Workplace Disability Management Programs Promoting Return-to-Work (RTW)

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1 Background

1.1 DESCRIPTION OF THE CONDITION

Workplace inclusion of employees with disabling injury or illness continue to create a great challenge for most industrialized countries, where musculoskeletal disorders, and more recently mental health disorders are conditions contributing to the inability to work (Corbiére et al 2009; Waddell & Burton 2005; WHO 2005; WHO 2003; Elders et al 2000). In particular long-term sickness absence is a challenge associated to a series of negative economic and social consequences with great impact on society (Vingård et al. 2004; Bloch & Prins 2001; Galizzi & Boden 1996). The share of the working-age population relying on disability and sickness benefits as their main source of income has tended to increase in many OECD countries (OECD 2008; OECD 2003). Moreover long-term sickness absence often represents a substantial individual life event (Dembe 2001), where the duration of absence due to injury or illness increases the future risk of receiving disability pension and permanent exclusion from the labour market (Lund et al. 2008; Labriola & Lund 2007). At the employer-level long-term sickness absence may lead to lower productivity and quality, higher employee turnover and reduction in job satisfaction due to the added workload placed on other employees (Whitaker 2001). Facilitating return-to-work (RTW) following work disability therefore receives continued attention from a wide spectrum of research fields and policy- and decision-makers (OECD 2008; Waddell & Burton 2005; Wynne & McAnaney 2004; Thorton 1998). Many employers revise control absence policies to minimise loss in production while governments focus on early return-to-work policies (Cunningham & James 2000; MacEachen et al 2007). What has gained less attention is the actual development of sustainable management and inclusive work environments to prevent exclusion and prolonged absence leading to early retirement. Therefore stimulating Disability Management (DM) and preventing the onset of work disability, by synthesizing research on DM-practices promoting return work (RTW), is needed.

DM is a concept which is rapidly emerging in business and industry as well as private and public rehabilitation. However, systematic or comprehensive disability management promoting RTW are relatively recent (Harder & Scott 2005; Habeck & Hunt 1999; Van Hooser & Rice 1989). DM is often a multi-faceted challenge and may vary according to the present injury or illness and the cultural, legal and structural context of the labour market (Loisel et al. 2005a; Krause & Lund 2004; Shrey & Hursh 1999; Høgelund 2003). DM-practices aimed at RTW involves dynamic interactions between the individual's health condition and contextual factors such as the employer and healthcare- and social/compensation systems (Labriola 2008; Schultz et al. 2007; Loisel et al. 2005a; Waddell & Burton 2005; Pransky et al. 2004; Franche & Krause 2002; Friesen 2001). The recognition of the impact of social and contextual factors on RTW is also referred to as a paradigm shift from disease prevention and treatment to disability prevention and management (Loisel et al. 2001; Shrey 1996).

Given the multi-faceted nature of DM, concrete interventions on RTW may be delivered by providers, both internal and external to the workplace. This means that inherent interventions related to DM-practices may be directed or initiated at the workplace and that the current implementation of these interventions can take place within the workplace-setting or in settings outside the workplace (van Oostrom et al. 2009; Franche et al. 2005; Harder & Scott 2005).

Recent research has highlighted the potentials of a closer linkage between DM-practices and the workplace-level (van Oostrom et al 2009; Franche et al. 2005; Krause & Lund 2004; Krause et al 1998) and the workplace-level is put forward as a decisive arena for the management of RTW (MacEachen et al. 2006; James et al 2006; Franche et al. 2005; Krause & Lund 2004; King 1998; Shrey 1995). This has led to a growing interest in workplace-based DM as an effective effort to promote RTW. DM in the workplace can be seen as organizational practices with the potential to minimize loss in production, reduce the magnitude of work disability, thereby preventing injuries or illnesses from becoming chronically disabling (Brewer et al 2007; Williams & Westmorland 2002; Amick et al. 2000a; Shrey & Hursh 1999; Habeck & Hunt 1999; Akabas et al 1992).

This review focuses on the form of DM that takes place within the workplace-setting and is labelled Workplace Disability Management (WPDM) (Williams & Westmorland 2002; Shrey 1995; Akabas et al 1992). Our research interest is to elucidate the role of WPDM-programmes aimed at RTW of sick listed employees.

While the term RTW is commonly used, the extent to which it has a shared and agreed upon meaning is small. RTW can be referred to as an intervention, a process and an outcome (Young et al 2005b). In this review we see RTW as an outcome. RTW refers to a variety of outcomes following work disability that describes the duration or extent of an inability to work due to functional limitations (Krause & Lund 2004).

Work disability following injury or illness can be wholly or partly work related. Thus the work environment often limits the actual space for recovery, which employees face upon their return (Krause & Lund 2004). In this review the term 'work disability' refers to individuals who have discontinued their participation in occupational activities, and includes time off work as well as any ongoing work limitations. This approach is consistent with the definition of disability advanced by the International Classification of Functioning, Disability and Health (ICF) (Young et al 2005b; WHO 2001). This review considers employees whose ability to perform customary work tasks are endangered when an acquired physical injury (e.g. musculoskeletal disorders; back pain, neck pain or whiplash), illness (e.g. cancer or stroke) or mental health disorder (e.g. stress disorder, depression or anxiety) results in functional limitations and sickness absence.

To place our approach to work disability in the larger context of DM, it would be reasonable to argue that the type of components encompassed in workplace disability management have the potential to prevent exclusion and enhance a better understanding of the management of RTW at the workplace. We acknowledged that our demarcation of DM and work disabilities included is less than ideal, given the lack of attention paid to other types of pre-existing disabilities or impairments. Nevertheless, this approach still has considerable value as an, albeit partial, indication of how far employers really are seeking to secure safe RTW through the adoption of WPDM (James et al 1997).

1.2 DESCRIPTION OF THE INTERVENTION

On the whole WPDM is defined as a comprehensive and cohesive employer-based approach to managing complex needs of people with work disability within a given work environment (Shrey 1995; Harder & Scott 2005). The aim of WPDM is successful job maintenance and RTW (Akabas et al 1992).

WPDM may focus on the disablement process (Verbrugge & Jette 1994) in its earliest stages after the work disabling injury or illness has occurred (*secondary prevention*) (Frank et al. 1996). Suitable WPDM-practices can also help people manage complicated,

long-term or chronic health problems (*tertiary prevention*) (Garcy et al. 1996). Both secondary and tertiary approaches to RTW may involve interventions at the individual, organizational or structural level or a combination of these (Labriola 2008; Loisel et al. 2005a).

In this review 'Workplace Disability Management' is operationally defined as: *RTW-related policies and procedures, in which the employer, systematically secure an on-going, timely and pro-active alertness towards the allocation, organisation and coordination of resources to the practical management of return-to-work within the workplace.* By the term *workplace* emphasis is placed on the domain of the workplace-level. We focus on WPDM in the context of secondary prevention, which in effect concentrates attention on the arrangements that employers have in place to facilitate the return-to-work of employees who are unable to work as a result of injury or illness.

To frame the components and arrangements involved in a secondary prevention perspective on WPDM, employers may develop WPDM-programmes to guide their effort in helping sick-listed employees back to work (Williams & Westmorland 2002; Shrey 1995; Akabas et al 1992) (see pg.9 for list of components). WPDM-programmes utilize services, people, and procedures to facilitate safe and timely RTW (Shrey et al. 2006; Williams & Westmorland 2002; Shrey 1995; Akabas et al 1992). This makes WPDM-programmes unique in providing support to workplace practices on RTW, bridging interventions, strengthen corporate culture expectations and collaboration across problems and stakeholders in the workplace (Amick et al. 2000a; Shrey 1995; Van Hooser & Rice 1989).

In practice having a WPDM-programme in place may clarify the procedures and activities at hand for both employers and employees when an injury or illness occurs. The employee may, when sick-listed, receive information on how the workplace can support the employee in the progress from injury or illness to safe RTW. This would keep the employee from feeling excluded from the workplace and at the same time secure an ongoing evaluation of their situation and initiatives taken. On the other hand employers will have proper procedures and services installed on how to register, and respond to sick-listed employees and monitor initiatives towards RTW.

All WPDM-programmes provide a collective framework for the complex and sensitive issue of RTW that gives the employer and employee a unique opportunity to structure

services in relation to the present health condition and achieve consensus on expectations and the possibilities for suitable accommodation opportunities.

1.3 HOW THE INTERVENTION MIGHT WORK

In this review, the presence of a WPDM-programme refers to a situation where there exists organizational policies and practices (OPP) in terms of the management of RTW (Amick et al. 2000a; Shrey 1995; Hunt & Habeck 1993). Employer-provided and initiated WPDM can and does rely on policies and procedures for its impact. Interventions and program components come as a result of, and have power because of decisions and procedures within the workplace. This is a major distinguishing feature of WPDM, whereas provider-driven DM must rely only on the impact of interventions and programme components alone as a commodity or services offered to the workplace. This is why this review incorporates workplace organizational policies and practices in its scope, in order to capture the organizationally relevant factors involved in WPDM and RTW outcomes.

We conceptualize a WPDM-programme as: *an organisational rehabilitation service provided by the employer consisting of an integrated set of interventions/programme components that foster and promote safe and timely RTW within the work environment*. A WPDM-programme therefore relates to conditions of the practical implementation of RTW-activities and changes in, who initiates RTW-activities-, how RTW-activities are organised and managed.

WPDM-programmes are typically offered by the employer in collaboration with the central key-players in the workplace (e.g. managers, supervisors, labour union representatives, occupational health and safety officers, human resource officers, occupational therapist or rehabilitation service councillors) (Shrey & Hursh 1999). However, the presence, composition and involvement of the workplace key-parties in the RTW-process may vary according to occupational health and safety systems, variations in the extent of worker ill health and injury, work undertaken and cultural context (Shaw et al. 2008; Amick et al. 2000a; Frank 1998; James et al 1997).

The duration of WPDM-programmes or specific programme components in a WPDM-programme may vary according to the individual health condition and disability phase (e.g. acute, sub-acute or recovery phase) (Franche & Krause 2002, Frank et al 1996), phase-specificity of the RTW-process (off work, pre-return, post return) (Young et al 2005b), and work environments.

Attention to the different phases in the return to work process (i.e. while the employee is off work, when the employee returns back to work, and once back at work during the phase of sustainability of work ability) may seem important when evaluating the scope of WPDM-programs and their inherent programme components (Tjulin et al. 2009).

The impact of work environments and their relation to duration of disability often seem to be overshadowed by clinical aspects of RTW. Thus the provision of work environments services (e.g. human resources, labour relations and personnel management services, accommodations, availability of modified work (schedule, duties) and access to alternative placements) is emphasized by ILO and WHO, as factors that may play an equally profound role on work opportunities, where DM and duration of disability also can be considered (WHO 2001; ILO 2002). Components of WPDM-programmes therefore may be aimed at the individual, group and organizational level or a combination of these.

WPDM does not imply a unique set of intervention techniques. However multiple programme components have been recognized by research and advocacy groups as established DM-practices on RTW (Franche et al 2005; Shrey 1995; Habeck et al 1991).WPDM-programmes may consist of components such as:

- Early contact and intervention
- Workplace assessment
- Provision of workplace accommodations
- Transitional work opportunities
- Modified/tailored work (schedule, duties)
- Access to alternative placements
- RTW-coordination or case-management
- RTW-policies
- Active employee involvement
- Joint labour-management commitment
- Revision of workplace roles
- Education of workplace staff (e.g. supervisors, OHS-representative, union member or case managers)
- Preventive strategies to avoid disability occurrence
- Information system that enhances accountability, ongoing monitoring of disability cases and program evaluation
- Multidisciplinary work-rehabilitation services; vocational (e.g. job-replacement, job sharing and job training), clinical either psychological (e.g. cognitive therapy, motivation or control exercise) or physical (e.g. graded activity, participatory ergonomics or work hardening).

(See Appendix 1 for details of programme components.)

1.4 WHY IT IS IMPORTANT TO DO THIS REVIEW

Corporate social responsibilities, in areas such as work disability, are promoted by many parts in society from governments to corporations and many employers recognize the importance of DM in promoting RTW (Williams & Westmorland 2002; Whitaker 2002; Shrey & Hursh 1999). However, many employers face a huge challenge in managing the RTW-process, in a situation where more responsibility for disability management and disability prevention is placed upon employers (Eakin et al. 2002; Frick et al. 2000). Inability and lack of compliance towards RTW may lead to huge variation, in the way DM-practices are conducted in the workplace. This is a challenge that demands more knowledge on the development, implementation and evaluation of successful DM-programmes within the workplace-setting (Krause & Lund 2004; Williams & Westmorland 2002).

In spite of the growth in the literature on workplace-based interventions on RTW, WPDM-programmes are only implicitly highlighted, and WPDM-programmes that promote RTW have to our knowledge not been analysed separately in a systematic way. A recent Cochrane review by van Oostrom and colleagues (van Oostrom 2009) evaluated whether effects of workplace based-interventions on RTW differed when applied to musculoskeletal disorders (MSD), mental health problems or other health conditions. The review only included RCTs. Interventions were included as long as they were closely linked or directed at the workplace and there were some sort of collaboration with the employer. This implies that a broader range of clinical interventions, from providers within the healthcare-setting were included. The results of the review show moderate evidence that workplace-based RTW-interventions can reduce sickness absence among workers with MSD disorders compared to usual care (van Oostrom 2009).

In their extensive review of workplace-based RTW-interventions on MSD, Franche and colleagues (Franche et al. 2005) found evidence suggesting that workplace-based RTW-interventions on MSD can reduce work disability duration and associated costs; however the evidence regarding their impact on quality of life was weaker. There was moderate evidence for positive effects associated with components such as; early contact, modified work and the presence of a RTW-coordinator. They underline that there is a need for a better understanding related to which organizational factors that promote RTW effectively (Franche et al. 2005). The importance of workplace involvement is also noted by Carroll and colleagues in their review of RTW among employees with low back pain. Stakeholder participation and work modification were more effective at returning employees to work than other workplace-linked interventions (Carroll et al 2010).

WPDM is also covered in several non-systematic literature reviews (Krause & Lund 2004; Williams & Westmorland 2002). In their evaluation of employer-based RTW programs Krause and Lund outline, that interventions, that include some form of modified work improved RTW and reduced lost work days after occupational injury. They also highlight that the effect of structural elements of RTW-programs need to be supported by more comprehensive research that focus on the role of the workplace and the interactions between employer and employee in the RTW-process (Krause & Lund 2004). Williams and Westmorland (2002) outline the essential elements of successful WPDM. They suggest that employer participation, supportive work climate and collaboration between labour and management are crucial factors in facilitating RTW (Williams & Westmorland 2002).

In contrast to prior systematic reviews, focusing on workplace-based RTW-interventions, we seek to dig further into the role of the workplace by narrowing our focus to DM-practices that are part of an employer provided WPDM-programme. We have accordingly placed a clear restriction on the providers and the content of interventions included in this review, thereby excluding interventions initiated by stakeholders outside the workplace (i.e. community and healthcare-based vocational and clinical interventions directed at the workplace). In doing this, we will capture the organizationally-mediated factors of WPDM-programmes and analyse their effect on RTW outcomes.

Our systematic assessment of the studies in the rehabilitation and management literature makes it possible to shed light on a broader area of WPDM-studies than prior more clinical/epidemiological oriented reviews. Although prior reviews have been workplace-based in their approach to the literature, they have included interventions that where provided outside the workplace and did not systematically cover studies within the management literature. Another important aspect of this review is our inclusion of a broader range of study-designs and delineation of components in workplace initiated and provided DM, which makes this review unique compared to prior systematic reviews on WPDM.

Focusing on the development and synthesis of knowledge that can assist employers in their DM-efforts has several important payoffs with relevance to policy and decision-makers. Put into practice WPDM-programmes may provide responsive and sustainable organizational policies and practices that can guide “on-site” interventions, internal coordination and bridge collaboration outside the workplace. This may lead to a better use of human resources, reduce dependence on public sickness and disability benefits (sick-leave wages) and contribute to a healthier and more inclusive work-life. Furthermore it is necessary to continue to review the available literature as new research is published. This may strengthen future funding for the development of new research projects on WPDM. This review sets out to serve these purposes.

2 Objective of the review

The objective of this review is to assess the effectiveness of Workplace Disability Management Programmes promoting RTW:

- Compare WPDM-programs to no treatment, treatment as usual or alternative intervention

- If possible examine components of WPDM-programmes which appear more highly related to positive outcome. Since there is no uniform WPDM the resulting analysis will also assess the effectiveness of constituent components of WPDM, which may also have value

- Look at the existing literature and get an understanding of the research area and its development, research potentials and needed research areas.

3 Methods

3.1 CRITERIA FOR CONSIDERING STUDIES FOR THIS REVIEW

3.1.1 Types of studies

The study designs included in the review are:

- Randomised controlled trials (RCTs) including cluster randomisation and quasi randomised study designs (i.e. participants are allocated by means such as alternate allocation, person's birth date, the date of the week or month, case number or alphabetical order).

- Non randomised control study designs (quasi-experimental designs) such as controlled two group study designs, and study designs using observational data, where statistical methods such as modelling or differences in differences are used to establish a counterfactual and estimate an effect.

- We suspect that there are not many RCTs and non-randomised control study designs in the field of WPDM for RTW. To give a better sense of what is going on in the field and to capture the major studies in area of WPDM we will therefore also include single group study designs with before and after measures[1].

Single-subject designs will be excluded.

The objectives of this review are to explore both absolute and relative effects, hence eligible comparisons groups are no treatment, treatment as usual and alternative interventions.

[1] Included studies with single group before and after measures will be reported in a narrative analysis. They will not figure in any meta-analysis.

3.1.2 **Types if participants**

The following criteria serve as background for the inclusion of participants in the review:

- Employees on sick-leave with an inability to work due to physical injury, illness or mental health disorders:
    - Physical injuries may relate to different kinds of musculoskeletal disorders such as; back pain, limb problems, neck and shoulder injuries, rheumatoid arthritis, osteoarthritis, whiplash etc.
    - Mental health disorders may relate to psychiatric or psychosocial illnesses such as; depression, stress, anxiety, somatic illness, fatigue etc.
    - Other illnesses for example cancer, neurological illness, stroke, carpal tunnel syndrome and eye strain.
- Employees from the public and private sector

Unemployed persons will be excluded as well as persons with a pre-existing permanent or total impairment.

3.1.3 **Types of interventions**

This review will focus on WPDM-programmes that are:

- Characterised as an 'onsite' WPDM or RTW-programme;
- Provided by the employer or initiated by the employer in collaboration with key-players in the workplace;
- Addressing the duration or extent of an inability to work due to physical injury or mental illness;
- Implemented within the workplace setting

This definition includes only those studies where programme components are linked to a WPDM-programme, provided by the employer and put into practice at the workplace focusing on secondary prevention and the involvement of stakeholders from the work environment.

WPDM-programmes may consist of a diverse set of components. In our selection of studies the inclusion of WPDM-programmes is guided by the criteria listed in section 1.3 (pg.9-10, the components are expanded in Appendix 1). This means that we only include WPDM-programmes where at least one of the programme components addresses and modifies features of the workers actual job, work tasks, equipment, work station, work schedule or mode of interaction with key-players in the workplace (e.g. co-workers and supervisors). As long as the WPDM-programme is a structural part of the intervention (with the intention to apply the programme components to all participants in the intervention group) studies that include more components or other components than listed under section 1.3 are not excluded as long as they meet our inclusion criteria. WPDM-programmes that contain clinical components as an integrated part of the programme will only be included if:

- The programme is provided by the employer.
- The intervention is put into practice within the workplace setting

This means that other types of provider-based interventions (provided by health-care or community), that can be described as a DM or RTW programme/intervention, are excluded. Accordingly stand alone individual clinical/medical interventions, that are not part of a WPDM-programme, will be excluded, as they are not primarily initiated by the employer and thus there is minimal or no integration within the workplace.

WPDM- programme interventions will be compared with 'usual services,' other interventions, and no intervention. Due to the diversity in types of illnesses and injury that a WPDM-programme has to target, the duration and intensity of specific interventions can vary according to the specific condition and the activities needed. Accordingly there will be no minimum restrictions related to duration and intensity of the programmes. We will record exact details on duration, intensity and frequency of WPDM programmes for each included study. This information will inform and document decisions on how we will deal with expected variations regarding length and intensity of the interventions.

3.1.4 **Types of outcomes**

Successful RTW is traditionally measured as a dichotomous outcome and considered complementary to a question of first RTW. However, RTW may be seen as a time-to-event outcome as the workers RTW status or experience can be measured throughout the RTW-process (Wasiak et al. 2007; Young et al. 2005b). No sickness absence period is alike and employees may experience recurrences of sickness absence and only gradually recover from their injury or illness (Bültman et al. 2007; Krause & Lund 2004; Butler 1995). In order to capture important information about the effects of WPDM-programmes on

sickness absence duration and sustainability, RTW therefore needs to be handled as a continuous outcome (Pransky et al. 2005; Amick et al 2000b)

Primary outcomes:
First return to work, duration of return to work and days lost from work

- Return to work measured dichotomously as first return to work (This measure is relevant but treated with caution as it neglects episodic nature of work disability);

- Duration of sickness absence measured continuously via time-to-event data (e.g. periods of sickness absence followed by return to work);

- Reduction in lost days from work (e.g. defined cumulatively as the duration of all days lost from work beginning with the date of injury).

Secondary outcomes:
Modification or change of job function and job functioning

- The functional health consequences (e.g. how an employee's health affects work role functioning and work ability). Examples of validated scales used to measure functional health consequences are: *The International Classification of Functioning, Disability and Health (ICF)* (WHO 2001), *The Work Role Functioning scheme* (Amick et al. 2004) or *The Finish work-ability index* (Ilmarinen 2001).

- Return to fulltime or part-time work.

- Whether RTW is completed at the current employer (e.g. back to the same work environment as before the injury or illness) or completed in a job with a new employer.

Sustainability of return to work

- Relapse to sickness absence in the follow-up period (e.g. the number of days until recurrence of work disability or duration of recurrent episodes of sickness absence and return to work).

3.2 SEARCH METHODS FOR IDENTIFICATION OF STUDIES

Relevant studies will be identified through electronic searches of bibliographic databases, government policy databanks and internet search engines. No language or date restrictions will be applied to the searches.

3.2.1 **Electronic searches**

Biomedical Sciences Databases
MEDLINE
Embase
CINAHL
The Cochrane Library

Social Sciences and general references databases
SocINDEX
Social Services Abstracts
PsycINFO
EconLit
Business Source Elite
Safety Science and Risk
Dissertation Abstracts International (DAI)

Government policy sources

The websites of the following organisation will be searched for relevant documents:

- World Health Organisation (WHO)
- European Agency for Safety and Health (OSHA)
- European Agency for the Improvement of Living and Working Standards (Eurofond)
- International Labour Organisation (ILO)
- Organisation for Economic Co-operation and Development (OECD)
- The Danish National Centre for Social Research (SFI)
- The National Research Centre for the Working Environment (NFA)
- Institute for Work and Health (IWH)
- National Institute of Disability Management Research (NIDMAR)

- National Institute of Disability and Rehabilitation Research (NIDRR)
- National Institute for Occupational Safety and Health (NIOSH)
- Workers Compensation Research Institute (WCRI)

3.2.2 **Search terms**

The search strategy that will be used for MEDLINE is reproduced below. It will be modified, where necessary, for the other databases listed. The full details of such modification will be reported in the completed review. As non-randomised studies will be included in this review, trial filters will not be used.

1 (Disabil$ adj5 managemen$)
2 (disabil$ adj5 prevent$)
3 (health adj5 safety managemen$)
4 Safety Management/
5 (safet$ adj5 managemen$)
6 (industry$ adj5 managemen$)
7 (organi i#ation$ adj2 polic$)
8 (organi i#ation$ adj2 practice$)
9 (organi#ation$ adj2 strateg$)
10 (corporat$ adj2 program$)
11 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10
12 "back to work"
13 (rtw or "return to work")
14 ((ERSTW or Early) and Safe Return to Work)
15 rehabilitation/
16 (reemploy$ or re-employ$)
17 work retention
18 Occupational Diseases/rh, th [Rehabilitation, Therapy]
19 Rehabilitation, Vocational/
20 (industrial$ adj5 rehabili$)
21 ((occupation$ or vocation$) adj5 rehabil$)
22 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or20 or 21
23 (Transition$ adj1 work$)
24 ((modify$ adj1 duty) or (modify$ adj1 duties))
25 (injury adj1 managemen$)
26 (absence adj1 managemen$)
27 (Stay$ adj1 Work)
28 23 or 24 or 25 or 26 or 27
29 (workplace$ adj3 factor$)
30 (workplace$ adj3 cultur$)

31 (workplace$ adj3 climate$)
32 (workplace$ adj3 role$)
33 (occupational health and safet$)
34 (organi#ation$ adj3 factor$)
35 (organi#ation$ adj3 climate$)
36 (organi#ation$ adj3 cultur$)
37 (organi#ation$ adj3 role?)
38 (employer$ adj3 factor$)
39 (employer$ adj3 climate$)
40 (employer$ adj3 cultur$)
41 (employer$ adj3 role?)
42 (corporat$ adj3 factor$)
43 (corporat$ adj3 climate$)
44 (corporat$ adj3 cultur$)
45 (corporat$ adj3 role$)
46 exp Organizational Culture/
47 (employer adj3 intervent$)
48 (workplace$ adj3 base$)
49 (workplace$ adj3 level$)
50 (workplace$ adj3 intervent$)
51 ((worksite$ or work site) adj3 intervent$)
52 ((worksite$ or work site) adj3 base$)
53 (vocation$ adj3 intervent$)
54 (occupational$ adj3 intervent$)
55 on-the-job.
56 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55
57 11 or 22 or 28
58 53 and 54
59 limit 55 to humans

3.2.3 Searching other resources

Personal contacts

Personal contacts with international researchers, developers and independent investigators will be made to identify unpublished reports and ongoing studies. These contacts will include stakeholders at the Institute for Work and Health (IWH) in Canada and similar international organisations and institutes.

Cross-referencing of bibliographies

The references in reviews and primary studies will be scanned to identify new leads.

Grey Literature

Google will be used to search the web to identify potential unpublished studies. Advance search options will be used to refine the gray search strategy. OpenSIGLE will also be used to search for European grey literature (http://opensigle.inist.fr/). Copies of relevant documents will be made recording the exact URL and date of access.

Hand Searching

The following journal will be hand searched:

- International Journal of Disability Management Research
- Disability & Rehabilitation
- Journal of Occupational and Environmental Medicine
- Journal of Occupational Rehabilitation
- Work

3.3 DATA COLLECTION AND ANALYSIS

3.3.1 Selection of studies

Two reviewers (UG, MS) will independently read titles and available abstracts of reports and articles identified in the search to exclude reports that are clearly irrelevant. Citations considered relevant by at least one reviewer will be retrieved in full texts versions. If there is not enough information in the title and abstract to judge eligibility, the full text will be retrieved. At least two reviewers (UG, MS, KK) will read the full text versions to ascertain eligibility based on the selection criteria. In the first screening level (on the basis of title and abstract) a citation will only move on to the second screening level if the answer is a yes or uncertain for the following criteria; the study focus in on DM or RTW, and the study participants include employees on sick leave. In the second level (on the basis of full text) eligibility inclusion criteria is extended to the following; the program is provided or initiated by the employer, the programme is implemented (fully or partly) within the workplace and the study meets the study design inclusion criteria (see pg. xx). The inclusion coding questions for level 1 and 2 will be piloted and adjusted if required (see appendix 1 & 2). Primary investigators will be contacted to clarify study eligibility if necessary. In the event of disagreements a third reviewer and content specialist (ML) will be consulted and consensus will be sought after. Exclusion reasons for studies that otherwise might be expected to be eligible will be documented and presented in an

appendix. The overall search and screening process will be illustrated in a flow-diagram. Kappa scores with be reported to check inter-rater reliability.

3.3.2 **Data extraction and management**

At least two review authors (UG, ML, MS, KK) will independently code and extract data from the included studies. A data extraction sheet will be piloted on several studies and revised as necessary (see Appendix 3). Extracted data will be stored electronically. Disagreements will be resolved by consulting an independent reviewer with extensive content and methods expertise (TL or TF). Analysis will be conducted in RevMan5 and STATA. Data and information will be extracted on; types of employers and work settings the characteristics of participants, intervention characteristics and control conditions, research design, risk of bias and potential confounding factors, outcomes and results.

3.3.3 **Assessment of risk of bias in included studies**

We will assess the methodological quality of RCTs using the risk of bias model in the Cochrane Handbook for Systematic Reviews of Interventions (Higgins 2008). The risk of bias model's point of departure are RCTs and will therefore be adapted to accommodate confounding factors associated with non-randomised study designs included in this review. With non-randomised studies we will pay particularly attention to selection bias, such baseline differences between groups, and the potential for selective outcome reporting (Higgins 2008, p. 395).

Risk of bias assessment will be based on 5 dimensions (described below). The assessment questions with a rating of low risk, high risk, and uncertain risk of bias will be piloted and modified (see appendix 2). Review authors (at least two, UG, MS, KK) will independently assess the risk of bias for each included study based. Disagreements will be resolved by a third reviewer with content and statistical expertise (TL & TF). We will report the risk of bias assessment for each included study. This assessment will also inform sensitivity analysis (see 5.6.2 Sensitivity analysis).

Risk of Bias dimensions:

Selection or sample bias

Selection bias is understood as systematic baseline differences between groups (i.e. observable factors are not adequately accounted for) and can therefore compromise comparability between groups.

Performance bias

Performance bias refers to systematic bias and confounding related to intervention fidelity and/or exposure to factors other than the interventions and comparisons of interest that may confound outcome results. Blinding of participants and intervention delivery is not applicable due to RTW field and the nature of the intervention.

Detection bias

Detection bias is concerned with systematic differences between groups in relation to how outcomes are determined, including blinding of outcome assessors. RTW is often measured with time-to-event data. Participants who do not experience RTW before the end of the study are censored from the outcome data and if not adequately accounted for have the potential for introducing bias. Therefore censoring of participants is a potential threat, both in relation to detection and attrition bias (see below).

Attrition bias

Attrition bias concerns the completeness of sample and follow up data. This bias refers to systematic differences between drops outs and completers from a study.

Reporting bias

Reporting bias refers to both publication bias (see 5.5.3 Assessment of publication bias) and selective reporting of outcomes data and results.

Other sources of bias

We will examine other potential sources of bias once the included studies and the actual used designs and statistical analysis are in hand. The focus will be on whether study authors have reported other potential sources of bias and whether they have dealt with this adequately.

3.3.4 Measures of treatment effect

Time-to-event data, in this case time to RTW and time to RTW reoccurrence, will be analysed as log hazard ratios (HRs). The log hazard ratio is a summary statistic that allows for both censoring and time to an event (Sutton et al 2000:278). The log hazard measures the risk of event, in this the risk of return to work in the treatment group in comparison to

the control group over the duration of follow-up Therefore the individual included studies will be pool using the log hazard and variance. If log hazard ratios are not reported and dependant on available data, log hazard ratios will be computed (Parmar 1998). Log hazard rations and variance will be computed directly using the observed number of events and logrank expected number of events if available; or indirectly if the p-value for the log-rank, Mantel-Haenszel or chi-squared test if one of these is reported (Sutton et al 2000). Failing this individual participant data will be requested to calculate log hazard ratios.

Dichotomous outcomes, e.g. first RTW only, will be analyzed using relative risks (RRs) ratio with 95%.confidence intervals.

Continuous data will be converted to standardized mean differences (SMDs) with 95% confidence intervals. If means, standard deviations, and/or effect sizes are not available, methods suggested by Lipsey and Wilson (2001) will be used to calculate SMDs from e.g. F ratios, t-values, chi-squared values and correlation coefficients. Hedges' g will be used to correct for small sample size.

In relation to the specified outcome measures and their effect estimates in this review it will not be conceptually meaningful to transform and combine the different families of effect sizes, namely hazard ratios, risk ratios and standardized mean differences.

3.3.5 **Unit of analysis issues**

We will take into account the unit of analysis of the studies to determine whether individuals were randomised in groups (i.e. cluster randomised trials), whether individuals may have undergone multiple interventions at once, whether results were reported at multiple time points, and whether there were multiple treatment groups.

Cluster randomisation

In cluster randomisation statistical analysis errors can occur when the unit of allocation (e.g. workplace) is different from the unit of analysis (e.g. employees). Statistical advice will be sought (from TF) to determine whether the appropriate methods were used. When suitable cluster analysis is used, effect estimates and their standard errors will be meta-analysed (Higgins 2008). In cases where study investors have not applied appropriate analysis methods controlling for clustering, individual participant data will be requested from the primary investigators and clustering will be controlled for.

When individual participants' data is available, but there is not enough information to control for clustering effect and raw data is unobtainable, outcome data will be entered into RevMan 5/Stata and analysed separately. Thereafter sensitivity analysis will be conducted to explore the potential bias on effects of inadequately controlled cluster studies (Higgins 2008; Donner 2001).

Multiple interventions groups and multiple interventions per individuals

Multiple intervention groups (with different individuals) within a study with one control group will be pooled if appropriate and compared to the one control group. Multiple controls groups will only be pooled if appropriate. If this is not appropriate (that is, the multiple interventions and/or control groups include the same individuals) only one intervention group will be coded and compared to the control group to avoid overlapping samples. Data from studies comparing different types of interventions/comparisons will be coded and analysed separately. We will do separate analysis if and when the treatment as usual or alternative intervention comparison group includes one or more of WPDM programme components.

Multiple time points

In relation to multiple time points for outcomes measures and expected variations we will record the exact time points of follow ups and use this information to inform and document the choice of relevant and meaningful duration intervals for the analysis of outcomes.

3.3.6 Dealing with missing data and incomplete data

Missing data and attrition rates will be assessed for each of the included studies. In the case of missing data (e.g. Ns, means and standard deviations) the primary study authors will be contacted and missing data will be requested. Attrition rates and reasons for attrition will be recorded from the included studies; if information is not available authors will be contacted.

Information on intention to treat analysis (ITT) will also be recorded (see appendix risk of bias). In studies where ITT analysis was not used (that is the individual study conducted treatment on the treated (TOT) analysis, or where ITT was stated, but they actually used TOT), and on the condition that missing data can be assumed to be random and/or will not affect results, available data will be included in the meta-analysis (Higgins 2008). Sensitivity analysis will be run to examine influences on the effects in these studies.

Alternatively in cases where inadequate ITT analysis are used, and where missing data and drop outs are not random, and if missing data is not obtainable separate meta-analyses will be run.

3.3.7 **Assessment of heterogeneity**

Statistical heterogeneity in outcomes for studies included in the meta-analysis will be assessed visually (forest plots) along with the Q-statistic and p-value and I^2 (Higgins 2008). I^2 computes approximately the proportion of variation due to heterogeneity rather than sampling error.
Percentages over 75-80% may suggest heterogeneity concerns, however as Borenstein et al. (2009) notes an I^2 of 90% or greater denotes "only that most of observed variation is real, but does not imply that the effects are dispersed over a wide range (they could fall in a narrow range but be estimated precisely)". Thus interpretation of I^2 percentages will be applied with caution.

3.3.8 **Assessment of publication bias**

Funnel plots will be drawn to investigate relationships between effect size and study precision using the 'trim and fill method'. Meaningful forest plots require an adequate number of studies with diverse a range of sample sizes (Hayashino 2005; Glasziou 2001). A funnel plot analysis will be drawn if there are at least ten studies with appropriate data. Additionally if considerable in between study heterogeneity is present, funnel plots will not be drawn as the trim and fill method does not account for asymmetry for other reason outside of publication bias (Higgins 2008).

3.4 DATA SYNTHESIS

We will pool included studies where appropriate dependent on the availability of data and heterogeneity in relation to participants, interventions and outcomes. Due to the expected variation in types of workplace disability management programmes and programme components for RTW along with variations in the types of participants and reasons for absence we anticipate the use of random effects models (We will check for heterogeneity using the Q statistic and I2 with fixed effects to confirm this assumption). These expected variations will be explored in relation to influences on intervention effects where possible.

RCTs and non-RCTs will be pooled separately (incongruent non-RCTs will also be pooled separately if necessary).

As mentioned in the background section WPDM-programs is an organizational employer provided rehabilitation service. Inherent WPDM-program components therefore stand out as organisational mediated factors on RTW that come as a result of and have power because of policies and practices in place. As the common denominator of WPDM-program components is the organizational linkage our major category of analysis is organized around WPDM-programs components.

Due to variations in type of work disabilities that WPDM programmes are tailored to deal with we will also look at different types of WPDM-program targeting specific work disabilities. Included studies that e.g. focus on mental health disorders such as stress will not be pooled with studies that focus on WPMD programmes targeting musculoskeletal disorders (MSD). If a study has participants with a combination of work disabilities the predominant condition will be the deciding factor. Studies where we are unable to determine the prevailing type of work disability will be analysed separately. Dependant on the included studies in hand and ways to compose specific WPDM-programs components, we will also explore if particular programme components and/or combinations of components, such as early contact and intervention and modified work duties, are associated with positive outcomes or not.

Binary outcomes will be analysed using relative risk ratio, time-to- event outcomes will analysed using log hazard ratios. Confidence intervals of 95% for all individual study data and pooled estimates will be used.

If a study provides different continuous measures of the same outcome construct at the same point of time, an average effect size will be used where appropriate. However careful consideration will be made to evaluate if different measures of the same construct are conceptually congruent. If this is not the case, different measures for the one construct will be analysed separately. For example, self-reported measures compared to objective measures, and subscales compared to total scales measures for the same outcome will be analysed separately.

If studies report multiple measures of the same construct at different points in time, separate meta- analysis will be conducted for the different measurement points'; as mentioned previously we will record the exact time points of follow ups and use this

information to inform and document the choice of relevant and meaningful duration intervals for the analysis of outcomes.

Absolute verses relative effects will be analysed separately. Therefore studies with control groups that are no treatment or wait list controls will be analysed separately from usually services (TAU) and other interventions.

3.4.1 **Subgroup analysis, moderator analysis and investigation of heterogeneity**

Subgroups analysis will be conducted where relevant to explore possible influences on variation of treatment effect differences. Where possible this will be explored in relation to:

- Company industry (e.g. companies in the public or private sector)
- Company size
- Participant differences (e.g. job category, job function)
- The involvement of key players in the workplace (e.g. supervisors or rehabilitation professionals)
- Combinations of program components or focus on a specific component(s) (e.g. early contact and intervention and modified and modified/tailored work duties in relation to musculoskeletal work disability, or education of work supervisors for work disability related to stress)
- The level of focus in WPDM-programs, i.e. individual vs. group focused programs.
- The duration and intensity of specific WPDM-programme components
- The scope of WPDM-programs and program components compared to the phases of RTW i.e. off work, pre-return, post-return
- Companies policies in relation to RTW/disability management
- Legislation variation i.e. differences in legislation across countries

3.4.2 **Sensitivity analysis**

Sensitivity analysis will be used to examine the vigour of conclusions in relation to the quality of data and approaches to analysis. Sensitivity analysis will be used to investigate possible study design influences on intervention effects. The influence of study quality, by

running sensitivity analysis excluded low quality studies (e.g. lack of control for baseline differences, high attrition, and lack of ITT, lack of control fro censoring effects), will also be explored.

3.4.3 **Narrative analysis**

To capture the major studies and give a sense of research in the field of WPDM, we will, as previously mentioned, include single before and after studies. To make our analysis more transparent we will report these studies in a separate narrative analysis that will focus on intervention characteristics and contextual factors. The narrative analysis will contribute to enhance our understanding of WPDM-programs and specific program components included in the review and inform the discussion section.

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5 Figures

6 Sources of support

6.1 INTERNAL SOURCES

6.2 EXTERNAL SOURCES

SFI Campbell

7 Appendices

7.1 APPENDIX 1 - FIRST & SECOND LEVEL SCREENING

First level screening on the basis of titles and abstracts
Second level on the basis of full text

Reference id. no.:
Study id. no.:
Reviewer's initials:
Source:

Year of publication:
Duration of study:
Country of origin:
Author:

First Level Screening Questions (Titles and Abstracts)

1. Does the study focus on Disability Management (DM) or return to Return to Work (RTW) programme?
   Yes
   No (if no stop here and exclude)
   Uncertain

Q1 Guidance:
As DMs are often complex and multifaceted programmes in the context of this review A DM or RTW programme must have at least one of the following components

Elaboration of the potential programme components in workplace disability management/RTW-programs inclusion criteria (Protocol pg. 9).

1. Early contact and intervention

Early contact and intervention relates to communication and coordination of the RTW-

process between the sick-listed employee and the employer.

2. Workplace assessment

Workplace assessments are conducted before first return to work and are a walk through the workplace to identify possible obstacles and barriers that may hinder the sick-listed employee from re-entering the workplace

3. Workplace accommodation

Workplace accommodation relates to whether it is practical for the employer to accommodate the sick-listed employee and organize work after the employee's disability and health situation

4. Transitional work opportunities

Transitional work opportunities relates to specific job functions or work tasks that, in a transitional period, can support the employee in gradual recovery, improvement and full working proficiency

5. Access to alternative placements

Access to alternative placements relates to the provision of special or tailored job functions, whereby employees with functional limitations or work disabilities can be included at the workplace.

6. Modified/tailored work

Modified or tailored work relates to either adaption of schedules or work duties to the employee's health situation and functioning

7. RTW-coordination or case-management

RTW-coordination or case-management relates to situations where employers have established a coordinator function to support the RTW-process by coordinating information, bridging interventions and communication among health-care providers, job-consultants, employer and sick-listed employee

8. RTW-policies

RTW-policies relates to specific personnel policies that sets out the principles and procedures for dealing with sickness absence, inclusion and return-to-work

9. Active employee involvement

Active employee participation includes activities involving the sick-listed, and the rest of the employees (colleagues) in relation to the actions set in motion to promote RTW in the workplace

10. Revision of workplace roles

Revision of corporate internal roles relates to the development and adaption of responsibilities and functions in relation to sickness absence and return to work among e.g. supervisor or employee representatives

11. Joint labour-management commitment

Joint labour-management commitment relates to the collaboration between management and employees, which is often a core element for development, implementation and execution of actions and initiatives towards RTW

12. Education of workplace staff or case managers

Education and training can be directed against all or parts of a work-group and covers a wide range of initiatives within leadership and skills development (e.g. training in sick-leave conversations, handling of return to work process, collaboration with external providers)

13. Preventive strategies to avoid disability occurrence

Preventive strategies are implemented to reduce the proportion of work hazards that can contribute to work-related injury and disabilities and covers the general occupational health and safety work (e.g. accidents, safety and well-being)

14. Information system that enhances accountability, ongoing monitoring of disability cases and program evaluation

Internal information systems can help companies to record, monitor and follow up on individual illness and secure and ongoing evaluation of the RTW-practices in the workplace

15. Multidisciplinary rehabilitation services; <u>vocational</u> (e.g. job-replacement, job sharing and job training), <u>clinical</u> either psychological (e.g. cognitive or behavioural therapy, motivation or control exercise) or physical (e.g. graded activity, participatory ergonomics or work hardening).

Multi-disciplinary interventions consist of different intervention components that are offered as a comprehensive course in the return to work process. Interventions can be vocational (retraining, reduced hours / job sharing) or clinical / medical (gradual rehabilitation, ergonomic counselling, pain management)

2. Does the study population include employee on sick leave/work absence?
   Yes
   No
   Uncertain

Q2. Guidance
This includes all types of work disabilities and all types of illness and injury excepting a pre-existing permanent or total impairment disability.

The report is excluded if one or more of questions from 1 to 5 are NO.
If the answers to questions 1 to 5 are yes or uncertain the full report is retrieved for second level eligible. All uncertain questions need to be posed again on the basis of full text. If not enough information is available or it the report is unclear report authors will be contacted to clarify eligibly.

Second Level Screening Questions (Full text)

3. Is the programme provided or initiated by the employer?
   Yes
   No
   Uncertain

Q3. Guidance
Employer provided or initiated is defined as a program that has an in-house component, where the intervention has a clear linkage to the employer (e.g. workplace case management).

4. Is the program implemented within the work place setting?
   Yes
   No
   Uncertain

Q4 Guidance
The interventions implemented within the workplace setting or in combination with other settings are included. Interventions that only occur outside of the workplace (such as a clinical setting) are excluded.

5. Does the report use one of the following study designs (listed below a,b,or c):
   Yes
   No
   Uncertain
   a. Is the study a RCT (with a control group that is TAU, alterative intervention, or no intervention)?
      Yes
      No
      Uncertain
   b. Is study a non-randomised controlled study (with a control group that is TAU, alterative intervention, or no intervention)?
      Yes
      No
      Uncertain

   c. Is the study a single group before and after design?
      Yes
      No

Uncertain

7.2 APPENDIS 2 DATA EXTRACTION

Study design questions (cited pg. #):

6. **How were comparison/control groups formed?**
   a. Random assignment

   b. Other (describe and cite pg.#)

7. **If random assignment, specify design?**
   a. Individual

   c. Stratified/blocked

   d. Match pairs

   e. Cluster randomisation

   f. Other (describe)

   g. Not clear

8. **How was random assignment performed?**
   a. Computer generate

   b. Random numbers table

   c. Coin or dice

   d. Other

   e. Description unclear

   f. Not report

9. **How many separate sites were included in the study?**

10. **Was random assignment performed in the same way in all sites?**
    a. Yes

    b. No (explain)

c. Not clear

11. **How many intervention groups were there?**
    a. State number and describe

12. **How many interventions group are relevant for this review?**
    a. One

    b. More than one (state number and specify)

13. **How many different control/comparison groups were there?**

14. **How many control/comparison groups are relevant for this review?**
    a. One

    b. More than one (specify & explain)

15. **Study sample size**

N's	WPDM 1*	COMPARISON 1*	TOTAL	Pg. # & NOTES
Referred to study				
Consented				
Completed base line measures				
Randomly assigned Or non randomly allocated				
Started treatment				
Completed treatment				
Completed first measure after baseline				
Completed 1st follow up				
Completed 2nd				

follow up(add rows for as required for additional follow ups)				

* add columns for additional intervention and control/comparison groups.

Participant/sample Characteristics (cited pg. #):

16. Was participant inclusion criteria mentioned?
    a. No

    b. Yes (describe & cite pg#)

17. Was participant exclusion criteria mentioned?
    a. No

    b. Yes (describe & cite pg#)

18. **Participant Characteristics**

	WPDM*	CONTROL*	TOTAL	Pg. # & NOTES
Gender (e.g. % male)				
Age (e.g. mean)				
Socioeconomic status				
Educational background				
Profession				
Job function				
Other characteristics				

* add columns for additional intervention and control/comparison groups.

19. **Specify and describe the work disability**
    a. Injury

    b. Mental illness (e.g. Stress, anxiety, depression)

c. Musculoskeletal (e.g. Lower, shoulder, neck pain)

d. Illness (specify pg. # e.g. Autoimmune, cardio vascular, neurological)

e. Combination

20. **Were there any differences between intervention and comparison groups at baseline?**
    a. No

    b. Yes (describe differences & cite pg#)

    c. Unclear

21. **Was there any analysis of differences between completers and dropouts in the intervention group?**
    a. No

    b. Yes (describe differences & cite pg#)

    c. Unclear

22. **Was there any analysis of differences between completers and dropouts in the intervention group?**
    a. No

    b. Yes (pg. # & describe)

23. **Was intention to treat analysis used?**
    a. No

    b. Yes (pg. # & describe)

Employer characteristics (cited pg. #):

24. **I s the employer/ public or private?**

25. **Specify work sector/industry? (e.g. transport, health care, manufacturing, financial)**

26. **Specify company type? (e.g. bank, hospital)**

27. **Employer size**

a. Large (> 400)

b. Medium (≥100- 400 <)

c. Small (< 100)

WPDM Programme characteristics (cited pg. #):

28. **Specify type of WPDM-program. Is the program tailored to deal with**
    a. Musculoskeletal disorders (MSD) (List specific condition)

    b. Mental health disorders (List specific condition)

    c. Other illness (list specific condition)

29. **List and describe WPDM programme characteristics including all components in the intervention group (if more than one describe each group separately)**
    (see guidance question 1 box for more details regarding DM components)
    a. Early contact and intervention

    b. Workplace assessment

    c. Workplace accommodation

    d. Transitional work opportunities

    e. Access to alternative placements

    f. Modified/tailored work or supported employment

    g. RTW-coordination or case-management

    h. RTW-policies

    i. Active employee involvement

    j. Revision of workplace roles

    k. Joint labour-management commitment

    l. Education of workplace staff or case managers

m. Preventive strategies to avoid disability occurrence

n. Information system that enhances accountability, ongoing monitoring of disability cases and program evaluation

o. Multidisciplinary rehabilitation services; vocational (e.g. job-replacement, job sharing and job training), clinical either psychological (e.g. cognitive or behavioural therapy, motivation or control exercise) or physical (e.g. graded activity, participatory ergonomics or work hardening).

p. Other (specify)

30. **Describe the scope of each programme component in the study in relation to the phases of the RTW-process. i.e. is the program component directed at the employee while the employee is**
    a. Off work (sick-listed)

    b. Pre-return (employee's first return to work)

    c. Post-return (sustainability of work ability)

    d. Combination of more phases

31. **Record level of focus in the WPDM. Is the WPDM programme intervention**
    a. Individual based

    b. Group based

    c. Combination of both

    d. Other

    e. Not mentioned

32. **Record exact details of the duration of the WPDM intervention in hours, days, weeks**
    a. Total number of hours

    b. Total number of days

    c. Total number of weeks

    d. Total number of months

33. **Record exact details of the intensity of the WPDM intervention (i.e. contact hours, meetings, training sessions) for participants per day, week and month**
    a. Describe activity, Per day
    b. Describe activity, Per week
    c. Describe activity, Per month

34. **If any, describe methods used to ensure the quality/fidelity of the WPDM intervention**
    a. None mentioned
    b. Description

35. **Participant compliance (i.e. did the participants do what there were supposed to do?)**
    a. Not mentioned
    b. Mentioned (specify & cite pg.#)

36. **List key parties involved in the WPDM-programme/intervention and their affiliation.**
    a. Supervisors (line management)
    b. Senior Management
    c. Union representative
    d. Internal staff / technical staff
    e. Occupational therapist
    f. Physiotherapist
    g. Medical doctor
    h. Nurse
    i. RTW-coordinator/ Case-manager
    j. Other (specify)

37. **List (and give short description) types of different work-sites (i.e. specific departments) that the WPDM intervention took place in**

38. **List (and give short description) types of different workplace settings that the WPDM programme component took place in**

39. **For intervention groups at different sites were there any implementation differences between sites?**
    a. Yes (describe & cite pg.#)

    b. No

    c. Can't tell

40. **For the intervention group were there any co-interventions not related to WPDM?**
    a. Yes (describe & cite pg#)

    b. No

    c. Can't tell

41. **Describe the overall scope of the WPDM-program in relation to the phases of the RTW-process.**
    e. Off work (sick-listed)

    f. Pre-return (employee's first return to work)

    g. Post-return (sustainability of work ability)

    h. Combination of more phases

Control/comparison group

42. **Type of control/comparison group**
    a. Usual services Treatment as usual (pg. # & describe)

    b. Alternative service intervention (pg. # & describe)

    c. No intervention

Outcome measures

43. **When were data collected?**
    a. Baseline

    b. First measurement after baseline (when ? e.g. 12 weeks after baseline)

c. 1st follow up (when?)
   2st follow up (when?)
   3st follow up (when?)
   4st follow up (when?)
   Other

44. **Who collected outcome data?**
   a. Research staff

   b. Programme/intervention staff

   c. Both

   d. Other (pg # specify)

45. **Was all data collected in the same manner for WPDM program and comparison group?**
   a. Yes

   b. No (specify differences & pg. #)

   c. Were they blinded?

   d. Can't tell

OUTCOME MEASURES

Outcome (input from protocol)	Outcome measurement	Reliability & Validity (specify)	Format	Direction	Source (specify)	Blinding (outcome assessors)	Pg. # & notes
	Describe measurement		Dichotomous Continuous	Event OR High score is Positive Negative Can't tell		Yes No Can't tell	

OUT COME DATA

DICHOTOMOUS OUTCOME DATA

Enter exact p value if available

OUTCOME	TIME POINT (record exact time taken from baseline	SOURCE (specify)	VALID Ns	N W/ EVENT	% WITH EVENT	STATISTICS	Pg. # & NOTES
	•1st measure after baseline •1st follow-up • 2nd follow-up • 3rd follow-up •4th follow-up • other		WPDM Comparison	WPDM Comparison	WPDM Comparison	Log hazard ratio Log rank ration Risk ratio OR 95% CI DF P- value Mantel-Haenszel Chi2 Other Covariates (control variables)	

Repeat as needed

CONTINUOUS OUTCOME DATA

Enter change and gain scores under Statistics (Other)

OUTCOME	TIME POINT (record exact time taken from baseline	SOURCE (specify)	VALID Ns	Means	SDs	STATISTICS	Pg. # & NOTES
	•1st measure after baseline •1st follow-up • 2nd follow-up • 3rd follow-up •4th follow-up • other		WPDM	WPDM	WPDM	P t F Df ES Other Covariates	
			Comparison	Comparison	Comparison		

Repeat as need

RISK OF BIAS TABLE

Dimensions	Domains	Description	Reviewer author's decision
Selection Sample bias	Sequence generation	Describe the method used to generate the allocation sequence in sufficient detail to allow an assessment of whether it should produce comparable groups.	Was the random sequence generation adequate? (In the case of cluster randomised studies with small numbers, was stratified or pair matched randomisation used to generate cluster randomisation?) Yes No Unclear
	Allocation concealment	Describe the method used to conceal the allocation sequence in sufficient detail to determine whether intervention allocations could have been foreseen in advance of, or during, enrolment.	Was allocation adequately concealed? (For cluster RCTs where individuals recruited prior to cluster randomisation (if not was the cluster adequately concealed prior concealment)? Yes No Unclear
	Equivalent groups	Describe baselines differences between intervention and comparison groups,	Were baselines reported, checked and cases of imbalances were adequately controlled for? Yes No

			Unclear
Performance bias	Intervention fidelity and/or exposure to other confounding factors	Describe measures taken to secure intervention fidelity and/or exposure to other factors beside the intervention and comparison that may confound the results (or that a control comparison received the intervention).	Do the study reports deal with intervention fidelity or account for other confounding factors? Yes No Unclear
Detection bias	Blinding of outcome assessors *(Assessments for each main outcome or class of outcomes).*	Describe if outcome assessors were blinded. Or if outcome assessor had vested interests.	Was knowledge of the allocated intervention adequately prevented during the study? Outcome assessors were not blinded but the review authors judge that the outcome was not likely to be influenced by lack of blinding. Yes No Unclear
	Statistical analysis *(Assessment for outcomes using time to event data)*	Censoring (also related to attrition bias). Describes measures taken to account for censoring in time-to-event data. Cluster and unit of analysis issues	Censored data reported and adequately accounted for (i.e. censoring unlikely to introduce bias? (For cluster RCTs were appropriate methods used to account for clustering?) Yes No Unclear

Attrition bias	Incomplete outcome data *(Assessments for each main outcome or class of outcomes).*	Describe the completeness of the sample and follow data for each main outcome including, whether attrition and exclusions were reported /and reasons given), and if any re-inclusions in analyses performed by the review authors, including the use of ITT.	Were incomplete outcome data adequately accounted for? (For cluster RCTs Were all clusters included in the outcome data and analysis?) Yes No Unclear
Reporting bias	Selective reporting of outcome and results *(Assessments for each main outcome or class of outcomes).*	If possible check that pre-specified primary outcomes have been reported.	Are reports of the study free of suggestion of selective outcome reporting? Yes No Unclear
Other sources of bias	Other potential sources of bias	Describe whether study authors have reported additional concerns regarding other potential sources of bias and whether they were adequately accounted for.	Was the study apparently free of other problems that could put it at high risk of bias? Yes No Unclear