gallego de Seguridad y Salud Laboral* — ISSGA) put in place several important measures to address muscle overloads and MSDs, in response to the fact that these accounted for approximately one-third of the total number of accidents in Galicia. In 2010, the ISSGA carried out a statistical analysis of injuries due to overexertion, taking into account the types of activities during which these occur and incorporating a gender perspective and an assessment of long-term impacts.

The ISSGA set up a plan to improve the health and working conditions of on-foot shellfish harvesting workers in Galicia. This was within the framework of other actions carried out by the ISSGA, such as an analysis of work injuries due to overexertion, the publication of educational material (an audio-visual publication on the prevention of MSDs in shellfish harvesting) and a campaign on the prevention of occupational risks related to overexertion in the hospitality and commerce sectors.

Shellfish harvesting involves the extractive activity of gathering shellfish. More than 4,600 people (including some 4,100 women) in the Galicia autonomous community are employed in 'on-foot shellfish harvesting'. The project aimed to analyse the current health situation and risk factors affecting on-foot shellfish harvest workers (including those relating to MSDs) in order to identify the needs of the workers and to develop guidelines for best practices to prevent MSDs.

- **Sweden: Women's work environment**

In 2011, the Swedish Government gave an assignment to the Swedish Work Environment Authority (SWEA — *Arbetsmiljöverket*) on the topic of 'women's work environment' (government decision A2011/2209/ARM). The assignment encompassed a number of projects to build an evidence-based course for action. These projects involved knowledge generation and the dissemination of that knowledge to key players who had the power to change working conditions and the work environment. The assignment was for the period 2011-2014.

In September 2014, SWEA received another assignment to take the lessons learned from the previous assignment and develop these further, in order to increase safety and health in mainly female-dominated sectors (e.g. 'create and make accessible tools for risk assessment with a special focus on women's work environment'). This would benefit not only women but also men working in those sectors.

In 2015, SWEA was given further funding to continue the work and to develop sustainable procedures for including the gender perspective in OSH management. Previously, the focus had been on the work environment in female-dominated activities but, in this new assignment, the scope was widened, responding to the question of where, namely in which sectors, the project would be most effective in obtaining sustainable results.

The initiatives had several mutually reinforcing aims, namely to increase knowledge and awareness about the status of women's occupational health, including their higher risk for developing MSDs, and to develop better methods of highlighting the risks of MSDs in SWEA's inspections. This increased knowledge and awareness is also expected to translate into greater gender sensitivity in workplaces and ultimately into an improved work environment for both men and women.

- **Sweden: Provisions and general recommendations for the prevention of musculoskeletal disorders**

In 2012, SWEA issued provisions and general recommendations on ergonomics for the prevention of MSDs. The provisions apply to every activity in which employees may be subjected to loads and to other working conditions that may have an adverse effect on the musculoskeletal system. They are binding on employers, and failure to adhere to the provisions may result in prosecution and fines (upon inspection by SWEA). The general recommendations are not binding. They serve to inform employers of the appropriate ways of fulfilling the requirements and to provide practical solutions. They relate to employers' obligations to investigate possible health-endangering or unnecessarily fatiguing repetitive work and to take the necessary measures to reduce the risk of MSDs in employees.

- **United Kingdom: 'Helping Great Britain Work Well' strategy and Work Programme on MSDs**

The strategy 'Helping Great Britain Work Well' was launched in 2016 and will be in place for 5 years (until 2021). The strategy defines six priority themes, one of which tackles work-related ill health, ranging from cancer and other long-latency diseases to stress and MSDs. Key elements of this theme have included earlier prevention, which is the most cost-effective strategy, and a greater focus on health issues at work.

Within this strategy, the MSD priority plan was developed and introduced. This plan included a series of 'outcomes and priorities', encompassing improvements in preventing and controlling exposure to MSDs, a shift in emphasis towards risk elimination/reduction through design, an increased regulatory profile, research and development of new thinking on the risks from new, flexible ways of working, and cross-industry learning about 'what works'.

- **USA: NIOSH Musculoskeletal Health Cross-Sector Program**

In 2010, the National Institute for Occupational Safety and Health (NIOSH) put in place a major programme targeting the prevention of work-related MSDs. The NIOSH 'musculoskeletal health cross-sector program' works with a range of partners from industry, labour and academia on an agenda that combines research and prevention to act in various sectors.

The ultimate aim of the programme is to reduce the burden of work-related MSDs through research and by providing support for companies to reduce risks and for practitioners to improve the efficacy of workplace interventions. The specific objectives of the programme are to address risk factors for work-related MSDs through improved assessment methods, develop and evaluate the effectiveness of interventions, use workers' compensation data to better understand risk factors, and disseminate information on effective risk control methods and technologies.

- **Australia: A Participative Hazard and Risk Management (APHIRM) Toolkit for the prevention of Musculoskeletal Disorders**

According to Safe Work Australia (2016), the frequency rates of 'serious claims' for work-related injury declined by 31 % between 2000/01 and 2012/13. However, the proportion of these claims that related to MSDs remained the same — approximately 60 %. Across the same time period, the median time at work lost as a result of serious MSD claims increased by 35 %, from 4.3 to 5.8 working weeks, while the median amount of compensation for serious MSD claims increased by 59 %, from AUD 5,600 in 2000/01 to AUD 8,900 in 2012/13. The overarching aim of the research was to develop more effective evidence-informed risk management procedures to reduce the incidence of work-related MSDs. The APHIRM toolkit was designed for use in medium-sized to large businesses, thereby helping to transfer current knowledge of the effective management of MSD risks into the workplace.

- **Canada: Development of a new prevention guideline for musculoskeletal disorders for Ontario**

Musculoskeletal disorders are the most prevalent type of lost-time work injury reported to the Workplace Safety and Insurance Board in Ontario. MSDs account for 42 % of all work-related injuries, 42 % of all lost-time claim costs and around 50 % of all lost-time days. The MSD Prevention Guideline for Ontario, which included a resource manual and a prevention toolbox, was developed in 2005-2006 under the auspices of the Occupational Health and Safety Council of Ontario, and proved to be an important resource for workplaces. In 2016, a multi-stakeholder initiative led by the Centre of Research Expertise for the Prevention of Musculoskeletal Disorders (CRE-MSD) at the University of Waterloo was launched. The project aimed to develop a new MSD Prevention Guideline for Ontario, with the overall objective of preventing the development of MSDs of non-traumatic origin, which result in major costs for businesses and society as a whole.

5 In-depth country reports

5.1 Introduction

As noted in section 3.4, six specific initiatives (or integrated policy approaches) were selected for in-depth analysis. These were selected because they provided good examples of consistent and sustained thinking.

The detailed reports on each of these individual analyses are published separately and are available through EU-OSHA webpage at the address <https://osha.europa.eu/en/themes/musculoskeletal-disorders>. In each case, the approach adopted in the initiative was explored and assessed to identify themes and challenges that could be used to inform an overall assessment of prevention policies. The issues considered included the probable scope or reach of the initiative and the constraints that might apply in transferring an approach to other countries.

It should not be assumed that an approach that targeted a specific sector or group of sectors (including perhaps presenting sector-specific solutions) would be less effective overall than one that sought to address the prevention of MSDs more generally.

Section 7 presents some of the lessons learned and messages to take forward, taking into account not only the six in-depth studies but also the remainder of the 25 initiatives, namely those not selected for this detailed treatment.

5.2 The six reports summarised

5.2.1 Austria: AUVAsicher support schemes — AUVAsicher and AUVAsicher and other initiatives tackling MSDs

AUVA provides assistance to SMEs through AUVAsicher prevention centres located in each of the nine federal states. Safety experts from these centres visit companies and inform and advise them on safety solutions. The initiative summarised here addressed the prevention of MSDs in SMEs. It was carried out in 2009-2010 within the regular preventive services provided through AUVAsicher, adopting a particular focus on MSDs. Its specific aims were to provide information on MSDs and MSD prevention, increase awareness among employers and employees on MSD prevention and present, discuss and implement measures against MSDs in enterprises.

5.2.2 Belgium: Prevention of MSDs as a priority in the national strategy and campaigning on MSD prevention

Following on from an earlier strategy, the 'Belgian National Strategy for Wellbeing at Work 2016-2020' was introduced. This strategy acknowledges that musculoskeletal problems continue to be the most frequently reported adverse health effects at work. In response to this strategy, FPS Employment launched its campaign on the prevention of MSDs in November 2015. In a concerted campaign, a wide variety of materials were used, some of which were developed specifically for the campaign while others were adopted from previous work. In parallel with this, use was made of the 'federal truck' for a further campaign, namely a truck owned by the federal government that is equipped to carry out awareness campaigns. In 2015-2016, it was used to campaign on MSDs. There has therefore been a sustained approach over almost 20 years, which has provided valuable continuity, with material developed as part of earlier activities being adopted for later campaigns.

5.2.3 France: The TMS Pros programme and other initiatives to tackle MSDs

The policy-level intervention TMS Pros offers businesses support to prevent work-related MSDs. The programme uses an online platform on which employers have a personal workspace where they can follow their progress. Enterprises with fewer than 50 employees can apply for co-financing of 70 % of the costs of training an internal project manager on MSD prevention, and for commissioning an MSD study or action plan tailored to their needs. Once they have developed an action plan with someone qualified in MSD prevention, they can also apply for 50 % co-financing to buy the technical equipment needed to implement the plan. The innovative elements of this initiative include the provision of individual support tailored to the needs of each company and the financial support provided for SMEs. The strong emphasis of this support on prevention through design is one that is widely recognised as being most effective in the long term. Other initiatives to tackle MSDs have been implemented, such as an initiative to improve the epidemiological surveillance of occupational risks in France (the CONSTANCES population-based epidemiological cohort and the COSET programme).

5.2.4 Germany: A systematic approach to preventing MSDs

Germany has adopted national legislation aimed at improving worker health in general (and musculoskeletal health in particular), providing a multifaceted approach. Collectively, these legislative provisions all address (either directly or indirectly) different aspects of MSD prevention. Some are specifically focused on a particular source of MSD risks, while others address wider MSD risks but are still MSD focused. A strong aspect of the policy approach adopted is collaboration at the strategic level between different partners, helping to ensure a degree of consistency and coordination that would not be possible if each organisation worked in isolation on individual initiatives.

5.2.5 Sweden: Women's work environment and MSDs prevention

The national OSH strategy in Sweden can be seen against a background of developments towards what became known as 'mainstreaming'. With mainstreaming pervading all government thinking, gender and work therefore emerged as a theme reflecting this wider perspective.

Against this strategic background and the gender inequality in health problems that has been demonstrated, SWEA was assigned a project on 'women's work environment'. The assignment encompassed a number of projects to build an evidence-based course for action involving knowledge generation and the dissemination of that knowledge to key players, including labour inspectors. The assignment's aims included increasing knowledge and awareness about the status of women's occupational health (including their higher risk for developing MSDs) and developing better methods of highlighting the risks of MSDs. This increased knowledge and awareness was expected to lead to greater gender sensitivity in workplaces and an improved working environment for both men and women.

5.2.6 United Kingdom: the 'Helping Great Britain work well' strategy and tackling MSDs

The policy approach adopted in the UK is focused on enabling and informing, encouraging employers to take action and to address risks, rather than taking the more prescriptive approach adopted in many other EU countries. This is reflected in a series of policy initiatives and actions dating back over more than 20 years, of which the present strategy is the latest. The current policy approach is complex, with the overall strategy being 'Helping Great Britain Work Well'. A major element of this strategy is the three health priority plans, of which MSD prevention is one. MSDs are thus being addressed not just through specific activities under the MSD priority plan but also within other activities undertaken as part of the broader approach embodied in the health and work programme and in the sector-specific plans also developed as part of the 'Helping Great Britain work well' strategy. This integrative approach recognises the importance of not 'compartmentalising' MSD risks into a single focus.

6 EU background

6.1 EU legislative framework and policy

National legislative provisions and policies concerned with the prevention of MSDs are strongly influenced by the common legislative framework established by relevant EU OSH directives. This framework is based on the Framework Directive (Directive 89/391/EEC on the introduction of measures to encourage improvements in the safety and health of workers at work). This framework establishes the basis for OSH legislation and, importantly, encompasses general duties in respect to risks to safety and health in the workplace. These general duties place requirements on employers that are particularly important for hazards and outcomes for which no specific legislation exists.

The basis for national legislation on specific issues is laid down through a series of individual directives. There are 23 individual directives, each addressing different aspects of workplace risk. Among these, two are specifically directed towards established MSD risk areas, namely the Manual Handling Directive (Directive 90/269/EC on the minimum health and safety requirements for the manual handling of loads where there is a risk particularly of back injury to workers) and the Display Screen Equipment (DSE) Directive (Directive 90/270/EEC on the minimum safety and health requirements for work with display screen equipment). Two further directives also have a significant focus on MSD risks. The Vibration Directive (Directive 2002/44/EC on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (vibration)) addresses the specific risks arising from vibration exposure including, in the case of whole body vibration, lower back pain. Finally, a further directive, the Work Equipment Directive (Directive 2009/104/EC concerning the minimum safety and health requirements for the use of work equipment by workers at work) also contains relevant provisions (Article 7, 'Ergonomics and occupational health'), although this article is less explicitly directed towards MSD risks than the other directives. This series of directives can be seen as demonstrating the level of EU political commitment to addressing MSDs in the workplace.

A 2007 consultation document (Consultation of the social partners on work-related musculoskeletal disorders) noted that this existing legislative framework did not adequately cover all work situations or ergonomic risk factors, such as repetitive tasks, awkward/static postures, force or contact stress. It suggested that a new directive on MSDs be considered that integrates the provisions of the Manual Handling and DSE Directives and covers these other recognised risks. In doing so it would provide a simplified and more streamlined framework for MSD risk assessment and prevention.

This consultation process did not achieve a consensus and further activity was suspended pending the outcome of a review of all EU OSH directives.

In the meantime, however, this view was reinforced by a report on the EU Strategic Framework on Health and Safety at Work 2014-2020, prepared by the EU Parliament Committee on Employment and Social Affairs (2015)⁹ and subsequently adopted by the European Parliament (2017)¹⁰. This report and subsequent resolution:

Calls on the Commission to take action on one of the most prevalent work-related health problems in Europe and submit without delay a proposal for a comprehensive legal instrument on musculoskeletal disorders (MSDs) to improve effective prevention and address the causes of MSDs.

Following an extensive study reviewing and evaluating the implementation of all 24 OSH directives¹¹, it was concluded that all of the provisions of these directives had been implemented into national legislation in each of the EU Member States, indicating that the political commitment at the EU level to addressing MSD risks was also reflected in the individual Member States.

⁹ EU Parliament Committee on Employment and Social Affairs (2015) Report on the EU Strategic Framework on Health and Safety at Work 2014-2020 (2015/2107(INI)).

¹⁰ European Parliament (2017) European Parliament resolution of 25 November 2015 on the EU Strategic Framework on Health and Safety at Work 2014-2020 (2015/2107(INI)) (2017/C 366/09).

¹¹ DG Employment, Social Affairs and Inclusion (2017) Evaluation of the Practical Implementation of the EU Occupational Safety and Health (OSH) Directives in EU Member States: Main Report, available at: <https://ec.europa.eu/social/main.jsp?catId=148&langId=en&moreDocuments=yes>

However, the same report identified shortcomings in this legislative provision:

One of the criticisms of the Manual Handling Directive from some stakeholders is that it does not adequately address all MSD risks. This is perhaps not surprising given that its subject (scope) is to lay down safety and health requirements for the manual handling of loads. It is clear from any examination of the wealth of published scientific literature that many risks of MSDs do not arise from the manual handling of loads (or from the use of DSE).

The report specifically on the Manual Handling Directive, which was prepared as part of the same evaluation¹², discussed at some length the reasons for the apparent ineffectiveness of the legislation in reducing MSDs. Although not all Commission papers were made available to the evaluation team, the report noted that there had been extensive discussions within the EU on how best to address those MSD hazards not covered by existing specific individual directives. These discussions had included the replacement of the Manual Handling and DSE Directives with a directive with a broader scope (as discussed by the EU Advisory Committee on Safety and Health at Work and advocated in the consultation document referred to earlier).

As regards the DSE Directive, the main report (i.e. on all 24 directives) noted strong concerns that aspects of this directive were 'very dated' and likely to become more so with technological developments.

The Commission Staff working document (the Commission's Regulatory Fitness (REFIT) evaluation)¹³ that was prepared following the evaluation report cited earlier noted that:

The causes of work-related MSDs are multifactorial and the existing OSH Directives (Manual Handling of Loads, DSE and Vibration) do not address specifically all the potential risk factors, nor do they address all the work activities where such risk factors can occur. In this context, the suggestions expressed in many NIRs [National Implementation Reports] to explore ways to better address these risks and the recommendations of the evaluation study should be given further consideration.

Therefore, it can be seen that, although there is a common minimum legislative framework addressing MSD risks across the EU Member States, that framework has been widely recognised as inadequate. Nevertheless, with a few exceptions (referred to within this document), national legislation adheres to that framework.

6.2 EU OSH strategies

EU OSH strategies provide a common background to the national initiatives, including those for 2002-2006¹⁴, 2007-2012¹⁵ and 2014-2020¹⁶ that encompass the 10-year time frame for the selected initiatives and the preceding years.

In its introduction, the Communication on the 2002-2006 strategy recognised the need for a particular emphasis on MSDs called for by the European Parliament. It further assigned priority to MSDs (enhanced prevention of occupational illnesses) and acknowledged a need to investigate concerns regarding the problems, inconsistencies and gaps arising from the existing Community legislation:

¹² DG Employment, Social Affairs and Inclusion (2015) Evaluation of the Practical Implementation of the EU Occupational Safety and Health (OSH) Directives in EU Member States — Report by Directive: Directive 90/269/EC on the minimum health and safety requirements for the manual handling of loads where there is a risk particularly of back injury to workers.

¹³ DG Employment, Social Affairs and Inclusion, European Commission (2017) Commission Staff working document: Ex-post evaluation of the European Union occupational safety and health Directives (REFIT evaluation) (SWD(2017) 10 Final).

¹⁴ Commission of the European Communities (2002) Communication from the Commission: Adapting to change in work and society: a new Community strategy on health and safety at work 2002–2006 (COM(2002) 118 final).

¹⁵ Commission of the European Communities (2007) Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Improving quality and productivity at work: Community strategy 2007-2012 on health and safety at work (COM(2007) 62 final).

¹⁶ European Commission (2014) Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on an EU Strategic Framework on Health and Safety at Work 2014-2020 (COM(2014) 332 final).

... it will submit a communication on musculoskeletal complaints, which will look into the causes of these problems in the light of preventive measures provided for in existing Community legislation (i.e. the directives dealing with heavy loads, computer screen work and vibration), and will propose amendments or new legal provisions in fields in which coverage is still incomplete (e.g. workplace ergonomics).

Recognising that certain types of occupational illnesses, including MSDs, were becoming more common, the 2007-2012 strategy explicitly included MSDs among its research priorities. In addition, within a clause on encouraging the development and implementation of national strategies, it also included a number of additional strands that the initiatives undertaken in the six countries selected for in-depth analysis focus on directly, including:

- encouraging the application of reliable ergonomic principles more effectively to the way in which workplaces are designed and work is organised;
- taking steps to exploit synergies between different policy areas such as public health;
- developing a risk prevention culture at all levels of education;
- encouraging workers to adopt lifestyles that improve their general state of health.

Although it did not explicitly mention MSDs, the 2014-2020 strategy included a lot of material relevant to MSD prevention, including, in particular, recognition of the need for practical support for small and micro companies (which, again, is a feature of a number of the national initiatives explored in this report).

More recently, the Commission report on the modernisation of the EU OSH legislation and policy¹⁷ flagged a need to support micro enterprises and SMEs in complying with OSH rules, as it recognised the lower level of compliance in these groups compared with larger businesses. On MSDs, the Commission recognises that exposure to ergonomics risk factors represents one of the major OSH problems in the EU, with repeated exposure resulting in work-related MSDs. In that report, the Commission aimed to clarify:

“employers’ obligation to ensure protection from this type of risks and to take them into account in the risk assessment process, as well as by assisting employers in complying with their obligations”.

To achieve this, it aims to work with EU-OSHA and the Advisory Committee on Safety and Health at Work to the European Commission on the identification of good practice for promotion and dissemination.

These strategies and actions serve to provide a strong background at the EU level for national action.

6.3 Centralised EU initiatives to address MSDs

In addition to the national initiatives explored as part of this report, EU-level initiatives also contribute to the overall effort in Member States to reduce MSD risks in the workplace.

Those conducted by two EU-level organisations are briefly summarised below. Activities including campaigns and the publication of materials (including evidence, guidance and toolkits) are frequently adopted in Member States, providing further material and support for national activities.

6.3.1 EU-OSHA initiatives

EU-OSHA has the outlined a mission to:

... develop, gather and provide reliable and relevant information, analysis and tools to advance knowledge, raise awareness and exchange OSH information and good practice which will serve the needs of those involved in OSH¹⁸.

¹⁷ European Commission (2017) Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the committee of the regions: Safer and Healthier Work for All — Modernisation of the EU Occupational Safety and Health Legislation and Policy (COM(2017) 12 final).

¹⁸ <https://osha.europa.eu/en/about-eu-osha/what-we-do/mission-and-vision>

As part of that mission, it has carried out a series of campaigns aimed at improving workplaces and reducing risks to safety and health. Two of EU-OSHA's previous campaigns have focused on MSDs, including its very first campaign in 2000. Under the strapline 'Turn your back on musculoskeletal disorders', this first campaign had a specific focus on the effective management of the risks of MSDs.

A second campaign ('Lighten the load', 2007) sought to encourage an integrated management approach to this problem, emphasising the idea that stakeholders should work together to tackle MSDs. As well as continuing to provide support materials relating to risk reduction, this second campaign emphasised the importance of managing the retention, rehabilitation and return to work of those who suffer, or have suffered, from MSDs.

Both campaigns sought to support stakeholders in all Member States through the preparation and distribution of campaign material utilising a wide variety of media and approaches. A new campaign on MSDs will run from 2020 to 2022.

6.3.2 Senior Labour Inspectors' Committee (SLIC) initiatives

The Senior Labour Inspectors' Committee (SLIC) of the EU (comprising representatives of the national labour inspectorates of each Member State) also runs campaigns on selected workplace safety and health issues. A previous campaign (2008-2009) addressed MSDs and ergonomic risks related to the manual handling of loads and, in 2020-2022 (to coincide with the next planned EU-OSHA campaign on MSDs), a further campaign will address the topic of the prevention of work-related MSDs under the theme 'Better enforcing requirements aiming to prevent exposures to risk factors causing musculoskeletal disorders (MSDs)'. It is expected that the new campaign will contribute to awareness raising, knowledge sharing and the exchange of information, practices and experiences, with the ultimate purpose of contributing to enhancing enforcement and activities by labour inspectors in the area of MSDs.

7 Analysis: pulling it all together – what policy actions have the potential to help in the planning and execution of interventions for the prevention of MSDs?

7.1 Introduction

7.1.1 The source material

As noted above, the starting point for the identification of national initiatives was the responses provided to EU-OSHA by its team of FOPs, namely people working in each of the EU Member States on behalf of EU-OSHA and providing a channel for national liaison on OSH issues. These responses were submitted by the FOPs in reply to a consultation questionnaire on policies and practices in the area of MSDs.

The responses were received from 27 countries (see Table 1), with the number of initiatives reported ranging from 0 to 10 (the maximum requested). Two countries (Bulgaria and Croatia) provided nil returns, three countries reported only one initiative (Czechia, Hungary and Slovakia) and one country reported only two initiatives (Romania). In instances when only one initiative was reported, this usually comprised a strategy or policy document reflecting the current EU OSH strategy (2014-2020) rather than any specific form of MSD-related intervention. In other cases, countries listed only general OSH initiatives with no explanation for their inclusion.

Although not always possible to determine from the limited details provided, it appeared, in some instances, that the intervention described did not form part of a coherent programme, but instead appeared to be an isolated initiative with little or no indication of any form of continuity or long-term planning. Therefore, even when a number of initiatives were reported, these were often presented as one-off separate initiatives by different actors. There were often no indications of any coordination of the separate initiatives and no apparent continuity between related initiatives.

Although all Member States have demonstrated a political commitment to addressing MSDs through the implementation of national legislation equivalent to the EU directives, it appears that MSDs have not necessarily been given a high priority at the national level. The reasons behind this are beyond the scope of this review. Against the background of the acknowledged relative importance of MSDs in relation to the health of workers and, through this, the social and financial costs they create, it is salient to note that the FOPs from 6 of the 28 participating Member States had no specific policy-level MSD prevention activities to report and three others reported only legislation, a policy document or a strategy document. A further Member State reported only guidance material relating to the two main EU directives, with no specific strategic action to reinforce this. Therefore, more than one-third of Member States had apparently not considered MSDs to be a sufficiently high priority for meaningful preventive action.

Of the remaining Member States, several demonstrated a rather narrow approach (e.g. relying solely on inspections by labour inspectors), displayed little indication of the translation of legislation and policies into concrete action or appeared to indicate a somewhat narrow focus on a limited number of sectors. Ultimately, although not always easy to judge on the limited information available, perhaps half of the Member States seemed to demonstrate a reasonably comprehensive strategic approach to the prevention of MSDs.

At the highest level, new legislation was introduced to strengthen the national legal framework and fill the perceived 'gaps' in the legislative cover (e.g. in respect of psychosocial risks — sometimes (but not always) including their contributory role in causing MSDs). Campaigns or programmes of action were also an approach common to a number of countries, although the nature of the initiative and its target audience varied between countries. Often, such campaigns involved a number of different features, perhaps combining the preparation and distribution of information and guidance with a targeted campaign of inspections. Inspections and advisory visits were also an approach adopted among those initiatives favouring a more direct style and were a feature of a number of the initiatives examined. Although naturally more labour intensive, these offered the opportunity for direct impact as opposed to the encouragement or exhortation associated with information or awareness campaigns.

The players (those involved in carrying out the initiatives) also varied considerably, with evidence of multi-team working in some initiatives. For example, ergonomics experts were involved in the development of information or advisory material (perhaps including ideas for risk reduction and serving to generate a greater level of awareness) and that material then served as the background for campaigns run by others. Although some players were consistently involved across countries (e.g. the involvement of governments, employers and trades unions), others reflected a specific national element. An example is the involvement of insurers in countries where they are firmly embedded in the advice and enforcement culture. As would be expected, professional players such as safety engineers or ergonomists also made an important contribution, both directly (e.g. in the development of the materials referred to earlier) and indirectly, such as in forming what might be regarded as 'intervention teams'.

Conventional printed material was very common among the material developed and there is some evidence that many employers prefer this 'traditional' approach. However, more innovative techniques were also apparent, often involving an online presence in some form. Innovations in the approach were also apparent in some awareness initiatives, in which attempts were made to raise awareness in groups other than the usual audience of workers, such as in schoolchildren. Awareness raising took many forms, from raising awareness generally of MSDs and their impact, through programmes aimed at raising awareness of risk assessment, to programmes directly addressing risk reduction. Taking this to the highest level, some initiatives not only advised employers on workplace improvements that could be made, but also provided financial support to enable those improvements to be introduced.

As noted earlier, some high-level approaches included the introduction of new legislation, sometimes to fill gaps, but, on other occasions, to strengthen and clarify the roles and responsibilities of employers (perhaps creating a somewhat more prescriptive framework). Although the risks of MSDs and their prevention have come under a lot of investigative scrutiny, there has been a recognition (in some countries at least) that the causes are not fully understood and, among the initiatives selected, there was at least one research programme designed to adopt a longer term perspective aimed at enhancing the evidence base for the factors causing and contributing to MSDs in the workplace.

Finally, although MSDs are a problem generally across all sectors, there is a recognition that some sectors present more problems than others, usually when the work is less easily controlled and in workplaces in which it is harder to remove or reduce MSD risks in their design. This recognition was also a feature of some initiatives that directed their efforts towards such sectors, although others maintained a more general perspective.

Bearing in mind that the 25 initiatives explored as part of this work were only a fraction of all those initially reported by the national FOPs, they demonstrate the wealth of ideas and approaches brought to bear to serve the common purpose of the prevention of MSDs in the workplace. However, one disappointing aspect was that, in general, there appeared to be little evidence of any formal evaluation of these initiatives in terms of their effectiveness in achieving that aim and preventing MSDs (or reducing their impact). Assessments, where available, were generally limited to some form of documentation of any immediate impact (e.g. the 'reach' of advertising campaigns or the numbers of establishments visited), although, in some instances, tangible improvements to workplaces were apparent that, as assumed by stakeholders (rightly or wrongly), did achieve a meaningful reduction in MSD risk.

The methodology (section 3) describes the process whereby the 142 initiatives were systematically reduced to 25 and then to six countries for in-depth study. The approaches adopted in these six countries differed considerably, with the approach in Germany illustrating the use of legislative measures to encourage a holistic approach, while that in Sweden reflected a very different way of thinking, mainstreaming gender awareness into safety and health thinking. France and Austria both adopted direct support schemes. Although the two schemes adopted very different models, they both prioritised the needs of SMEs.

The initiative adopted for Belgium predominantly sought to inform and raise awareness. However, it reflected a broader target, as it was aimed at not just those in work but also schoolchildren and students, who will form the workforce of the future, thereby taking the message away from being 'just' about work. Finally, although different again, the initiative described for the UK also sought to broaden the message, encouraging all players not to think of 'work health' problems but to again take a more holistic approach (as advocated in Germany), merging thoughts and actions of both public and occupational health.

All six cases appear to demonstrate an important depth of strategic thinking and continuity, factors that are important in providing a sustained approach in encouraging all stakeholders to play their part in reducing the risk of MSDs in the workplace.

7.1.2 The EU context

Section 6 presented the EU background to the issue of the prevention of MSDs, encompassing the legislative provisions, EU strategies and initiatives of two EU organisations (EU-OSHA and SLIC), both of which undertook initiatives focused on MSDs. As also noted earlier, all EU Member States have implemented the provisions of the relevant EU OSH directives into their national legislation and this legislation often featured in the initiatives reported. However, this was typically restricted to the two main directives of the highest (and perhaps most obvious) relevance, the Manual Handling and DSE Directives. In some cases, the initiatives listed were limited to the national legislation incorporating the EU directive provisions or to guidance material focused specifically on the provisions of that legislation.

Initiatives by national inspectorates featured strongly among those listed, with specific inspection campaigns on either MSDs in general or manual handling in particular. General initiatives were almost exclusively directed towards industrial sectors, although those with a manual handling focus sometimes encompassed service sector industries such as care working. Office-based initiatives were much less apparent (despite evidence that the incidence of MSDs is still high in such areas). However, there were few indications that such actions were prompted by (or stemmed from) SLIC actions. This could be because the terms of reference for reporting initiatives were from 2010 onwards and so the relevant period did not coincide with the focused SLIC actions.

The same comment applies to EU-OSHA actions. The previous EU-wide actions took place in 2000 and 2007 and therefore fell outside the stated timescale. However, some countries reported initiatives referring to actions based on online interactive risk assessment (OiRA), although, as the focus of such actions tends to be more general OSH risk assessment rather than MSDs specifically, they were not strictly relevant and it is possible that other countries did not report them for that reason.

7.1.3 National policies relating to MSDs

All Member States have incorporated the provisions of the relevant EU OSH directives in their national policies. However, as reported in the evaluation of the impact of those directives¹⁹, few have included additional requirements. When they did, these usually related to the scope or extent of application of the provisions (e.g. in defining those workers covered by the provisions) rather than supplementing the provisions themselves. This legislative background provides the basis for many national policies and approaches that focus primarily on the implementation of those provisions (e.g. carrying out risk assessments) with the implicit assumption that this will reduce the incidence of MSDs.

Other than the implementation of the provisions of the EU directives, few Member States have adopted other legislative provisions of relevance, although there are some notable exceptions. Sweden has additional legislation that extends the scope of the MSD risks that have to be addressed, and Germany has made legislative provisions in relation to other services of relevance. One notable issue is the role of psychosocial risks in the causation of MSDs. There is growing recognition of the role of psychosocial risks in the workplace in relation to mental health and wellbeing, and several Member States have adopted legislation to address these (at least in relation to specific risks such as bullying and harassment). However, there is a tendency for such risks to become 'compartmentalised' and to be regarded (and addressed) separately from MSD risks. With the exception of Sweden, no country appears to have recognised the relationship between psychosocial risks and MSDs in their legislative provisions.

The form and content of relevant legal provisions vary between Member States and reflect national cultural and systemic differences. Taking the requirement to enlist the services of 'competent external services or persons' as an example, Spanish enterprises that are considered to be 'at risk' have to set up an internal service that covers at least two disciplines (drawn from occupational medicine, occupational safety, occupational hygiene, ergonomics and psychology). In Austria, all enterprises with more than 50 workers must adopt a prevention service. A third (and less prescriptive) approach is taken in the UK where the form of the prevention services is left to the discretion of employers.

Although the core legislative provisions are the same, these national or cultural differences carry through to policies and strategic approaches (and to some of the initiatives reported). One example of this can be seen in cultural differences in the role of social dialogue, whereby, although the 'right' for such dialogue is enshrined in national law in all Member States, this is often approached in a relatively confrontational manner in some countries. This conflict is in strong contrast with other countries that have a long history and culture of such collaboration, such as Denmark and Sweden.

However, although individual details might vary, a similar core framework can be identified, starting with the legislative provisions and the fundamental core policy of improving the health of the workforce and preventing work-related ill health and injury. Indications are emerging from some countries of the adoption of what can be described as a 'whole health' or 'whole life' approach, whereby the health of the worker at work is recognised as inextricably linked to the health of that individual away from work. National policies and strategies reflecting this are beginning to be formulated, with initiatives to adopt healthy lifestyles being implemented alongside more traditionally focused workplace risk reduction.

The national approaches and initiatives listed by the FOPs, and explored in more detail in some countries as part of this project, can be seen as part of an overall spectrum of action. Taking legislation as the starting point, measures to enforce that legislation (through national inspectorates) play a key role, supplemented by actions aimed at raising awareness of legal obligations and providing information and education vehicles for doing so. Economic incentives and other forms of support, such as assistance in identifying risks, or suitable risk prevention measures serve to encourage compliance further. In parallel, information and education for workers also feature strongly, with countries recognising that workers' involvement, cooperation and commitment are essential for any successful action.

There are indications from this study that some countries, at least, have policies in place (and initiatives reflecting those policies) that reflect this spectrum, although it is not always clear to what extent these

¹⁹ DG Employment, Social Affairs and Inclusion (2017) Evaluation of the Practical Implementation of the EU Occupational Safety and Health (OSH) Directives in EU Member States: Main Report, available at: <https://ec.europa.eu/social/main.jsp?catId=148&langId=en&moreDocuments=yes>

are formulated as a coherent strategy. Others, possibly reflecting those countries in which OSH systems are less mature, have only elements of such a spectrum in place.

7.2 Policy actions and drivers for the planning and execution of interventions for the prevention of MSDs

Drawing on the themes from the six in-depth country studies and their initiatives, a series of key messages were identified that were seen as critical for MSD prevention policies and policy-level interventions. It was considered that attention to these messages (summarised below) would help to maximise the successful outcome of future MSD interventions.

Knowledge gleaned from a variety of sources, including the analyses that were undertaken in formulating the in-depth reports, as well as interviews and focus groups, has been drawn together to formulate these messages. In some cases, project investigations were supplemented by material from the published literature and enhanced by the knowledge and practical experience of members of the project team. In many instances, the actions described here, together with the messages that follow, are not unique to the project. However, it is important to recognise that, in all cases, existing messages have been supported and reinforced by project investigations.

7.2.1 Prioritisation and resourcing

It is recognised that the complexity of MSDs means that they cannot be easily addressed by one actor within the OSH infrastructure acting in isolation. Successful intervention policies and strategies need to come from the top, with effective actions and support from the government down. At the EU level, the European Pillar of Social Rights includes provisions addressing OSH: 'Workers have the right to a high level of protection of their health and safety at work' (principle 10a). This demonstrates a high level of political commitment to this issue. However, workplace safety and health has to compete with many other issues (some of which might be seen as conflicting), meaning that it perhaps does not always attain the necessary level of political priority. Given the financial and social drain on resources generated by MSDs, attention to their prevention arguably needs to be moved higher up the political agenda and assigned a greater priority.

One theme to emerge from a number of the focus groups and interviews was the need for an effective legislative framework. Although all EU Member States have implemented the provisions of the two main OSH directives relating to MSD prevention (the Manual Handling and DSE Directives), several commentators have suggested that these are inadequate, both in their coverage and, to some extent, in their approach. On their coverage, they are seen as inadequate because they do not provide a legislative framework that covers all MSD risks. In relation to the approach adopted, some existing material (within the DSE Directive in particular) is widely recognised as outdated. Findings from this study reinforce those from earlier studies (such as the *ex post* evaluation of the 24 EU OSH directives and the subsequent REFIT report from the Commission) for a need for change and improvement to this legislative framework.

Legislative requirements are seen as powerful drivers in many countries and so improvements to the legislative framework are likely to support their value going forwards. This has been recognised in Sweden, where wider national legislation has been adopted to expand the scope of the MSD risks addressed. Other countries such as Germany have also adopted strategic legislative provisions to support and reinforce MSD risk-reduction actions. It is understood from the focus groups that the Belgian legislature had been looking into developing more comprehensive legislation on MSD risks, but that such action was halted when similar discussions at the EU level were shelved. These EU-level developments were placed 'on hold' pending the reviews/evaluations of the directives that have now taken place. Hopefully, the findings from the current project will provide additional support for the argument that such debates should be re-opened.

Other countries such as the UK, where a culture of guidance rather than prescription prevails, have chosen to rely on extending their available guidance approach to encompass a wider range of risks. However, it seems that many Member States look to the EU to provide the initiative in respect of legislative change.

Increasing awareness of the potential role of psychosocial factors in causing MSDs has resulted in suggestions that these should be better reflected in legislative provisions and in national policies arising from these. This is distinct from the implementation of legislation addressing the direct consequences of psychosocial risks on mental health and wellbeing, with an increasing number of EU countries enacting such legislation and policies. For example, experience in the UK suggests that, while an increasing number of employers are carrying out MSD-related risk assessments and assessments of psychosocial risks, the two areas of risk are generally regarded as separate issues and the inter-relationships are not yet widely recognised. Similarly, relatively recent legislation in Belgium and Austria addresses the potential for psychosocial factors to cause psychological harm but does not reflect the cross-link to MSDs.

However, legislation is likely to be effective only when there is adequate enforcement and, even when legislation is changed, it is clear that there has to be the commitment and resources made available to support that change. Commitment therefore extends beyond the legislative change to ensure that resources are made available to reflect that commitment. As noted above, over a third of MSs do not appear to have accorded MSDs a high enough priority to warrant concerted systematic action.

It is difficult therefore to 'blame' the ongoing high incidence of MSDs on the insufficiencies of the legislation when there are doubts over the extent to which existing legislation is being implemented, or reinforced through focused sustained action.

7.2.2 Taking a sustained strategic approach

It is widely acknowledged that MSDs are a persistent problem and, in some instances, appear to have been unaffected by previous efforts to reduce their incidence that have taken place over many years. It must be acknowledged that national authorities face multiple demands with limited resources (e.g. with issues such as dangerous substances and psychosocial risks currently high on many agendas). However, it appears (as noted above) that, in some countries, MSDs have not been allocated the sustained attention or priority they require, given the relative scale of their financial and social impact. In addition to those Member States that have taken little or no action, indications from some others suggest only limited commitment, with isolated interventions being applied, apparently without a clear underlying focused strategy (although all do have a general OSH strategy in place). In contrast, however, others have adopted a sustained approach with repeated cycles of initiatives and a clear recognition of the importance of MSDs and their prevention within consecutive national OSH strategies.

7.2.3 Strategic policies to raise awareness

While many experts and others acknowledge the value of inspection campaigns, such campaigns often have a limited focus. Understandably, given the restricted resources available, they commonly adopt a specific focus, for example by prioritising recognised high-risk sectors for action. This approach is thoroughly understandable, as it can be seen as maximising the benefit to be derived from limited resources. Following the same reasoning, some countries also tend to prioritise larger employers, on the basis that more workers benefit from their actions. Inevitably, however, such approaches reinforce the view expressed earlier for a tendency among many employers (especially in smaller companies) to regard an inspection as unlikely.

Although concentrating on those sectors in which the risk of MSDs is highest is understandable, it should be recognised that MSDs are a significant problem across all sectors. For example, a number of studies have shown that there is little difference in the incidence of MSDs between 'white collar' office workers and many ('blue collar') industrial sectors (although the impact of MSDs in terms of preventing a worker from being able to work might be greater in the latter). For this reason, adopting a wide focus is essential. Campaigns aimed at raising awareness generally, often accompanied by extensive advisory material on identifying and reducing MSD risks, will therefore tend to have a wider reach than those aimed at a particular sector. Somewhat paradoxically, however, experience has shown such material to be of most value when it is contextualised, namely when risks and solutions are presented within a sectorial (or possibly sub-sector) framework. Although the underlying messages regarding the risks remain the same, strategies that seek to tailor those messages to different sectors, contextualising them to different types of work, will make them more accessible and relevant to employers (and workers) in each sector. As such, they are more likely to be successful in informing, guiding and raising awareness. This is even

more so the case in respect of risk-reduction solutions, as employers need to appreciate that a proposed solution will be practicable for 'their' type of work.

7.2.4 Support and incentives

Although raising awareness is vital, some evidence suggests that it is often not sufficient to motivate employers to take action. There is evidence and expert opinion to suggest that employers, especially those in SMEs, lack the necessary resources (including finances, time and knowledge) to take action. A number of strategic initiatives have recognised this problem and sought to address it in a number of ways. This has included providing expertise in assessing risks and support in identifying solutions and, in some cases, financial support towards the implementation of those solutions. It is commendable that the approach usually adopted is one of working positively with employers (and, importantly, workers), helping them to develop the necessary skills and knowledge in-house rather than 'imposing' solutions. Such strategies will help to provide solutions that are both viable and acceptable to all parties, and will provide greater continuity. It is interesting to note that, despite a number of initiatives in recent years promoting the cost-effectiveness of such actions, both at the EU level and nationally, a clear message identified during the present study was that employers tend to regard design solutions as too disruptive and expensive to implement and fail to recognise the longer term benefits of such actions.

Negative incentives such as penalising employers for failing to take action have been used and these remain a potential 'weapon'. They might indeed be deemed to be valuable, or even necessary, at times. However, they are unlikely to be conducive to the development of a positive collaborative partnership and might encourage employers to tend to deny fault and therefore might counter-productively serve as a barrier to change. Evidence from return visits carried out as part of some of the inspection campaigns, in which a sizable proportion of the companies visited had not taken the recommended action, suggest that, in some countries at least, negative incentives might not have the persuasive power anticipated. On balance, it seems that working positively to change perceptions, attitudes and behaviour is more likely to have a beneficial impact in the longer term than negative incentives.

7.2.5 Collaboration between social partners and other stakeholders

Tangible support can take many forms, and learning and acquiring knowledge from peer groups can often be a valuable source of such support. A number of the initiatives explored involved, at least in part, the provision of collaborative support and guidance from other stakeholders, especially industry groups. There are numerous examples of national groups working to share knowledge and provide support for MSD prevention initiatives. This is particularly apparent in sectors such as construction and health care, in which MSDs are recognised as a major concern. Such strategies dovetail with the need (referred to earlier) to tailor messages to suit the industry. In some countries, harnessing the OSH knowledge and resources of larger companies to support smaller companies in the same sector provides a strong example of collaboration and cooperation, allowing the knowledge (and expertise) acquired by one (usually larger) employer to be cascaded down.

The 'Sustainable Physical Network' initiative in the Netherlands provides a good example of this. Stakeholder groups can play a significant role in fostering the communication of such ideas, helping smaller businesses in particular to benefit from the actions of others and, importantly, for their employees to share those benefits in terms of improved musculoskeletal health.

The construction sector, with its relatively large proportion of small businesses and, in some countries at least, a long tradition of the use of contractors and sub-contractors, is one in which such approaches have considerable potential (and in which a number such partnerships already exist). There are isolated examples of some major construction projects in which collaboration and coordination of safety and health efforts have been made a contractual requirement. For example, the 2012 Olympics site in London made this a requirement for all companies working on the project. Smaller companies working as sub-contractors reportedly adopted the lessons learned in moving on to other work, thus extending the benefit beyond the immediate 'reach' of the site itself. Although not essential, there are obvious benefits of such collaboration taking place within a sector, as issues such as applicability and viability are more easily addressed.

The benefits of such collaborative working can be seen particularly in those countries that have a culture of support and collaboration, rather than antagonism and opposition, enabling all stakeholders to

develop systems and strategies together that build on that collaboration to the common good. The Norwegian '3-2-1 Together for a good working environment' initiative provides a specific example, as does the initiative on bricklaying undertaken in Denmark.

At a higher strategic level, the systematic collaboration enshrined within the German approach²⁰ provides for cooperation and communication between partners through the National Occupational Safety Conference and the ongoing GDA that it determines.

Although the widest impact is likely to be felt through strategic-level initiatives, perhaps involving stakeholders in a particular sector, initiatives at the workplace level are also likely to be impactful, as it the workplace where the benefits of collaboration in MSD prevention become a reality.

7.2.6 Providers of help and support

There were very many providers of help and support identified across the range of interventions, namely government agencies (including inspectorates), insurance providers, occupational health providers and many others. One key beneficial factor identified was the availability of such support locally. In several instances, the local nature of support, from whatever source, was acknowledged as a strength of the campaign being investigated (as well as the expertise and experience of those providing that support). However, national projects can make considerable demands on available resources, and the training of providers to ensure that they are able to provide appropriate support and guidance can be seen as essential. A number of interventions included relevant training to ensure a suitable standard of awareness among providers. For example, in Sweden, gender awareness training of inspectors was included as part of their ongoing (and extended) series of strategic projects on this issue. In some instances in other countries, however, when appropriate training had not been undertaken, comments were made that the standard of advice and guidance provided could be uneven.

A number of countries, including Belgium and France, have recognised the benefits of using multi-skilled teams in supporting MSD prevention initiatives. This has enabled the development of strategic networks that can provide the necessary expertise to employers. Again, such an approach will require funding and, in the examples mentioned, compensation and prevention insurance systems have been integrated to provide that funding.

7.2.7 Targeting specific groups

There is growing awareness across the EU (and beyond) of the need to take account of any particular susceptibilities of sensitive risk groups in respect of OSH risks. The 2017 'Safe and healthier working' report²¹ addressed this, indicating that there is a need to:

pay attention to the specific risks faced by women and men, young workers, older workers, migrants or persons with disabilities.

The evaluation of the EU OSH directives²² focused in particular on ageing workers who, it was noted, have no specific protection in EU OSH legislation (unlike their young counterparts). The report suggested that their needs might best be seen in the context of a wider appraisal of how the OSH needs of different vulnerable groups are addressed in the future.

One country examined as part of the project (Sweden) identified a particular susceptibility to risk among female workers. National statistics showed that the rate of ill health among women was higher than that for men. As a consequence, more women than men were being forced to end their working life early for health reasons, especially as a result of MSDs. The approach adopted to address this was to focus action on those work sectors (e.g. the care sector) in which women predominate in the workforce.

It is understood from interviews that Sweden is now widening this focused approach to recognise that other vulnerable groups, such as migrant workers, might have particular risks. For example, migrant

²⁰ <https://www.dguv.de/en/prevention/osh-strategy/index.jsp>

²¹ <https://osha.europa.eu/en/publications/safer-and-healthier-work-any-age-final-overall-analysis-report/view>

²² DG Employment, Social Affairs and Inclusion (2017) Evaluation of the Practical Implementation of the EU Occupational Safety and Health (OSH) Directives in EU Member States: Main Report, available at: <https://ec.europa.eu/social/main.jsp?catId=148&langId=en&moreDocuments=yes>

workers are frequently segregated in high-risk sectors or often have part-time roles and miss out on important education and training initiatives as a result. Action to address this is an important stage in developing effective risk-reduction strategies.

Other approaches targeting specific groups are also apparent in some of the other strategic initiatives reported on. As noted above, sector-specific interventions (e.g. in construction and health care) feature in a number of countries, as do interventions aimed specifically at SMEs. In a number of cases, the sectors selected have a preponderance of specific groups. For example, the HORECA sector addressed in Austria has a recognised excess of younger and migrant workers among its workforce and the shellfish industry addressed in a Spanish initiative has a majority of female workers. Therefore, although less explicit than the Swedish case, these initiatives help to focus attention on the specific needs of such workers.

Sector-specific measures can encompass the full range of material, for example not only framing guidance on assessments of the risks commonly encountered in that sector, but also ensuring that ideas and suggestions for risk prevention are also seen as relevant and valid. In this case, recipients of the advice and guidance are more likely to be receptive and (hopefully) more likely to take the appropriate action.

As well as focusing attention on those seen as having the most need, or as having particular problems, such targeting also enables guidance and other material to be tailored to the target audience, enabling it to be seen as more relevant and applicable.

7.2.8 Commitment

One of the many challenges facing those charged with developing and applying strategic approaches to MSD prevention lies in gaining commitment from all players within the target group (or groups). Earlier factors have pointed to the difficulties in persuading SMEs, for example, to sign up to the risk assessment and prevention process. However, the need for (and benefits of) commitment extend to all parties. For example, the introduction of design changes intended to reduce MSD risks will need commitment from senior management to sanction the cost and possible short-term impact on production, etc., while such changes are introduced. At the 'grass roots' level, workers must also be committed to the need for change and must accept the measures advocated. Experience has shown that workers sometimes react adversely to change, especially when they see it as being 'forced' upon them. In contrast, they have been shown to be more receptive if they not only appreciate the need for change, but also are directly engaged in the change process.

An example of how the need for commitment applies throughout an organisation can be found in attempts to introduce patient-handling devices as an alternative to the manual handling of patients. Where possible, workplaces need to be designed to accommodate the use of such devices or, if that is not possible (e.g. in domestic dwellings), appropriately designed devices need to be selected to maximise their utility. Commitment to organisational changes (e.g. adjusting work schedules) might also be required to accommodate the fact that using such devices might be slower than manual patient handling. As a third strand, workers also need to commit to using the devices, rather than relying on the argument that patients do not like them. Unpublished research in the UK on behalf of one health authority explored this issue. Although the experience of being 'hoisted' was sometimes not particularly pleasant, the study showed that, when patients understood and appreciated the need for their use, they were usually accepting of this. In addition, some 'patient-handling' devices do not 'hoist' the patient but encourage them (with support) to use residual strengths and capabilities, a measure that is often seen as beneficial for the patient.

7.2.9 Coherence and evaluation

An extensive array of MSD prevention strategies have been implemented over the last two decades, within the EU and beyond. What is clear from some of these strategies (in some countries) is that they take a piecemeal approach, with a lack of coherence (or continuity) in the messages being shared. This suggests a lack of learning from past initiatives in relation to the implementation and evaluation of initiatives.

It was evident from many of the policy-level interventions that the planning of the initiative had apparently not been thought through, there was no intervention logic or theory of change, and evaluation had not been built in.

As stated earlier, during the selection of initiatives to be evaluated, the planned exclusion criterion of a lack of formal evaluation was not applied because there were few indications of any such evaluation in any of the initiatives listed. The challenge with MSDs is that, without this planning and integration of measures (with an evaluation plan built in), there is no way to find out if they have had any effect. Without evaluation to find out what works (and, equally importantly, what does not work) sequential interventions are developed without the benefit of learning from what has gone before. When interventions involved direct involvement with companies, a degree of evaluation was possible (e.g. when a proportion of the companies that were advised on assessing risks then subsequently assessed those risks). However, this assumes that the risks assessed are actually those leading to MSDs and that their removal will have had the desired effect of reducing the incidence of MSDs among the workforce.

7.2.10 Approaches to prevention

There is growing worldwide recognition of the need to adopt a more holistic approach to MSD prevention instead of focusing only on the workplace. In some countries, this is driven by research thinking that recognises the multifactorial nature of MSDs, including the wider role of lifestyle and behaviour away from the work environment. Widening the reach of interventions to include aspects of public health may help with the increasing integration of MSD health issues and the development of a more holistic approach. One further benefit of widening the approaches to prevention would be the recognition of psychosocial issues, and their contribution to MSD risks.

There appears to be a reluctance among some involved with OSH to adopt such an approach. One interesting question presented during the validation workshop was ‘what are we trying to prevent?’, namely are we (1) preventing MSD risks in the workplace, (2) preventing workers from getting MSDs or (3) preventing workers from not being able to work because of their MSDs? The specific prevention of MSD risks in the workplace is a narrow perspective and one that, given the accepted multifactorial nature of MSDs, is less likely to achieve either of the other two aims.

7.2.11 Limited focus

Among many of the different initiatives, there continues to be a focus on risk assessment rather than on prevention measures. Evidence from the *ex post* evaluation of the 24 EU OSH directives referred to earlier, combined with the experience of experts attending a number of the focus groups, suggested that, in some countries at least, risk assessments were seen as the end product, rather than part of the means towards the final aim (‘product’) of the reduction of risks.

Associated with this issue is the widespread perception among employers that an extensive series of different risk assessments are required (rather than the intended integration of risk assessments understood to be the original concept underlying the 24 OSH directives, starting with the Framework Directive). This belief is a formidable barrier to employers and may be the reason why employers are not engaging with the risk assessment process at all, as the task seems too overwhelming.

As with all risk assessments, there is widespread recognition (among OSH experts at least) of the established OSH prevention hierarchy. In this, the prevention of risks at the source takes precedence over tertiary measures such as training. MSD prevention should be no different and, although the message is promoted at the strategic level, it does not seem to be reaching the workplace. One reason for the failure of the message is that employers may consider workplace change to be associated with expensive redesign such as automation. Experience in a variety of industries has shown that employers often fail to consider the viability of secondary (risk-reduction) measures, transferring their attention directly from the lack of feasibility of automation to tertiary measures such as manual handling training or job rotation. While such measures undoubtedly have a role to play when correctly applied, they do not remove or reduce the risks at the source and, even when correctly and sustainably applied, are less likely to be effective than workplace design changes.

Taking a longer term perspective, incorporating ergonomics into the design and engineering process has been shown to prevent future problems by designing out risks at the source. In addition, the consideration of potential OSH risks (not just MSD risks) in the planning and design of new plants, equipment, production facilities, work systems, etc., can reap long-term benefits.

7.3 Summary of messages

A number of messages were identified from the studies undertaken as part of this project. Although, in many cases, they can be seen as repeating existing knowledge and awareness among OSH professionals, the fact that they emerged from the study's specific focus on the prevention of MSDs (and the challenges faced in understanding why they continue to be a significant burden) serves to reinforce their importance and relevance.

7.3.1 Top-level commitment and resourcing

Poor workplace health is widely recognised as placing a considerable burden not only on the individual sufferers and their employers, but also in a wider social and societal context. Government departments and other top-level players need to fully recognise this, commit to action and provide adequate resources to support and drive action. While different national organisational structures make it hard to recommend a single approach, the principles remain unchanged — seeking commitment at lower levels must be accompanied by a parallel commitment at the top.

However, commitment is unlikely to be effective without adequate resourcing to ensure that the commitment is carried through to concrete action.

An example of the negative impacts in this area emerged during the project. This involved adverse comments that were during UK focus groups on the policy change of the national inspectorate that resulted in the inspectorate charging employers for guidance and advice on risk-reduction measures that would previously have been provided free. In contrast, the legislative requirement in Austria for SMEs to make use of safety-related and occupational health care services, and the development of the AUVAsicher scheme to effectively subsidise the provision of those services, provides a positive example of commitment and resourcing at the highest level.

In another example of top-level commitment and resourcing, the funding of the epidemiological studies (CONSTANCES and COSET) in France demonstrates both a long-term commitment and a recognition of the need identified earlier for better data and statistics. The absence of adequate statistics was raised by the report on the *ex post* evaluation of the EU OSH directives cited earlier as a significant barrier to evaluating the impact and effectiveness of many of the directives. Their absence also provided challenges within the current project in attempting to establish the current national situation as background for the 25 short reports, and was a recurring comment in a number of the countries explored in more detail in relation to attempts to demonstrate the effectiveness of the policies and strategic approaches undertaken.

7.3.2 Encouraging collaboration among stakeholders

There is a considerable (and growing) body of evidence showing that involvement in a process helps to obtain commitment to that process. Such involvement is effective whether it occurs at a high level, in stakeholders co-developing intervention strategies, or at a practical workplace level, where risk assessment and the subsequent introduction of risk prevention measures should be a collaborative activity involving all levels of management and the workforce, not something 'imposed' by an expert (internal or external).

Whatever the level of intervention and action, there is undoubted value in involving all stakeholders in identifying risks, and identifying, developing and introducing measures to control or prevent those risks. Reflecting the growing recognition that MSDs cannot be adequately addressed in the workplace alone, the Preventive Health Care Act in Germany provides a strong legal basis for cooperation between actors involved in prevention and health promotion. At a slightly lower strategic level, the development in Denmark of an initiative that radically changed working practices in bricklaying provides a practical example of a high-level collaborative approach, with a number of stakeholders working together to devise, develop and introduce a viable solution to a significant problem.

At the workplace level, some countries include a requirement for such involvement in their legislation and, although EU legislation provides for 'consultation', the nature and extent of that consultation process varies widely from country to country (and also from business to business). Consultation and collaboration between stakeholders is essential whatever the level. However, to be effective, it needs an appropriate cultural environment in which to thrive and it is clear from some of the focus group discussions and interviews that not all countries have such a collaborative culture and might therefore find such an approach more challenging (and less effective).

7.3.3 Incentivising positively

Businesses often regard workplace interventions as intrusive, invasive and expensive, and fail to see the longer term gains and benefits to be obtained by improving workplaces and workers' health. Although information and education aimed at raising awareness are valuable, they are not always sufficient, especially among smaller businesses that lack the necessary expertise in-house and will therefore need to look outside the business for expertise. As well as issues such as risk assessments, this requirement might also extend to the design and engineering functions necessary to develop and introduce change.

Support and guidance, either in kind or financial, can provide the necessary incentives. There appears to be a growing awareness that positive rather than negative incentives (carrots rather than sticks) are likely to be more effective in evoking and encouraging change.

The TMS Pros programme in France presents a specific example of direct help and support (in this case, to put in place effective MSD prevention measures, together with possible support in financing technical improvements). A further example that emerged during the project was an example from Italy, where a loan programme provided direct financial support to SMEs for measures to improve safety and health at work, including projects specifically supporting improvements in the manual handling of loads, thereby reducing an important risk for MSDs.

7.3.4 Coherent planning

Too often, interventions in the past have been carried out without due consideration of the intervention logic, namely how an action can be expected to evoke change and what the barriers to that change are. Policy-level interventions need coherent planning, with the intervention logic clearly thought out and explored.

One point to emerge from the project was that many of the interventions studied appeared to lack the application of such logic (reflected, to some extent, in the lack of formal evaluation plans). While awareness-raising campaigns (several of which were identified during the project) clearly have a role to play, it is important to apply strategic thinking and planning to determine how such awareness will translate into changes in attitudes (and consequently in behaviour). For example, several of the projects examined adopted a specific focus on the care sector. Although few people can be unaware that lifting and supporting people presents significant risks, comments made during the project suggest that this does not appear to have translated into changes in behaviour. However, although part of the issue relates to the attitudes and awareness in the workplace (e.g. 'patients don't like being hoisted'), organisational factors such as systemic time pressures and inadequate staffing levels also contribute.

7.3.5 Integrating actions with other initiatives

As part of any plan, integration is needed between different initiatives. Historically, policy interventions have been carried out without such thinking, providing a somewhat piecemeal approach. One strong feature of the work in a number of the countries studied (e.g. Germany and Sweden) was continuity, with initiatives supported across a number of funding cycles. In the UK, the integration of workplace health initiatives into wider public health measures provides a further example.

7.3.6 Adopting a wider perspective

There is a widespread tendency to compartmentalise issues, especially in respect of a problem as complex as MSDs. MSDs in the workplace are not simply caused by work and are not necessarily 'just' caused by physical factors in the workplace. The extension of MSD awareness campaigns outside the workplace and into schools and colleges, exemplified by the 'Well-being at work in the federal truck' campaign in Belgium, provides a good example of this. Workers do not exist in a series of isolated 'bubbles' (work, home, leisure, schooling, etc.) and the human entity cannot (or should not) be seen in purely physical or psychological terms. A perspective that regards the human worker as, in effect, an 'integrating instrument' that reacts to a wide range of influences in a variety of scenarios (often referred to as a 'whole life' perspective) is essential. Moves to integrate or unify occupational and public health in some countries (e.g. the UK) is evidence of action in this direction.

7.3.7 Providing continuity

Policy-level interventions should not happen and then just stop. They should be continually evaluated and refined and new (or refreshed) activities should draw on experiences of what has gone before and build on those experiences to improve intervention effectiveness and efficacy. Thus, the UK 'Helping Great Britain work well' strategy builds on the experience gained from previous campaigns and initiatives. In the same way, in Germany, the GDA is now in its third period, having been built and developed based on the first two periods.

An example of using research evidence to underpin policy action and provide continuity is the 'Women's Work Environment programme in Sweden. In that programme, current policies incorporating a gender perspective have been built upon the successful research and development activities flowing from earlier assignments by the government to SWEA. One of the aims was to generate knowledge on women's work environment and to gain a better understanding of the causes of the higher ill health rates among women than men. This demonstrates the potential contribution of a strong evidence base to deriving successful policies.

7.3.8 Promoting the preventive approach

In some countries at least, such as France, it seems that there are well-established 'teams' for addressing MSD risks in the workplace. However, it also seems that these teams often act in a 'responsive' manner (reacting to reports of injury or illness), rather than a 'preventive' manner. MSD-related legislation (on manual handling and DSE) invokes a preventive pathway and this should be better encouraged (or even required) to prevent MSDs from occurring, rather than employers trying (hopefully) to limit the damage once an MSD arises.

7.3.9 Strengthening the role of ergonomics and ergonomics teaching

'Ergonomics is the scientific discipline concerned with the understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, data and methods to design in order to optimise human well-being and overall system performance' (International Ergonomics Association)²³. The risk factors associated with the cause of MSDs in the workplace are often referred to as ergonomics risk factors and ergonomists and human factors experts would contend that the contributory psychosocial factors are also part of the ergonomics remit (although some non-ergonomists see ergonomics as exclusively addressing the physical domain). An experienced ergonomist will also be able to liaise with designers, engineers and others to develop ameliorative solutions (in fact, in some countries at least, ergonomics has its roots or origins in engineering).

Ergonomics (and ergonomists) should therefore have a central role in the prevention of MSD risks, both in identifying risk factors and in developing solutions to reduce or remove those factors. As was apparent during the project, this is recognised in some countries, where ergonomists are embodied within the core team, but in others this is not the case and an ergonomist might not even be a controlled or regulated profession. This is not to suggest that ergonomics should solely be the role of professional

²³ <https://www.iea.cc/whats/>

ergonomists. Experience has shown that other disciplines including design, engineering and psychology can benefit from ergonomics knowledge and awareness. As well as enabling professionals from those disciplines to apply ergonomics principles in their own work, such knowledge and awareness serves to facilitate communication between the different disciplines. A number of countries are understood to provide ergonomics training to their inspectors, for example.

Beyond these professional groups, there are also suggestions that other groups (e.g. workers themselves) would benefit from suitable ergonomics awareness training and, in the UK, for example, some employers are known to incorporate such training as part of their programmes to educate workers on MSD risks. There are indications that some countries are looking to take this concept further. For example, it was suggested in focus groups in Sweden that training in OSH should become compulsory for entrepreneurs establishing a new business (and that this would include relevant specific risks — which could include ergonomics risks — depending on the nature of the business).

8 Conclusions

The initiatives collected and analysed in this element of the project will contribute to investigating the success factors of and ways of implementing MSD prevention policies (and perhaps in developing new policy approaches, especially reflecting increased holistic thinking) as part of the overall final report of the research project.

This policy-level intervention element of the project has identified a wide range of intervention approaches. Although some have a common theme (e.g. the use of targeted inspections), others provide a unique perspective and, although some rely heavily on a particular national OSH prevention culture, even here there are lessons to be learned and common threads to be identified that would inform future policies and initiatives in countries with different approaches and cultures.

Taken collectively, the prevention initiatives reflect a considerable array of strategic approaches and, although no country has adopted the entire battery of measures, some appear to have integrated a sizeable number, ranging from legislative change to direct workplace interventions. The integration of such measures is essential for maximising their impact, rather than them being considered as a series of unconnected initiatives.

Even when a common theme can be identified, such as the use of targeted inspections, there appear to be national differences. Some inspections placed the primary emphasis on compliance, exploring the extent to which employers had complied with their duties (e.g. in assessing risks); others, however, reflected a more impact-orientated viewpoint, examining the extent to which MSD risks had been adequately removed or controlled. It is a somewhat sobering thought to acknowledge that a number of such initiatives served to highlight the number of employers that had failed (or at least largely failed) to engage with the MSD risk assessment and reduction process at all.

There is some evidence from the wider literature on the effectiveness of inspections. For example, Andersen et al.²⁴ found there to be 'moderately strong evidence' for improvement as a result of OSH legislation and inspections. However, the evidence from the current study is less clear. Although some initiatives have suggested a benefit, others are more uncertain. For example, the experience in Sweden was that, even when follow-up visits occurred, a sizeable minority of employers still failed to engage, having not responded to the advice and guidance provided during initial visits. Given the suggestions of a reliance on inspections as a significant strategic element of any intervention, such findings do appear to undermine such thinking.

In other countries, such as France and the UK, a perceived under-resourcing of the inspectorate was seen as a barrier, with the view expressed in France that employers did not regard the 'threat' of an inspection as a serious issue because such a visit was seen as unlikely. There was also the suggestion that reliance on inspection without 'enforcement' may undermine that intervention.

Another widespread theme was the use of various forms of risk awareness-raising interventions. These often displayed a commendable degree of variety of approach and used a wide range of media to communicate the message; the selection of media that are more likely to be accessed by younger people, not just workers, was a particular feature. However, although some such initiatives included a simple measure of 'reach', further evaluation was limited (and did not appear to be planned), meaning that it was not possible to establish the extent to which awareness was actually raised (as opposed to people simply having seen the material) or, more importantly, the extent to which such heightened awareness translated into changes in behaviour towards adopting less risky processes or procedures and as a result into a tangible reduction in MSDs.

A further limitation in this regard was the recognition that the data available to enable such investigations were limited (or non-existent). Some countries had no national data (other than those provided through EU investigations such as the LFS and EWCS), while others relied solely on statistics relating to compensation claims. Given that such claims are limited to 'recognised' occupational diseases or illnesses and many MSDs (including many cases of back pain) are not recognised as such, such

²⁴ Andersen AJH, Malmros P, Ebbelhoej NE, et al. (2019) Systematic literature review on the effects of occupational safety and health (OSH) interventions at the workplace. *Scand J Work Environ Health*;45(2):103-113.

statistics present a distorted and potentially misleading picture. This makes it difficult to provide a sound evidence base on which to formulate any national policies. At the European (or wider international) level, this becomes even more problematic. Not only are the available data limited, but they are often not consistent between different countries (e.g. differences in recognition of occupational diseases). As a result, any comparisons that are possible can usually be made only at a very superficial level.

Although the absence of suitable statistics makes quantitative assessment of impacts difficult, some of the interventions that seem to have had more influence appear to be those in which measures have been underpinned by legislative developments. Therefore, placing legal obligations on employers to seek the advice of appropriate experts would seem to have generated positive change. There are suggestions from some countries that such measures should go further and that more prescriptive legislation on MSD risks that are not already addressed in detail is warranted. To counter this, however, there are indications from a number of countries that, despite existing legal obligations to do so, a sizeable proportion of companies do not engage with the risk analysis and prevention process at all. Among many of those that do (at least on paper), their involvement and commitment seems to be limited.

Many of the initiatives appear to have been very well received, and appear to have succeeded in increasing the awareness of MSDs, at least in terms of people accessing material and becoming involved with campaigns. There is considerable variety among the initiatives in terms of innovation of approaches, with many of seeking to identify new methods to meet the challenge of work-related MSDs. Clearly, however, the absence of significant impact evaluations makes their relative benefit hard to gauge. Some, such as the 'women's work environment' initiative in Sweden, do appear to have made a tangible change. It is understood that this work has resulted in a sustained change in thinking, in terms of not only women, but also potentially vulnerable groups, in the workplace. In both cases, the focus is on those sectors in which such groups predominate (rather than any specific needs of the groups themselves), therefore helping to ensure that others working in those sectors also benefit.

It is widely recognised that SMEs in particular face many challenges in addressing safety and health in general (not just MSDs). Many interventions have had a particular focus on such employers, with some success (at least among those engaged in the initiatives). However, there is perhaps a wider debate to be had on the reasons for them (and others) failing to engage. Much emphasis has been placed on getting messages across to them — in the belief that their failure to engage is a function of a lack of awareness and understanding. However, others suggest that such failures are due to a lack of time — or a perception that the cost of compliance is too great. This latter point is of particular interest because, in recent years, there have been considerable efforts in presenting cost-benefit analyses of interventions to reduce MSD risks. Despite these efforts, the view that prevention actions such as the use of handling aids are too expensive (in terms of either the equipment or the extra time required to use them) still seems quite common.

Although an impressive variety of intervention approaches has been identified, it is not possible to identify which of these are the most effective in reducing MSDs. All seem to be of merit and, as noted above, are well received by those who participated in some way. However, these interventions are largely constructed against a background of the existing framework of OSH legislation. Although the inadequacies of this framework are acknowledged in a number of countries, only Sweden appears to have addressed this at the highest level, extending national legal requirements beyond the risks encompassed by the Manual Handling and DSE Directives. Although some other countries (e.g. the UK) have recognised this (and provide extensive help and guidance on such matters), the absence of explicit legal obligations is recognised as a barrier, given that compliance with legal duties is seen as a major driver of employers' actions²⁵. For example, concerns about a restricted focus on the weight of items being handled were raised as a particular issue during focus group discussions in France, as the national legislation in France is seen as more prescriptive in relation to the weights of objects than as regards other physical aspects of manual handling operations.

²⁵ DG Employment, Social Affairs and Inclusion (2017) Evaluation of the Practical Implementation of the EU Occupational Safety and Health (OSH) Directives in EU Member States: Main Report, available at: <https://ec.europa.eu/social/main.jsp?catId=148&langId=en&moreDocuments=yes>

It is clear from this study that there are deficiencies at all levels. These start with the legislative frameworks in most EU countries, which are derived from those in the EU OSH directives. These in turn lead to shortcomings in national policies and strategy actions, in which the focus adopted is often one of encouraging compliance with that legislation (e.g. in conducting risk assessments). These shortcomings then cascade down into the workplace, leading to a narrow or restricted focus on MSD risks and their prevention.

However, as noted earlier, shortcomings at the workplace level cannot all be attributed to legislative inadequacies, as there is evidence that a considerable proportion of employers do not engage with the preventive process at all (even at the level of conducting risk assessments, let alone taking concrete action).

Strategies for preventive interventions need to consider all aspects of the intervention logic, including not only raising awareness, but also changing attitudes and behaviour as a result. As an example, evidence from some focus group discussions indicated a reluctance to use patient-handling devices (for a variety of reasons), with many considering that MSDs such as back pain were 'just part of the job'. As a further example, staff at one health facility admitted prioritising what they saw as the 'needs' of their clients over their own safety and health.

In some such cases, the reasons given for the failure to adopt preventive measures were systemic and related to a lack of time or other organisational pressures. It is apparent from evidence such as this that intervention strategies aimed at the workplace level have to adopt a systemic approach and not just focus on the actions of individual workers.

Given the shortcomings of the legislative background, it is understandable that, although the study adopted a broad focus on MSDs, many of the actions and initiatives identified adopted the risks associated with manual handling as their main focus.

Further common deficiencies in many companies included a tendency to choose what were regarded as 'quick and easy' options, such as providing training in manual handling techniques, when a more effective approach would have been to design the work and workplace to remove the reliance on such training, preventing risks at the source.

In summary, against the overall project objective of investigating the effectiveness and quality of workplace interventions and risk assessment approaches, a series of specific aims were identified from this work:

- review the resources developed and used in the initiatives described, such as guidance, toolkits, training packages, web applications and e-tools — the project has carried out such a review and, as noted above, identified a considerable range of resources and approaches, many of which involve ideas that could be transferred to and used in other countries;
- explore the range of strategies and initiatives used by major stakeholders (including regulators and regulatory agencies, social partners, professional bodies and preventive services) and how these strategies are adapted to the conditions and needs of different beneficiaries (e.g. in different sectors) — in many cases, the approaches have been extensively tailored to reflect the needs of the target audiences, whether in adopting presentation approaches to suit the target audience (e.g. the use of web or social media to reach younger audiences) or in selecting sector-specific solutions to publicise and promote the approach;
- gain a more complete understanding of the challenges for OSH in tackling work-related MSDs and a better understanding of the conditions under which strategies, policies and actions to address them are most effective.

It is clear from the appraisal of interventions that many challenges remain in tackling work-related MSDs and the array of approaches adopted in the initiatives selected demonstrate many facets of these challenges and the widespread attempts to address them. However, as discussed earlier, identifying the conditions under which such interventions are effective is problematic.

Some pointers can nevertheless be taken from the investigations described and the associated discussions in the different countries involved (from the focus groups and interviews). These can be used to provide recommendations on what are likely to be the most effective interventions in the future, as are outlined below.

- **MSDs are not purely a work-related issue**

Addressing MSDs requires attitude (and, as a result, behaviour) changes among not just the working-age population at work. Some of the initiatives have recognised this, seeking, for example, to promote MSD messages among school-age individuals or encouraging generally healthier lifestyles. As well as these specific actions, there are signs that some countries at least are adopting a more holistic approach to health, reducing the tendency to ‘compartmentalise’ it into occupational health and public health. This is clearly desirable, as many of the work-relevant health issues that are particularly relevant today, such as MSDs and psychosocial health, have a multiplicity of contributory factors, both within and outside the working environment.

- **Legislation is not the (only) answer**

Although some employers point to gaps in the current legislative framework as explaining a significant part of the problem, it is apparent that many employers are not engaging with the existing legal framework. Increasing legislative provisions will do little, it seems, to cause employers such as these to engage more fully.

- **Changing attitudes to the risks is fundamental**

Despite efforts to change viewpoints to the contrary, attitudes that either risks are ‘just part of the job’ or measures to reduce them are too intrusive, expensive, time consuming, etc., still seem to prevail. Such attitudes present a considerable barrier to change. Industry has come a long way from the attitude, for example, that respiratory ill health was an unavoidable consequence of working down a coal mine or in a cotton mill, and attitudes to musculoskeletal health require a similar change.

- **System changes are a key requirement for success**

Part of the concern that adopting preventive measures takes too long stems from work systems that promote or encourage speedy working. Whether this is reflected in competitive tendering in the construction industry, pay systems that encourage speedy working over all other considerations or pressures that restrict the time available for a task in the care sector, part of the answer at least must come from changes to such systems, which again flows back to changing attitudes among those who commission, plan or organise such work. Short-term cost gains have to be offset against the longer term benefits of a healthier, more effective workforce.

- **Forward-thinking is essential**

In recent years, considerable thinking has gone into the development of, for example, simple yet effective handling aids. However, the potential benefits of such thinking are lost if the strategic planning and design of work and workplaces do not accommodate the results of such thinking. Good examples of this can be drawn from the health care sector, where a lack of consideration in hospital design imposes constraints on the use of patient-handling devices, and inadequate scheduling and planning leads to staff using manual techniques in preference to ‘save time’. Experience from the UK, for example, has shown that a failure to include such considerations throughout the planning process leads to considerable difficulties when the planning comes to fruition, and shortcomings in workplace design become apparent to those required to work in these workplaces. Building a need to consider safety and health issues into planning policies would provide valuable safeguards.

- **The message needs to be widened**

Workplace health is not just an issue for the occupational health professional. The points above make it clear that planners, designers, engineers, purchasers, etc., all have a part to play and that targeting messages at only those in the workplace will have less impact than messages targeting a wider audience as a result.

- **Concerted, coordinated action is more likely to be effective**

Clearly, this need to widen the message will require suitable media and material to suit the different target groups. Within any one group, however, some individuals will need convincing of the need for action and others will simply need to know how to take such action (as well as what action to take). These different audiences have different needs that are therefore likely to be met through different approaches. Promoting the knowledge of suitable interventions will be effective only among those who are already convinced of the need to intervene. Others will be suitably convinced but will need to know what interventions are most likely to be effective for them, both in their business in their sector.

- **Logical thinking is essential**

Whatever course of action is adopted, it is essential that such measures are conceived, planned and implemented in response to a logical plan. Assuming that the ultimate aim is the reduction in the prevalence of MSDs, what is the logic flow through which the planned intervention will achieve that aim? What assumptions are made in that flow and what are the potential barriers to success? Finally (but importantly), how will the success of that intervention be assessed?

Annex: Classification taxonomy for the 25 initiatives

Initiative and country		Type											Organisations involved				Target groups	
Initiative	Country	Legislation	Campaign	Research	Tools and guidance	Strategy	Network	Programme	Support scheme	Labour inspection	Tripartite agreement and collaboration	Government bodies	Social partners	Insurers	Researchers	Specific groups or sectors	General	
MSD prevention: support scheme for micro and small enterprises (through AUVAsicher)	AT								✓			✓		✓		✓		
Healthy working in the HORECA sector	AT									✓		✓				✓		
A Participative Hazard and Risk Management (APHIRM) Toolkit for the prevention of Musculoskeletal Disorders	AU			✓	✓							✓			✓		✓	
Prevention of musculoskeletal disorders as a priority in the national strategy and campaigning on MSD prevention	BE		✓									✓			✓		✓	
Intervention typology and guidance on preventing musculoskeletal disorders	BE			✓	✓							✓			✓		✓	
Development of a new prevention guideline for musculoskeletal disorders for Ontario	CA			✓	✓							✓			✓		✓	
'Think of me - Love your back'	DE		✓											✓			✓	

Prevention policy and practice: approaches to tackling work-related musculoskeletal disorders

Initiative and country		Type											Organisations involved				Target groups	
Initiative	Country	Legislation	Campaign	Research	Tools and guidance	Strategy	Network	Programme	Support scheme	Labour inspection	Tripartite agreement and collaboration	Government bodies	Social partners	Insurers	Researchers	Specific groups or sectors	General	
		Prevention makes you strong — ncluding your back (Prävention macht stark — auch Deinen Rücken)	DE							✓				✓	✓	✓		
The Preventive Health Care Act of 2015 (Präventionsgesetz)	DE	✓										✓	✓	✓			✓	
The Danish National Job & Body Campaign	DK		✓									✓	✓				✓	
A strategy for working environment efforts up to 2020 — Risk-based inspections	DK					✓				✓		✓				✓		
Preventing low back pain in bricklaying work	DK	✓								✓	✓	✓	✓		✓	✓		
Programme to prevent ergonomic and psychosocial risks in the health and social care sectors	ES							✓				✓			✓	✓		
Good practice guidelines for on-foot shellfish workers	ES				✓							✓			✓	✓		
Epidemiological monitoring of work-related health problems: Cohorts Coset-MSA and Coset-Independents	FR			✓				✓						✓	✓	✓		

Prevention policy and practice: approaches to tackling work-related musculoskeletal disorders

Initiative and country		Type											Organisations involved				Target groups	
Initiative	Country	Legislation	Campaign	Research	Tools and guidance	Strategy	Network	Programme	Support scheme	Labour inspection	Tripartite agreement and collaboration	Government bodies	Social partners	Insurers	Researchers	Specific groups or sectors	General	
TMS (troubles musculo-squelettiques) Pros and assistance of regional coordinators	FR							✓				✓		✓			✓	
Economic incentive programme	IT								✓			✓				✓		
National Social programme on working conditions (MAPA) — sub-programme on physical workload	NL							✓				✓			✓		✓	
Sustainable Physical Work Network	NL						✓					✓			✓		✓	
3-2-1 Together for a good working environment	NO										✓	✓	✓			✓		
Inspection project on MSD prevention	NO									✓		✓				✓		
Women's work environment	SE			✓	✓					✓		✓			✓	✓		
Provisions and general recommendations for the prevention of musculoskeletal disorders	SE	✓										✓	✓				✓	
'Helping Great Britain Work Well strategy and Work Programme on MSDs	UK					✓		✓				✓	✓				✓	
NIOSH Musculoskeletal Health Cross-Sector Program	US			✓								✓	✓		✓		✓	

The European Agency for Safety and Health at Work (EU-OSHA) contributes to making Europe a safer, healthier and more productive place to work. The Agency researches, develops, and distributes reliable, balanced, and impartial safety and health information and organises pan-European awareness raising campaigns. Set up by the European Union in 1994 and based in Bilbao, Spain, the Agency brings together representatives from the European Commission, Member State governments, employers' and workers' organisations, as well as leading experts in each of the EU Member States and beyond.

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