

The Role of Employers in Return to Work of People with Musculoskeletal Pain Disorders

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FINAL REPORT

Important Note

This evidence-based review summarises information on the role of employers in RTW of people with musculoskeletal disorders. It contains a synthesis of the best evidence available. A thorough attempt was made to find and review papers relevant to the focus of this report. This document has been prepared by staff of the ACC, Research Group within Strategy and Corporate Services. The content does not necessarily represent the official view of ACC or represent ACC policy.

Executive Summary

Background: This review explores the strength of evidence for a role of the employer in return to work (RTW) interventions and disability management activities that are aimed at assisting individuals with musculoskeletal disorders (MSD) to RTW. It also seeks to identify what the specific tasks and components of the employer role are. Key research questions were:

1. What is the evidence that the employer can play an effective role in RTW for people with MSD?
2. What is the role and what are the activities/components/tasks of the employer's role? What must the employer do or not do?
3. When should the employer intervene?

Methodology: This is a systematic review of the literature. Electronic databases were searched for studies published after 1990 and written in English, using various combinations of keyword search terms. The titles of 1653 references were retrieved and assessed for relevance. Full articles of 174 references were requested and critically appraised for quality and relevance. Quantitative studies were eligible for inclusion if they investigated the effectiveness of rehabilitation interventions with a workplace-based component. Study participants had to be suffering from MSD in the acute to sub-acute stage and not be chronic. Good quality qualitative studies were eligible for inclusion because they were an important source of information about the needs and behaviours of employers and employees in the RTW process. Evidence presented by the 22 included studies was synthesised using a best-evidence approach which enabled ratings of the strength of evidence.

Results: The 22 studies included in this review comprised four systematic reviews of quantitative literature, three high level best-evidence reports, four recent quantitative studies, one systematic review of qualitative literature, four recent qualitative studies, and two evidence-based guides for employers. The primary quantitative research studies were medium-high quality randomised controlled trials (RCT) or prospective cohorts with controls. In general, the descriptions and detailing of the employer role in the key studies was quite limited.

Evidence Statements:

1. There is **strong evidence** that employers play a key role in the RTW process, and interventions with a workplace-based component involving the employer lead to improved RTW outcomes. The magnitude of the effect is variable but improvements of two-fold are achievable, i.e. RTW can be two times faster. Refer to Section 4.2 for details.
2. There is **weak evidence** (i.e. limited and conflicting) that health outcomes (pain, function) are improved by workplace-based interventions involving the employer when compared to usual care. Refer to Section 4.2.3 for details.
3. There is **strong evidence** that the four most important tasks of the employer are:
 - Keep in contact with the injured workers and assist with an early RTW.
 - Agree on a RTW plan and RTW goals with the injured worker.
 - Offer workplace accommodation.
 - Communicate with the healthcare professionals.

Refer to Section 4.3 for details.

4. Some actions of employers may not facilitate RTW of injured workers and a response/support to address these actions may be required. These include doubting the legitimacy of the injury, creating a poor work match for the injured worker, allowing modified duties to lapse beyond the capabilities of the injured worker, and hindering communication with the other players (e.g. GP, rehabilitation professionals).
5. The precise timing of employer intervention is not entirely clear, but there is **strong evidence** that it should be within four weeks after worker absence. Some evidence suggests that employers should make initial contact within the first day or two of work absence, but this needs to consider the context of the case.

Implications for ACC:

Employer-readiness to come on board with ACC as key players in RTW of workers with MSD depends upon the following factors:

1. Awareness: employers need to be aware of the importance of their role.
2. Resources: employers need the know-how, capacity, injury management systems and resources to be able to assist.
3. Motivation/incentive: employers are more likely to assist with RTW if they are motivated.

ACC's own evidence suggests that the employer-readiness for engagement with RTW is often related to their size and to the nature of the work. Large employers are more likely to be aware of RTW philosophy, and have the resources and motivation to engage in RTW processes. Conversely, small and medium enterprises are less likely both to have an awareness of the importance of assisting workers to RTW and to have the resources to enable engagement with RTW. For those that run their business like a 'family' operation, they may have an emotional motivation to assist, but they may not be able to financially support a RTW plan for their employee. Furthermore, the nature of the work may make it particularly costly for small and medium sized businesses to offer alternative duties to their injured worker.

Therefore, any initiatives that ACC invests in to improve employer-readiness for RTW must consider the different needs of different sized businesses, and the type of work they engage in.

What is ACC currently doing?

The following sections summarise the ACC activities that engage with employers about their role in RTW, and suggest additional initiatives that ACC should consider:

Awareness, and 'Know-how' Resources:

- The Stay at Work Service, the Employment Maintenance Programme and Better@Work program each employ a third party who focuses on getting better engagement with the employer, and between the employer and other key players (client, ACC and healthcare providers).
- The Employer Injury Management Service provides a number of different services aimed at building employer capability to support stay at and return to work and

supporting ACC staff in employer engagement. (Go to the ACC Today [team page](#) for further detail of services). This Service has developed a lot of 'know-how' resources, including a [website](#) (currently being updated and will go live at the end of March 2010) with information tailored for different sized businesses, and the 'Back on Track' kit for forestry employers. The 'Back on Track' kit is now being developed to the Back on the Job programme which extends it to different industries. It will be launched via the internet and seminars this year. The team also have an email that employers can use to ask any employer injury management related question and there is a system in place for employers who request certain resources where the consultants "walk in" the resource at the time they request it as this helps ACC provide a more timely service. In the 2009/2011 business plan the Employer Injury Management Service is working on raising awareness/profile of the services to employers so that they can have access at the time they need.

- The Workplace Safety Team, Injury Prevention, engages with employers through the Prevention and Management of Discomfort, Pain and Injury program which includes some [information and interactive resources](#), including [HabitAtWork](#).
- Marketing and Communications are trialling Community Forums as a way of targeting large employers and encouraging cross-talk with other key players. The first Forum will be trialled in a Christchurch suburb and will be attended by GP's, Stay at Work providers and ACC's Director of Clinical Services.
- ACC's first point of contact with employers of an injured worker: What is the role of the case co-ordinator and case manager at the short term claim centres and branches in communicating with employers? Are their KPI's related to timing/frequency of contact with employer? Are ACC staff confident and capable in how they work with Employers?

Motivation/incentives:

The incentives that ACC currently provide to employers are:

- Product and Scheme Management are currently investigating a range of products that might provide incentives to employers.

What else could ACC do?

To ensure that ACC's business-as-usual activities are as effective as they can be, it is suggested that reviews be undertaken of the following:

- Review the content, language, and tone (or 'approach') of the internet and other resources for employers developed by Employer Injury Management and Injury Prevention for consistency with the findings of this report.
- Review the extent and nature of employer engagement with the Stay at Work Service and Better@Work program. Are there any barriers that need to be addressed?

- Review STCC and branch materials. What resources are needed? Are the KPI's appropriate? Are ACC staff confident and capable in how they work with Employers?
- Ensure research outcomes are integrated in current projects that influence employer engagement. For example, Vocational Rehabilitation Services Review, Better at Work, Product incentives.

Other initiatives to consider:

- Enhance “just-in-time” education of employers: Educate/re-educate employers at the time of an employee injury. This would be particularly useful for small and medium sized businesses. Education would focus on the employer’s role in RTW and about the resources and guidance available to them on ACC’s website. Can employers be directed to ACC's [website for employers](#) during the first contact they get from STCC or branches, and when they are subsequently contacted by ACC?
- Public awareness campaign: Raise awareness in the general public about the personal and societal benefits of staying at work, returning to work, and the role of the workplace and employers in rehabilitation.
- Incentive schemes: Review existing incentive schemes for employers, (e.g. the Workplace Safety Discount) and consider other incentives for employers that will enable them to offer alternative duties or workplace accommodations. What can be done to encourage employers to respond to injured workers in the same way regardless of whether the injury happened at work or not? There should be a focus on the cost/benefit to ACC, but also on the cost/benefit to employers. A Review is currently underway in ‘ACC’s Product Review’.

The business proposition for NZ employers to engage in RTW programs and to offer workplace accommodations is currently weak¹, because of a lack of cost/benefit data, and relies on intangible themes like ‘improving business performance’.^A [Note that the ACC Research Group is currently undertaking research with NZ businesses to establish the costs/benefits of being involved in RTW programs].

- Review ACC’s employer engagement strategy, which was last updated in March 2008. Consider whether ACC is investing sufficient resources into employer education and engagement with RTW (via Employer Injury Management, Marketing and Communications).
- Review ACC’s marketing and communication campaigns targeted at employers for consistency with the findings of this report.

^A Internationally there is a dearth of evidence about the costs/benefits of RTW programs from the employers’ perspective and the business proposition varies depending on the policies and legislation in place in each jurisdiction (Clark, 2009).

Glossary of Terms

Chronic MSD	Pain that has been experienced for more than 3 months
Injury Management (Disability Management)	Responses by the employer that occur after an injury to reduce the occurrence, severity and duration of an injury induced disability. Key responses are activities related to case monitoring, and activities related to a proactive return to work program.
MSD	Musculoskeletal disorder (also referred to as musculoskeletal pain or discomfort). In the context of this report it refers to non-specific pain and discomfort affecting the back, neck, upper limbs and lower limbs.
Multidisciplinary interventions (multidisciplinary rehabilitation program)	These terms refer to an intervention or program that involves a consultation with a physician as well as either psychological, social or vocational interventions or a combination of these.
Participatory ergonomics	Active participation and strong commitment of both workers and management in the process of identifying risk factors in the workplace and choosing the most appropriate solutions for these risks (as per Williams et al 2007)
Primary prevention	Interventions provided to healthy individuals with the aim of preventing the onset of a given injury or disease.
Psychosocial	The interaction between a person and their personal environment (which can include home and the workplace) and the influences on their behaviour. In the context of MSD, psychosocial factors can influence behavioural outcomes such as activity level, participation, productive activity and work.

RTW	Return to Work. RTW can refer to the final outcome of having returned to work, or to the process that a person undergoes to return to work. The latter can involve part time or accommodated work as well as full time work.
Secondary prevention	Interventions to stop the further development of a disease.
Sub-acute MSD	Pain that has been experienced for up to 3 months.
Work accommodations or modified work	This refers to any change to the pre-injury work that is intended to assist RTW. It can include, but is not limited to reduced hours of work, light duties, graded work exposure, modified or different work environment, alternative tasks/job.
Work disability	Refers to a person being unable to participate in their work to the same capacity as they did pre-injury.

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1 Background

This evidence-based review investigates the role of employers and the workplace in assisting the return to work (RTW) of individuals with musculoskeletal disorders (MSD). The review was undertaken to serve several purposes:

- To provide an evidence base to support updating a section of the Acute Low Back-pain Guideline (2003);
- To provide a solid evidence base which will support the development of consistent messages to ACC stakeholders: the client, employers, rehabilitation and healthcare providers, and branch network staff;
- To provide a solid evidence base which will support the ongoing development of rehabilitation services, such as the Stay at Work and Better@Work programmes, and injury management services at ACC.

Musculoskeletal disorders are the most common cause of disability in New Zealand². Of particular interest to ACC are the MSD caused by injury because they incur inherent healthcare costs and are also associated with weekly compensation costs due to long term work disability. The annual cost to ACC of healthcare and weekly compensation for musculoskeletal injuries is approximately \$2 billion per year².

The phenomenon of work disability caused by MSD is common to all western industrialised countries and so has been the focus of research over many years. There is now a body of research literature that expands our understanding of MSD and addresses ways of overcoming MSD and work disability. There is increasing awareness that psychosocial factors (personal and occupational) exert a powerful effect on musculoskeletal symptoms and their consequences, and act as obstacles to work retention and return to work³. There is also an increasing awareness that work can be therapeutic and that people with MSD who are helped to RTW enjoy better health than those who remain off work³. Indeed, a recent broadly scoped systematic review commissioned by The National Institute for Health and Clinical Excellence (NICE)

concluded that interventions with a workplace component were more likely to report successful outcomes than those that did not have a workplace component⁴.

It is unsurprising then that workers' compensation organisations in the UK, Europe, USA and in Australia and New Zealand are all currently supporting interventions and disability management activities which include a role for the employer. This review explores the strength of evidence for that role for the employer, and seeks to identify what the specific tasks and components of the employer role are.

2 Objectives

The key objective of this evidence review was to investigate what the role of the employer or workplace is in achieving good RTW outcomes for people with MSD. It addresses the following questions:

1. What is the evidence that the employer can play an effective role in RTW for people with MSD?
2. What is the role and what are the activities/components/tasks of the employer's role? What must the employer do or not do?
3. When should the employer intervene?

3 Methodology

3.1 Criteria for selecting studies for this review

Both quantitative and qualitative studies were included in this review if they met the criteria outlined below. Quantitative studies measure the effectiveness of RTW interventions and so are particularly relevant to the first research question. Qualitative studies are of interest because they shed light on the dimensions, practices and processes of RTW interventions, and are an important source of information about the needs and behaviours of key players in the RTW process. Qualitative studies are relevant to the second and third research questions.

Systematic reviews were included if the majority of participating studies met the criteria outlined below. A number of high quality reports have been published in recent years which use a 'best evidence synthesis' and these were also included in this report. They tended to have a much wider scope but were included if some of their participating studies met the inclusion criteria, and if the report in general contributed to the objective of this review.

3.1.1 Quantitative Studies

Quantitative studies (or systematic reviews thereof) were eligible for inclusion if they investigated the effectiveness of rehabilitation interventions with a workplace-based component, for individuals with MSD who had been absent from work for less than 3 months. Studies had to report RTW outcomes. Quantitative primary studies were excluded if participants had chronic MSD (greater than 3 months work absence).

Types of Studies: Randomised controlled trials (RCTs), case-controlled or cohort trials were included. Uncontrolled trials and case studies were excluded.

Publication years: A comprehensive systematic review of quantitative literature was published in 2005⁵ which covered studies published up to 2003, and other systematic reviews and best evidence reviews have been published subsequently.

Therefore a pragmatic approach was taken for this review by limiting the inclusion of primary quantitative studies to those published in 2004 or later.[†]

Target population: The target population was people with musculoskeletal non-specific pain disorders, including low back pain (LBP) and upper limb/extremity disorders (ULD), who are in acute to sub-acute stages (up to 3 months of pain and/or work absence). This review was less concerned with people with chronic pain or work disability (greater than 3 months)[‡]. Participants had to be of working age (18-65 yrs).

Interventions: Interventions included any rehabilitation intervention involving the employer or workplace; workplace based rehabilitation; multidisciplinary rehabilitation involving the employer; participatory ergonomics; therapeutic RTW. Excluded interventions are back schools, exercise classes, work-conditioning (because they are not primarily implemented in the workplace).

Comparison Group: comparison groups included usual care; single modality care without employer involvement; multimodal care without employer involvement.

Outcomes: The primary outcome of interest was any measure of RTW [e.g. time taken to RTW (either modified, reduced hours or full time); time on weekly compensation; sustained RTW]. The secondary outcome of interest was health including measures of pain, functional status, and mental health.

3.1.2 Qualitative studies

Qualitative studies were included if they were well conducted studies, as assessed using the criteria of Mays & Pope (1995)⁶, that provided insight into the tasks and requirements of employers.

[†] With the exception of four quantitative studies published prior to 2004 (Loisel et al 1997, Karjalainen et al 2003 & 2004, Arnetz et al 2003, Yassie et al 1995). Each study was cited at least twice in systematic reviews and/or best-evidence reviews and so it was considered that these were key contributing studies to the evidence base. Accordingly, the details of these studies are described in this review.

[‡] ACC has previously carried out a literature review on RTW interventions for workers with long-term disability (Ayson 2009, ACC).

Types of Studies: Interviews and focus group discussions with stakeholders of the RTW process or of workplace-based rehabilitation.

Participants: Participants were employers, supervisors or employees, and criteria were not limited to those with sub-acute injury or those with MSD.

Publication years: A comprehensive systematic review of qualitative literature was published in 2006⁷ which covered studies published up to 2003. Therefore this review only included primary qualitative studies published in 2004 or later.

3.2 Search Strategy and information sources

The following electronic databases were searched between April and June 2009: Medline, Embase, All EBM (Cochrane Database of Systematic Reviews, ACP Journal Club, DARE, CCTR, CMR, HTA, NHSEED), Amed, Cinahl, PsycInfo, Pedro, Ebsco (Business Source Premier and Business Source Complete), ABI Inform. Various websites were searched for relevant Grey literature including Institute for Work & Health, Institute for Employment Studies, International Social Security Association Research Programme, European Agency for Safety & Health at Work, RTW Knowledge. The search involved using combinations of these search terms: return to work, stay at work, workplace, employer, work accommodation, rehabilitation, musculoskeletal disease, back pain.

The search was limited to English language, and publications after 1990. Bibliographies were also hand searched for other potentially relevant studies.

3.3 Methods of the review and critical appraisal

3.3.1 Relevance Screening

From the literature search, 1653 references were retrieved from the databases and from hand searching. To determine whether a study should be included, the titles were assessed for relevance, and then abstracts of the remaining articles were assessed for inclusion eligibility. If there was any doubt as to whether the study met the eligibility criteria, the full article was retrieved and read. One hundred and seventy four full articles were requested for retrieval. After further assessment and critical appraisal, 22 studies were included in this report.

3.3.2 Critical Appraisal and Quality Evaluation

Quantitative Literature: The quantitative literature was critically appraised with the aid of checklists from the Scottish Intercollegiate Guidelines Network (SIGN)⁸. After critical appraisal, each study was assigned a ‘level of evidence’ according to criteria described by the National Institutes for Health and Clinical Excellence (NICE) (Appendix 2). Evidence tables were constructed for each included study and are presented in Appendix 1.

Qualitative Literature: The qualitative literature was critically appraised with the aid of a checklist published by Mays & Pope (1995)⁶. Levels of Evidence were assigned according to the criteria described by MacEachen et al (2006)⁷ and outlined in Appendix 3.

3.3.3 Data Extraction

Key aspects of the study design and results data were extracted from the studies and recorded in Evidence Tables. These are located in Appendix 1.

3.3.4 Evidence synthesis

This review used a best evidence synthesis approach for the reasons outlined by Franche et al 2005⁵: the nature of the research in this area is marked by highly heterogeneous study designs, type of interventions, populations sampled, units of analysis, statistical methods, and jurisdictional settings, making it impossible to do a meta-analysis. Furthermore, the majority of the reviews and reports cited in this report used a best evidence approach. The synthesis of evidence considered three aspects of the evidence: the methodological quality of each study, the quantity or number of studies and consistency of results across the studies.

Ratings for the overall strength of the synthesised evidence are reported according to the framework in Table 1, which is consistent with that used by reviews included in this report^{5 9 10}.

Table 1: Ratings for strength of evidence in the final synthesis of results

Evidence Grade	Definition
Strong	Generally consistent findings provided by multiple high quality studies, or systematic review(s) of multiple high quality studies.

Moderate	Generally consistent findings provided by fewer and/or methodologically weaker studies, or systematic review(s) of multiple high quality studies.
Weak	<u>Limited Evidence</u> – provided by a single high quality study <u>Conflicting Evidence</u> – inconsistent findings provided by multiple studies, or systematic review(s) of multiple studies.
No evidence	No high quality scientific evidence.

4 Results

4.1 Description of Studies

Twenty-two publications were included in this report. They are listed in Table 2 and briefly outlined below:

- Four systematic reviews of the quantitative literature^{5 11-13}. Refer to Section 4.2.1 and Table 3 for further details. Of the original studies that contributed to these systematic reviews, four high quality studies require a specific mention [Yassi et al (1995) and related articles¹⁴, Loisel et al (1997) and related articles¹⁵, Karjalainen et al (2003)¹⁶, Arnetz et al (2003)¹⁷] because each has been cited in at least two systematic reviews or best-evidence reviews included in this report and their findings have been particularly influential in building the evidence base for role of the employer. Refer to Section 4.2.2 and Table 5 for details. [Note that these and other studies cited in the systematic reviews were retrieved to extract precise descriptions of the activities/components/tasks of the employer role].
- Three high level reports that used a best evidence approach^{9 10 18}. Refer to Section 4.2.1 and Table 4 for details. The contributing studies to these reports were systematic reviews, original studies, other high level reports, and guidelines.
- Four original quantitative studies published since the systematic review of Franche et al (2005). Two were RCTs^{19 20} and two were cohort studies with control groups^{21 22}. Refer to Section 4.2.2 and Table 6 for details.
- One systematic review of qualitative literature⁷. Refer to Section 4.3.2 and Table 8 for details.
- Four primary qualitative studies published since the systematic review of MacEachen et al (2006)²³⁻²⁶. Refer to Section 4.3.2 and Table 8 for details.
- Two evidence-based publications that provide a guide to employers about their role in the RTW process^{27 28}. Refer to Section 4.3.3 and Table 10 for details.

The studies took place primarily in the UK and Europe, Canada. With regard to the original quantitative studies, study participants ranged in number from 113 to 632 and were in the acute to sub-acute stage of MSD (up to 3 months of pain or work absence). The most common complaint was LBP, although there were some participants with upper limb extremity disorders (ULDs), and one review focused specifically on ULDs. Although the workplace interventions were varied overall, two major studies were modifications of the Canadian Sherbrooke Model described by Loisel et al (1997)¹⁵ and so involved similar interventions. Descriptions of the specific tasks of the employer were generally light in detail. The primary outcomes reported in these studies were related to RTW, such as RTW rate or days of work absence. Secondary outcomes reported in some but not all studies were related to health and wellbeing, such as pain intensity, work functioning, quality of life.

The original qualitative studies involved the interview of either workers or employers about their experience and/or perceptions of RTW and role of employer in RTW. The number of participants in these studies ranged from 23 to 58.

Table 2: Studies and publications included in this report

Author	Title and Reference	Setting	Comment
Systematic Reviews			
Van Oostrom et al (2009) ¹¹	Workplace interventions for preventing work disability. <i>Cochrane Database of Systematic Reviews</i> 2009(2).	6 studies	Cochrane Review
Franche et al (2005) ⁵	Workplace-based return-to-work interventions: a systematic review of the quantitative literature. <i>Journal of Occupational Rehabilitation</i> 2005;15(4):607-631.	10 studies	-
Karjalainen et al (2003) ²⁹	Multidisciplinary biopsychosocial rehabilitation for subacute low-back pain among working age adults. <i>Cochrane Database of Systematic Reviews</i> 2003;Issue 2	2 studies	Cochrane Review
Krause et al (1998) ¹³	Modified Work and Return to Work: A Review of the Literature. <i>Journal of Occupational Rehabilitation</i> 1998;8:113-139.	13 studies	-
Best Evidence Reviews			
Burton et al (2009) ¹⁰	Management of work-relevant upper limb disorders: a review. <i>Occupational Medicine</i> 2009;59:44-52.	200 articles	Report for UK Health & Safety Executive
Waddell et al (2008) ⁹	Vocational Rehabilitation: What Works, For Whom, and When?: <i>Vocational Rehabilitation Task Group in association with the Industrial Injuries Advisory Council, 2008:1-308.</i>	102 articles	Report for UK Vocational Rehabilitation Task Group
McPherson et al (2009) ¹⁸	Reviews of Return to Work and Prevention of Work Disability. <i>Auckland: by AUT University for ACC, 2009:48.</i>	96 articles	Report for ACC
Quantitative literature			
Loisel et al 1997 ¹⁵ (and related publications)	A population-based, randomized clinical trial on back pain management. <i>Spine</i> 1997;22:2911-2918.	Canada	RCT; The Sherbrooke Model
Karjalainen et al (2003 and 2004) ^{16, 30}	Mini-intervention for subacute low back pain: a randomized controlled trial... including commentary by Pransky G. <i>Spine</i> 2003;28(6):533-541. Mini-intervention for subacute low back pain: two-year follow-up and modifiers of effectiveness. <i>Spine</i> 2004;29(10):1069-1076.	Finland	RCT
Arnetz et al (2003) ¹⁷	Early workplace intervention for employees with musculoskeletal-related absenteeism: a prospective controlled intervention study. <i>Journal of Occupational & Environmental Medicine</i> 2003;45(5):499-506.	Sweden	RCT
Yassi et al (1995) ¹⁴	Early intervention for back-injured nurses at a large Canadian tertiary care hospital: an evaluation of the effectiveness and cost benefits of a two-year pilot project. <i>Occupational Medicine (Oxford)</i> 1995;45(4):209-14.	Canada	Prospective cohort
Bultmann et al (2009) ²⁰	Coordinated and tailored work rehabilitation: a randomized controlled trial with economic evaluation undertaken with workers on sick leave due to musculoskeletal disorders. <i>Journal of Occupational Rehabilitation</i> 2009;19(1):81-93.	Norway	RCT; based on the Sherbrooke Model
Steenstra et al (2006) ¹⁹ & Anema et al (2007) ³¹	Economic evaluation of a multi-stage return to work program for workers on sick-leave due to low back pain. <i>Journal of Occupational Rehabilitation</i> 2006;16(4):557-78. Multidisciplinary rehabilitation for subacute low back pain: graded activity or workplace intervention or both? A randomized controlled trial. <i>Spine</i> 2007;32(3):291-8; discussion 299-300.	Netherlands	RCT; based on the Sherbrooke Model

Author	Title and Reference	Setting	Comment
Quantitative literature continued....			
Franché et al (2007) ²¹	The impact of early workplace-based return-to-work strategies on work absence duration: a 6-month longitudinal study following an occupational musculoskeletal injury. <i>Journal of Occupational & Environmental Medicine</i> 2007;49(9):960-74.	Canada	Prospective cohort
McCluskey et al (2006) ²²	The implementation of occupational health guidelines principles for reducing sickness absence due to musculoskeletal disorders. <i>Occupational Medicine (Oxford)</i> 2006;56(4):237-42.	UK	Prospective cohort
Qualitative Literature			
MacEachen et al (2006) ⁷	Workplace-based Return to Work Literature Review G. Systematic review of the qualitative literature on return to work after injury.[see an comment]. <i>Scandinavian Journal of Work, Environment & Health</i> 2006;32(4):257-69.	13 studies	Systematic Review
Holmgren & Ivanoff (2007) ²³	Supervisors' views on employer responsibility in the return to work process. A focus group study. <i>Journal of Occupational Rehabilitation</i> 2007;17(1):93-106.	Sweden	-
Soeker et al (2008) ²⁴	I'm going back to work: back injured clients' perceptions and experiences of their worker roles. <i>Work</i> 2008;30(2):161-70.	South Africa	-
Westmorland et al (2005) ²⁶	Disability management practices in Ontario workplaces: Employees' perceptions. <i>Disability and Rehabilitation: An International, Multidisciplinary Journal Vol 27(14) Jul 2005, 825-835 2005.</i>	Canada	-
Aas et al (2008) ²⁵	Leadership qualities in the return to work process: a content analysis. <i>Journal of Occupational Rehabilitation</i> 2008;18(4):335-46.	Norway	-
Evidence-based Guides for Employers			
Hanson et al (2006) ²⁷	The costs and benefits of active case management and rehabilitation for musculoskeletal disorders: <i>Prepared by Hu-tech Associates Ltd for the Health and Safety Executive, 2006.</i>	UK	Report for UK Health & Safety Executive
Kendall et al (2009) ²⁸	The Flags Think Tank. Tackling Musculoskeletal Problems: A guide for clinic and workplace identifying obstacles using the psychosocial flags framework. <i>London: The Stationary Office, 2009.</i>	UK	Synthesis of deliberations of the Flags Think-Tank

4.2 Evidence of a Role for the Employer in RTW

This section summarises the systematic reviews, best evidence reviews and quantitative literature that investigated the effectiveness of workplace-based interventions in achieving successful RTW outcomes for people in the acute to sub-acute phase MSD.

4.2.1 Systematic Reviews and Best Evidence Reviews

Both Van Oostrom et al (2009)¹¹ and Franche et al (2005)⁵ did systematic reviews of the literature to determine the effectiveness of workplace interventions compared with usual care or clinical interventions on both RTW and health outcomes for MSD. These reviews analysed some of the same primary studies and were consistent in concluding that there is quality evidence [moderate evidence according to Van Oostrom et al (2009); strong evidence according to Franche et al (2005)] to support the use of workplace interventions to improve RTW outcomes, but that these interventions do not improve health outcomes. Franche et al (2005) also analysed what components of workplace interventions are important; these findings are discussed in Section 4.3.

Similarly, the systematic review by Karjalainen et al (2003)²⁹, which focused on the effectiveness of multidisciplinary interventions, concluded that multidisciplinary interventions which include a workplace visit help patients to RTW faster. And finally, Krause et al (1998)¹³, in their review of effectiveness of modified work, concluded that modified work programs facilitate RTW for temporarily and permanently disabled workers. Refer to Table 3 for more detail about each systematic review, including lists of contributing studies.

Recent best-evidence reviews have conclusions that are consistent with the systematic reviews. Burton et al (2009)¹⁰ focused on management strategies for upper-limb disorders (ULDs) and found that whilst the evidence favours neither a biomedical nor a workplace intervention alone, there is clearly a role for the workplace and employer in RTW. Refer to Table 4 for a full list of the conclusions. Waddell et al (2008)⁹ carried out a review of what interventions achieve vocational rehabilitation for people with MSD. There is strong evidence that a common set of approaches for RTW is effective across the range of MSD, and four conclusions were presented that stated a role for the workplace. Refer to Table 4 for more detail. McPherson (2009)¹⁸ reviewed the evidence around preventing work disability for

people with LBP and similarly concluded that there is strong evidence for workplace multidisciplinary interventions and a role for the employer (refer to Table 4 for more detail).

Table 3: Systematic Reviews of Quantitative Literature

Author and Key Focus	Contributing studies	Conclusions
<p>Van Oostrom et al (2009)</p> <p>What is the effectiveness of workplace interventions compared to usual care or clinical interventions on work-related outcomes and health outcomes?</p>	<ul style="list-style-type: none"> • Anema et al 2007/Steenstra et al 2006. • Arnetz et al 2003. • Feuerstein et al 2003 • Loisel et al 1997 • Verbeek et al 2002. • (<i>Blonk et al 2006. Mental health</i>) 	<p>There is moderate-quality evidence to support the use of workplace interventions to reduce sickness absence among workers with MSD when compared to usual care.</p> <p>However, workplace interventions were not effective to improve health outcomes among workers with MSD.</p>
<p>Franche et al (2005)</p> <p>What is the effectiveness of workplace-based return-to-work interventions for workers with musculoskeletal and other pain-related conditions?</p>	<ul style="list-style-type: none"> • Loisel et al 1997. • Yassi et al 1995. • Karjalainen et al 2003/2004. • Arnetz et al 2003. • Amick et al 2000. • Hogg-Johnson et al 2003/Brooker et al 2001. • Bernacki et al 2000/Green-MacKenzie et al 1998 • Habeck et al 1998/Hunt et al 1993. • Verbeek et al 2002. • (<i>Crook et al 1998 chronic pain</i>) 	<p>Workplace-based RTW interventions can reduce disability duration, but the evidence for an impact on quality of life is much weaker.</p> <p><u>Components of workplace-based interventions</u></p> <p>Strong evidence that work disability is reduced by</p> <ul style="list-style-type: none"> • Offering work accommodations • Contact between healthcare provider and the workplace. <p>Moderate evidence that work disability is reduced by:</p> <ul style="list-style-type: none"> • Early contact (within first 3 months) with the worker by the workplace • Ergonomic worksite visits • RTW coordination
<p>Karjalainen et al (2003)</p> <p>What is the effectiveness of multidisciplinary rehabilitation for subacute low back pain among working age adults?</p>	<ul style="list-style-type: none"> • Loisel et al 1997. • Lindstrom et al 1992 a, b, c. 	<p>Moderate evidence that multidisciplinary rehabilitation, which included a workplace visit or more comprehensive occupational health care intervention, helps patients to return to work faster, results in less sick leave and alleviated subjective disability for patients with sub-acute low back pain.</p>
<p>Krause et al (1998)</p> <p>What is the effectiveness of modified work? <i>(Range of modified work-types: light duty, graded work exposure, work trial, supported employment, sheltered employment).</i></p>	<p>13 studies including:</p> <ul style="list-style-type: none"> • Loisel et al 1997. • Yassi et al 1995. <p><i>(Most studies involved back injury, but some involved brain injury and non-specified reasons for work absence).</i></p>	<p>There is evidence that modified work programs facilitate return to work for temporarily and permanently disabled workers.</p>

Table 4: Best-evidence Reviews

Author and Key Focus	Contributing studies	Conclusions
<p>Burton et al (2009)</p> <p>What are the evidence-based management strategies for work-relevant upper limb disorders (ULDs) and is a biopsychosocial approach is appropriate?</p>	<p>Best evidence synthesis of 200 articles.</p> <p>Systematic reviews and extensive narrative reviews, but individual studies were also selected for additional and detailed information.</p>	<p>The evidence on management of ULDs favours neither biomedical nor workplace interventions alone. Rather what is needed is a biopsychosocial approach, which necessitates multimodal interventions with the employer alongside the other players.</p> <p>Strong evidence that workplace psychosocial factors have consistently been found to be associated with various aspects of ULDs, including symptom expression, care seeking, sickness absence and disability.</p> <p>Moderate evidence that ergonomic work design directed at equipment or organisation has not been shown to have a significant effect on incidence and prevalence of ULDs. However, ergonomic interventions can improve worker comfort which can in principle contribute positively to a multimodal intervention.</p> <p>Limited evidence that ergonomic adjustments (mouse/keyboard design) can reduce upper limb pain in display screen workers, but insufficient evidence for equipment interventions among manufacturing workers.</p> <p>Weak evidence of a wide consensus that an integrative approach by all players, including the employer, is conceptually a fundamental requirement.</p> <p>Moderate evidence that integrative approaches can be effective for MSDs in general and probably also for ULDs; case management shows promise for getting all players on side.</p>
<p>Waddell et al (2008)</p> <p>What helps people with common health problems (musculoskeletal disorders, mental health problems, cardio-respiratory conditions) return to work?</p>	<p>Systematic reviews and extensive narrative reviews, reports and professional guidance. 102 articles used for section on MSD.</p> <p>Individual studies were only selected if they added essential additional information not covered in the reviews. Most literature was published from 2000-2007, but some key papers were sought back to 1990.</p>	<p>There were 11 evidence statements relating to musculoskeletal disorders. Those relevant to this EBH review are listed below:</p> <p>MSD1 (non scientific evidence) There are good epidemiological and clinical reasons and widespread acceptance throughout the literature that early return to work and stay at work approaches are appropriate and beneficial for most people with MSD.</p> <p>MSD2 (strong evidence) A common set of approaches for helping people return to work are effective across the range of musculoskeletal disorders/injuries (accepting that some specific diagnoses require condition-specific treatment).</p> <p>MSD4 (strong evidence) Early intervention through delivery of appropriate treatment, positive advice/reassurance about activity and work, and/or workplace accommodation is sufficient for many people with MSD. Those who do not respond in a timely manner may require more structured voc rehab interventions.</p> <p>MSD6 (moderate evidence and wide consensus) voc rehab entails a number of elements, which must take account of the individual, their health condition and their work; involvement of the workplace is crucial.</p> <p>MSD7 (strong evidence) Temporarily modified work (transitional work arrangements) can facilitate early return to work.</p> <p>MSD9 (strong evidence) Commitment and coordinated action from all the players is crucial for successful voc rehab; especially important is communication between healthcare professionals, employers and workers, which should be initiated at an early stage of absence.</p>
<p>McPherson (2009)</p> <p>Strategies for RTW, including 'preventing unnecessary work disability for people with back pain'.</p>	<p>Data from systematic reviews and RCTs.</p>	<p>Strong evidence for those with acute and subacute LBP that:</p> <p>Early contact between healthcare professionals and employers within the workplace is required to ensure appropriate work accommodations, in keeping with the individual's ability, are offered (and accepted). This is clearly linked to prevention of work disability.</p> <p>Workplace multidisciplinary interventions should be instituted for people with subacute back pain and the emphasis should not merely be on graded activity programmes.</p>

4.2.2 The primary literature: key studies and interventions

There are four original studies that were each cited by at least two of the systematic reviews and best-evidence reviews and these are briefly described here because they have been influential in building the evidence base prior to 2005, and informed the design of intervention studies published subsequent to 2005. A brief description of these studies is given below and also outlined in Table 5.

Loisel et al (1997)¹⁵ (and related publications)³²⁻³⁴: This Canadian RCT involving 234 participants evaluated a model for treatment of back pain called ‘The Sherbrooke Model’. It was designed to determine whether a comprehensive clinical and occupational intervention could reduce progression to prolonged disability originating from back pain, by reducing the time away from regular work for affected workers. The occupational intervention began after 4 weeks of work absence for back pain. It involved a visit to an occupational physician, who coordinated contact with the GP and the workplace, followed by participative ergonomics. The latter involved an ergonomist working with both the worker and the employer to establish what the true work situation was and facilitate the identification of solutions to improve the work situation. [The clinical intervention occurred after 8 weeks of work absence and involved a visit to a back pain specialist and back school. After 12 weeks absence, participants received multidisciplinary ‘functional rehabilitation therapy’]. These interventions were compared with usual care by the GP. The results of this study showed that the occupational intervention by itself was highly effective in reducing work absence, with the rate of return to regular work being 2.23 times greater than in the control group. The results were suggestive, but less clear cut, that occupational intervention can also improve functional status and pain.

Karjalainen et al (2003)¹⁶ and Karjalainen et al (2004)³⁰: This Finnish RCT involving 164 participants with sub-acute LBP investigated the impact of a mini-intervention (involving assurance to the participant of a good prognosis and advice to stay active) and the incremental effect of a worksite visit. The worksite visit was carried out by a physiotherapist to ensure the worker had adapted to new information and involved interaction with the supervisor. In this study, the worksite visit did not increase the effectiveness of the mini-intervention.

Arnetz et al (2003): This Swedish RCT involving 137 workers with acute and sub-acute MSD of the back, neck and/or shoulders compared the effectiveness of early

workplace based interventions with usual care in reducing work absence. The workplace intervention had an early RTW focus and involved an occupational therapist or ergonomist holding a semi-structured interview with the worker and a case manager within week one of recruitment. This was followed by a worksite assessment, involving the three players present at the initial interview, plus the employer, at which ergonomic improvements may be discussed and psychosocial issues may be addressed. The intervention resulted in significantly fewer sick days, particularly in the longer term; (95 total days sick leave compared with 150 days for the control group in the 6-12 month period after the intervention).

Yassi et al (1995): This Canadian prospective cohort study of nurses with back injuries compared the effectiveness of an early intervention workplace disability management program with usual care. There were 250 nurses working in the 'high risk of injury' ward, which received the intervention, and 1395 nurses working in other wards who were monitored concurrently to comprise the control group. The intervention involved a workplace disability management program consisting of early assessment, treatment and rehabilitation for injured nurses. Rehabilitation involved modified work for a maximum of seven weeks. This intervention resulted in the rates of back injuries and lost-time back injuries reducing by 23% and 43% respectively, whereas they increased on the control wards.

Table 5: Key Original Studies Contributing to Systematic Reviews and Best-evidence Reviews

Author, study design, study population	Intervention & employer role	Results
<p>Loisel et al (1997) and related subsequent studies</p> <p>RCT Absent from work with sub-acute back pain lasting from 4 wks to 3 months (range of professions)</p> <p>Intvn: n=130 Control: n=104</p>	<p>Intvn: a) Occupational intervention for 4 wks: visit to occ. Physician who coordinates contact with GP and workplace; participatory ergonomics. b) clinical intervention: at 8 wks, visit to back pain specialist visit and back school; at 12 wks, multidisciplinary 'functional rehab therapy'. Control: usual care (no occupational intervention, no clinical intervention)</p> <p><u>Role of employer:</u> Generally provide early support in the workplace; Communicate with healthcare professionals (not initiated by employer in this case) Participate in worksite evaluation and provide description of worker's tasks (participative ergonomics; refer to Loisel et al 2001) Offer work accommodation</p>	<p>Occupational intervention by itself is highly effective in reducing work absence. [rate of return to regular work was 2.23 time greater].</p> <p>Suggestive (but less clear cut) results that occupational intervention can improve functional status and pain.</p>
<p>Karjalainen et al (2003 & 2004)</p> <p>RCT Workers with low back pain causing work difficulties for 4wks to 3 mths. (range of professions)</p> <p>Intvn A(mini-intervention only): n=56 Intvn B(A + worksite visit): n=51 Control: n=57</p>	<p>Intvn: a) Mini-intervention involved GP visit, then shorter visit with senior physiatrist and a physiotherapist; assured patient of good prognosis and to stay active, and agreed a plan. b) additional worksite visit by physiotherapist: 75 min visit; ensure worker had adapted to new information; supervisor involved, as well as company healthcare professionals, co-operation encouraged. Control: usual care with GP</p> <p><u>Role of employer:</u> Not well described.</p>	<p>The worksite visit did not increase the effectiveness of intervention A.</p> <p>Intervention A decreased the number of days on sick leave, but did not alter pain, perceived disability or quality of life.</p>
<p>Arnetz et al (2003)</p> <p>RCT Workers with first or recurrent MSD of back, neck and shoulders; acute-sub-acute stage (4% had joint disorders) (majority blue collar workers)</p> <p>Intvn: n=65 Control: n=72</p>	<p>Intvn: Early RTW focus; Within wk 1, a semistructured interview with worker, case manager and occ. therapist/ergonomist. Then a worksite assessment with worker, employer, case manager, occ. therapist/ergonomist; develop rehab plan – ergonomic improvements may be introduced; psychosocial issues may be addressed. Control: usual care; no semistructured interview, no worksite visit or improvement offered</p> <p><u>Role of employer:</u> Enable and engage with worksite visit Introduce ergonomic improvements</p>	<p>The early RTW focus and worksite visit resulted in significantly fewer sick days, particularly in the longer term, 6-12 months (95 days c.f. 150 days for control)</p> <p>Impact of employer role not clear.</p>
<p>Yassi et al (1995) and related articles by Yassi and Cooper et al.</p> <p>Prospective cohort Nurses with back injuries on high-risk wards. (control group nurses worked on non high-risk wards)</p> <p>Intvn: n=250 Control: n=1395</p>	<p>Intvn: Workplace disability management programme of early assessment, treatment and rehab. Rehabilitation was through modified work (max of 7 wks), and if remaining off work, a graded programme of work hardening to improve strength and endurance. Delivered via a multidisciplinary team. Control: Usual care</p> <p><u>Role of employer:</u> Provided early intervention and assessment Offered modified work Facilitated weekly monitoring of progress by occ. therapist.</p>	<p>Rates of back injuries, and lost-time back injuries reduced by 23% and 43% respectively (whereas they increased on control wards)</p>

Subsequent to the Franche et al (2005) systematic review there have been four quantitative studies published that meet the inclusion criteria for this review, including two European studies that have adapted the Canadian Sherbrooke Model used by Loisel et al in 1997¹⁵. A brief description of these studies is given below and also outlined in Table 6.

Bültmann et al (2009)²⁰, high quality study: This Danish RCT involving 113 workers with sub-acute LBP or MSD compared a co-ordinated tailored work rehabilitation intervention based on the Sherbrooke Model with conventional case management. The intervention involved multidisciplinary assessment of disability and functioning, and the identification of RTW barriers; this required both the worker and the supervisor to participate in round-table discussions. Tailored RTW plans involving workplace accommodations were developed and implemented. This intervention resulted in significantly reduced cumulative sickness hours over the long term (6-12 mths) (190 hours for intervention group compared to 411 hours in the control group), but not in the short term (0-6 mths). There was also a trend towards a better RTW rate, and improved pain and function outcomes for the intervention group compared to the control group, but these were not statistically significant. A limitation of this study was a relatively small sample size.

Steenstra et al (2006)¹⁹ and Anema et al (2007)³¹, high quality study: This Dutch RCT involving 196 workers on sick leave with sub-acute LBP compared a workplace intervention, which was a modification of the Canadian Sherbrooke Model, with usual care. The workplace intervention involved a multidisciplinary workplace assessment and round-table discussions requiring both the employer and worker. Workers were given an offer of a workplace accommodation. This was followed at by a clinical intervention of graded activity for workers still absent from work at 8 weeks. The workplace intervention was successful on return to work; [hazard ratio = 1.7; 95% CI, 1.2-2.3; time until RTW was reduced to a median of 77 days compared with 104 days in the control group]. Functional status and pain intensity improved more in patients who received the workplace-based intervention, however this effect was not statistically significant. The clinical intervention had no positive effect, but it is noted that compliance was poor.

Franche et al (2007)²¹, medium-high quality study: This Canadian prospective cohort study involved 632 workers with sub-acute back pain and/or MSD who were

recruited from administrative data of the Ontario Workplace Safety & Insurance Board (WSIB). The study analysed the relationship between early RTW strategies (at 1 month) and work absence duration by using data obtained from interviews at 1 and 6 months, and from administrative data of the WSIB. The statistical analysis used 12 statistical models to determine which strategies were most related to good RTW outcomes. Significant predictors of shorter work absence were: a) work accommodation and acceptance, and b) advice from health care provider to the workplace on re-injury prevention, and c) an ergonomic worksite visit.

McCluskey et al (2006)²², medium quality study: This UK-based prospective cohort study involved workers on sick leave due to MSD of the back, neck and upper limbs, who worked for a large pharmaceutical company. The intervention and control groups were drawn from two and three manufacturing sites of the company respectively. The study compared the effectiveness of an early psychosocial intervention, which included a psychosocial assessment, modified work to facilitate RTW for 2 weeks, and liaison of the workplace-based occupational health nurse with team leaders to clarify job demands and facilitate work modifications. Workers at the control sites only met with an occupational health nurse upon RTW, or were contacted after being absent for a long period of time. In the final analysis, only data from one of the intervention sites was used because implementation of the intervention in the other site was very poor. The mean RTW was 4.3 days shorter than at the control site ($p=0.009$), and future work absence was approximately half that of controls but the difference (12 days) was not statistically significant. Therefore the results are suggestive, rather than conclusive, that a workplace-based early intervention addressing psychosocial obstacles to recovery can be effective for reducing absence due to MSD.

Table 6: Original Quantitative Literature subsequent to review by Franche et al (2005)

Author, study design, study population	Intervention & employer role	Results
<p>Bultmann et al 2009</p> <p>RCT; EG: 1-, high risk of bias (under powered, high dropout in control)</p> <p>Workers on sick leave 4-12 wks; LBP or MSD</p> <p>Intvn: n=66 Control: n=47</p>	<p><u>Intvn:</u> multidisciplinary assessment of disability and functioning, ID of RTW barriers; develop & implement coordinated, tailored RTW. Role of employer was significantly greater than in control group. Role of employer: Supervisor participate in roundtable discussions; Support/help from supervisor; Offer workplace accommodations/job modifications</p> <p><u>Control:</u> conventional case management; follow assessment of cases within 8 wks, based on medical, social and vocational information; may or may not involve interview with case manager. Role of employer: varied</p>	<p>Suggestive evidence that intervention, which involved greater role for employer, is effective compared to conventional case management</p> <p><u>Sickness absence:</u> Long term cumulative sickness hrs were significantly reduced in Intvn group: [0-3, 3-6 months: no sig. dif.] 6-12 months: 190 hrs (c.f. 411 hrs in control) 0-12 months: 656 hrs (c.f. 997 hrs in control).</p> <p><u>RTW:</u> RTW at 3, 6, 12 months in the Intvn gp was 45, 69 and 78%, (c.f. 37, 48 and 62% in control gp).</p> <p><u>Pain and Function:</u> Pain intensity decreased, and function increased for both groups. No sig. diff between gps except 3 mth pain.</p>
<p>Steenstra et al 2006 and Anema et al 2007</p> <p>RCT; EG: 1+ for workplace intervention</p> <p>Workers on sick leave 2-6 wks; LBP without specific underlying cause.</p> <p>Intvn: n=96 Control: n=100 Variety of professions</p>	<p><u>Intvn:</u> a) Workplace intervention for approx 4 wks: work assessment and work modification based on multidisciplinary assessment. b) At 8 wks, a clinical intervention of graded activity (poor compliance & referral) for randomised half of Intvn grp. Role of Employer: Supervisor participate in roundtable discussions; Offer workplace accommodations/job modifications</p> <p><u>Control:</u> a) Usual care provided by occupational physician; reassurance, advice to stay active; workplace interventions optional. Clinical intervention recommended after 12 wks leave. b) At 8 wks, clinical intervention of graded activity (poor compliance & referral) for randomised half of control grp.</p>	<p>Workplace intervention was effective for lasting RTW (12 mth follow-up); 77 days until RTW c.f. 104 days for control gp; Hazard ratio = 1.7; 95% CI, 1.2-2.3; p=0.002</p> <p>Clinical intervention (graded activity) had no positive effect (but note that compliance was poor).</p> <p>None of the interventions had significantly improved pain and function outcomes compared to usual care.</p>
<p>Franche et al 2007</p> <p>Prospective cohort study. EG: 2+</p> <p>Participants had lost-time work-related back pain or MSD. Min. absence: 5 days within first 14 days post injury.</p> <p>N=632, recruited from admin data of Ontario WSIB.</p>	<p>Participants were interviewed at 1 and 6 mths post injury; they provided information about RTW experience, duration of work absence, workplace, healthcare provider, insurer, and physical and mental health.</p> <p>Analysis used interview data and administrative data from WSIB.</p>	<p>Significant predictors or shorter work absence duration were:</p> <p>Work accommodation offer and acceptance (p<0.001)</p> <p>Advice from health care provider to the workplace on re-injury prevention (p<0.01-0.001)</p> <p>An ergonomic worksite visit (p<0.05)</p>
<p>McCluskey et al 2006</p> <p>A prospective cohort study. EG: 2-</p> <p>Manufacturing workers on sick leave due to MSD <u>Two Intvn sites:</u> n=1435 Number on leave, site E1 = 81 <u>Three Control sites:</u> n=1483 Number on leave = 214</p>	<p><u>Intvn:</u> Workplace occupational health nurses delivered intervention using a case-management approach over a 4 week period. Intervention components: Psychosocial assessment; Modified work to facilitate RTW for max of 2 wks, then referral to GP or physio; Liaison with other players, e.g. team leaders to clarify job demands and facilitate work modifications. Role of Employer: Early contact from workplace (via occ. Health nurse in this case) Offer modified work. Communication between supervisor and healthcare (via the occ health nurse in this case)</p> <p><u>Control:</u> Workers would only see occupational health nurse on RTW, or were contacted after being absent for a long period of time.</p>	<p>Suggestive evidence that a workplace-based early intervention addressing psychosocial obstacles to recovery can be effective for reducing absence due to MSD.</p> <p>Mean RTW was 4.3 days shorter than at control site (p=0.009) Future absence was approx. half that of controls, but difference (12 days) was not sig. diff.</p> <p>Implementation of the intervention was hampered by absence-management procedures at one site, which led to the conclusion that: Absence-management procedures at the workplace are required to ensure early intervention occurs.</p>

EG = Evidence Grade (refer to Appendix 3)
WSIB = Workplace Safety & Insurance Board

4.2.3 What does the evidence say?

RTW Outcomes: Of the studies published subsequent to the Franche et al (2005)⁵ systematic review, Bultmann et al (2009)²⁰, Steenstra et al (2006)¹⁹ & Anema et al (2007)³¹, and Franche et al (2007)²¹ each presented good evidence that a workplace-based intervention results in better RTW outcomes. The fourth study, by McCluskey et al (2006)²², is positive but less convincing. A synthesis of these recent results and the trial results^{14 15 17 30} reviewed in systematic and best-evidence reviews^{5 9-11 13 29} leads to the conclusion that there is strong evidence of workplace-based interventions resulting in better RTW outcomes [faster RTW and fewer work-absence days in the long term (6-12 months)]. This can be extrapolated to conclude the following:

- ***There is strong evidence that the employer plays a key role in RTW of people with MSD.***

Health outcomes: The trial by Steenstra et al (2006)¹⁹ & Anema et al (2007)³¹ and Bultmann et al (2009)²⁰ were the only one of the four recent studies that measured pain and function outcomes. The authors concluded that although there was a trend toward improved health outcomes as a result of workplace-based interventions, there was no statistically significant improvement. A synthesis of these findings and the conclusions of systematic and best-evidence reviews^{5 9-11 13 29} leads to the conclusion that ***there is weak evidence (because it is both limited and conflicting) that workplace-based interventions improve health outcomes.***

4.3 Components of the Employer Role

Having established that there is strong evidence that employers play a key role in the RTW of people with MSD, this section focuses on what the employer role entails; i.e. the activities, tasks and components of the employer role. The evidence that underpins this section comes from both the quantitative literature already summarised in Section 6.2, the qualitative literature, and from evidence-based guides.

4.3.1 The Quantitative Literature

In general the tasks of employers in RTW are not described in detail in the quantitative literature. However, Franche et al (2005) identified five components of successful workplace-based interventions in their synthesis of the evidence: an offer of work accommodations, contact between healthcare provider and the workplace, early contact with the worker by the workplace, ergonomic worksite visits, presence of a RTW co-ordinator. The first four of these components involve the employer/workplace directly. As part of the evidence synthesis the authors used the association of each component with RTW outcomes to establish the strength of evidence for each component and these are presented below in Table 7:

Table 7: Components of RTW interventions identified by Franche et al (2005)⁵

Components of RTW interventions	Strength of evidence
Offer of work accommodation	Strong
Contact between healthcare provider and the workplace	Strong
Early contact (within first 3 months) with the worker by the workplace	Moderate
Ergonomic worksite visits	Moderate
RTW coordination	Moderate

The results of all four recent quantitative studies^{19-22 31} give further weight to the synthesis by Franche et al (2005)⁵, strongly supporting the importance of contact between the healthcare provider and the workplace, and offer of workplace accommodation. The 2007 study by Franche et al²¹ augmented these conclusions by showing that acceptance of the workplace accommodation is particularly important, and presented weak evidence that ergonomic worksite visits are linked to shorter duration of work absence. However, this cohort study failed to find any significant

relationship between RTW outcomes and either ‘early contact with employer’ or ‘presence of a RTW co-ordinator’.

Additional detail described in the quantitative studies included:

- The process of determining a suitable work accommodation offer involved round-table discussions with the employer or supervisor, the worker, and a facilitator (a vocational rehabilitation expert/ergonomist and/or a case manager) in two studies^{19 20 31}.
- Support and help from the supervisor was required in the Bultmann et al (2009)²⁰ study.
- For the management of ULDs, ergonomic adjustments to mouse and keyboard can reduce upper limb pain in display screen workers¹⁰. It is an employer responsibility to provide these resources.

4.3.2 The Qualitative Literature

The qualitative literature provides more detail about what is required of the employer in RTW. The next section summarises the findings of one systematic review of qualitative studies, and four qualitative studies published after the systematic review.

MacEachen et al (2006)⁷ included 13 studies in a systematic review of qualitative literature which was undertaken to better understand the dimensions, processes and practices of RTW. The review investigated, among other things, how key players in RTW contribute to optimal RTW practices. The contributing studies were done in Canada, USA, Australia and Sweden, and primarily involved structured or semi-structured interviews and focus group discussions with workers and employers/supervisors. A minority of studies used mixed methods, including the study by Habeck et al (1998)³⁵ which proposed a framework for injury management policies and procedures (see Section 6.4 ‘Other Information’, for more commentary on the work of Habeck et al (1998) and injury management frameworks). The focus of the contributing studies was on the perspectives and/or experiences of the key stakeholders about effective RTW and rehabilitation. MacEachen et al (2006) identified the following key components of the employer’s role:

- One of the most central elements in achieving successful RTW is building good-will and trust between the employer and employee.
- Establish contact with the worker between the time of injury and RTW.

However it was noted that the timing and approach needs to consider the context of each case; in particular early contact can be unhelpful if the worker had performance or pre-injury problems with the workplace, and can be problematic if the worker perceives it to be about obligation rather than being care-oriented. Conversely, early contact works well if it is genuinely care-orientated and there are no problems with the workplace relations; it reminds the worker they are not forgotten.

- Communicate with physicians.
- Offer modified work that is tailored to the workers social and physical needs.

In particular the employer needs to be aware that the social environment at work (e.g. negative attitudes and resentment of co-workers) can impact the RTW process.

- The supervisor has a role in day-to-day social relations of RTW.

Be an advocate of the legitimacy of the worker's condition and restrictions, validate the injury, and smooth difficult workplace relations.

- The supervisor has a role to play in maintaining the accommodation of the physical environment (amidst changing production conditions).

There were four qualitative studies published after the MacEachen et al (2006)⁷ review which met inclusion criteria for this report. They explored the perceptions and experiences of employers and workers about RTW via focus group discussions and interviews. The findings of three of the studies^{23 24 26} are very consistent with the conclusions of the systematic review⁷, as demonstrated in Table 9, and provide some additional insight into key tasks of the employer in RTW. The fourth study by Aas et al (2008) was unable to produce consensus conclusions²⁵, other than to say that the leadership styles preferred by supervisors and workers seemed to be contradictory. A brief description of these four recent studies is provided in the text below. Refer to

Table 8 to view the specific tasks and roles of employers that were identified in these studies.

Table 8: Qualitative Literature - Insight and Context of Components of the Employer Role

Author, key focus, and source of information	Activities / Components / Tasks of the Employer’s Role
<p>MacEachen et al 2006</p> <p>A systematic review of 13 qualitative studies</p> <p>What are the social and organisational dimensions of workplace-based RTW? What are the challenges for workers, employers and healthcare providers in the RTW process? How can key players in RTW contribute to optimal RTW practices?</p>	<p>Build good-will and trust with the employee. This is central to successful RTW arrangements.</p> <p>Establish contact with the worker between the time of injury and RTW;</p> <ul style="list-style-type: none"> • timing and approach needs to consider the context of each case. [early contact unhelpful if worker had performance or pre-injury problems with workplace; can be problematic if worker perceives it to be about obligation rather than care-oriented; works well if genuinely care-orientated and no problems with workplace relations, reminds worker they are not forgotten] <p>Communicate with physicians</p> <p>Offer modified work that is tailored to the workers social and physical needs (be aware that the social environment at work can impact the RTW process; beware of negative attitudes and resentment of co-workers)</p> <p>Supervisor has role in day-to-day social relations of RTW: be an advocate of the legitimacy of the worker’s condition and restrictions, validate the injury, and smooth difficult workplace relations.</p> <p>Supervisor has role to play in maintaining the accommodation of the physical environment (amidst changing production conditions)</p>
<p>Holmgren & Ivanoff 2007</p> <p>Focus group discussions involving 23 supervisors (87% public sector, 74% women) experienced in managing sick-listed employees.</p> <p>Explored supervisor’s views on employer responsibility in the RTW process and factors influencing the support of employees absent from work.</p>	<p>Employer needs to create confidence (show respect and have trust in sick worker). Do this by regular contact b/w worker and supervisor, and worker and workplace.</p> <p>Supervisor needs to be supportive: understand the total situation (work + private life), create supportive atmosphere amongst colleagues.</p> <p>Agree on a rehab plan (make demands).</p> <p>Intervene early - to prevent motivation of worker to deteriorate.</p> <p>Collaborate and communicate (with all parties involved).</p> <p>Encourage workmates to be supportive.</p>
<p>Soeker et al 2008</p> <p>Semi-structured focus groups with 26 participants of varied occupational backgrounds</p> <p>What are worker perceptions and experiences of challenges they face when adapting to RTW? What are the barriers and facilitators to RTW?</p>	<p>What employer should not do (barriers to RTW):</p> <ul style="list-style-type: none"> • Don’t doubt the legitimacy of the injury • Don’t create a poor work match for the injured worker • Don’t hinder communication with other players (e.g. GP, rehab professionals) <p>What employer should do (facilitators to RTW):</p> <ul style="list-style-type: none"> • Utilise injury management strategies • Create a positive work culture • Offer meaningful and satisfactory work accommodations
<p>Aas et al 2008</p> <p>Semi-structured face-to-face interviews with 30 workers and their 28 supervisors from 19 companies</p> <p>What are the leadership qualities that are valued in the RTW process of employees?</p>	<p>There was a lack of consensus about leadership qualities valued in RTW processes. Supervisors and workers value different leadership styles in RTW.</p> <p>The most valued leadership type for workers was “Encourager” (motivating, inspiring, generous, positive, pleased, available, humoristic, fair, patient, encouraging), but this was the least valued leadership style for supervisors.</p>
<p>Westmorland et al 2005</p> <p>Focus group interviews and individual interviews with 58 participants</p> <p>What are employee’s perceptions about disability management at their workplaces</p>	<p>Barriers to RTW:</p> <ul style="list-style-type: none"> • No provision of modified duties; a lapse of modified duties beyond the capabilities of the injured employee • No communication from supervisors; makes worker feel devalued. • No discussion of work/retraining options for employee; makes worker feel devalued. <p>Facilitators to RTW:</p> <ul style="list-style-type: none"> • Involve the injured worker in accommodation process; i.e. respect employees’ opinion. • Be supportive & communicative; (employee feels valued and wanted); hold round table discussions with all players in RTW. • Provide options to employee to be productive, even if it means retraining.

Holmgren & Ivanoff (2007)²³: This Swedish study explored the views of 23 supervisors on employer responsibility in the RTW process using focus groups.

Soeker et al (2008)²⁴: This South African study explored the perceptions and experiences of 26 workers using semi-structured focus groups and focused the analysis on the barriers and facilitators to RTW.

Westmorland et al (2005)²⁶: This Canadian study considered worker perceptions about disability management at their workplaces. Data was collected using focus group and individual interviews with 58 participants. The analysis included a focus on employer-related barriers and facilitators to RTW.

Aas et al (2008)²⁵: This Norwegian study sought to establish what leadership qualities are valued in the RTW process by interviewing 30 workers and their 28 supervisors. The descriptions were diverse and there was a lack of consensus about which leadership qualities were valued.

Table 9: Alignment of results from recent qualitative studies with conclusions of the systematic review by MacEachen et al (2006)⁷

Study	Tasks/components of Employer role identified by MacEachen et al (2006)						Other tasks of employer
	Goodwill and trust	Contact between worker and employer	Communication with GP	Offer modified work tailored to needs	Manage day to day social relations at work	Maintain accommodation of physical environment	
MacEachen et al (2006) (High quality)							
Holmgren & Ivanoff (2007) (High Quality)	x	X (early)	x	x	x		Be supportive Agree on a rehab plan/make demands
Soeker et al (2008) (High quality)	x		x	x	x		Use injury management strategies
Westmorland et al (2005) (High quality)	x	x	x	x		x	Be supportive Involve injured worker in accommodation process Hold round-table discussions with all players
Aas et al (2008) (medium quality)	No consensus. Preferred leadership style of worker and supervisor are contradictory						'Encourager' was favourite of worker, least favourite of supervisors. 'Responsibility maker' was favourite of supervisor, least favourite of workers.

4.3.3 Evidence-based Guides

The third source of evidence about the tasks and components of the employer role is from ‘guides for employers’ by Hanson et al (2006)²⁷ and Kendall et al (2009)²⁸. These guides are both based on best-evidence, including evidence sources already mentioned and reviewed in this report. Hanson et al (2006)²⁷ produced a comprehensive best evidence review for the UK Health and Safety Executive about case management for MSD. In addition to reviewing the literature, the authors also consulted widely with stakeholders (people with MSD and healthcare professionals). An output from their synthesis of evidence was a model for cost-effective management of MSD in the workplace, entitled “Staying Active: A guide for employers on case management for musculoskeletal disorders”. Kendall et al (2009)²⁸ produced a guide entitled “Tackling Musculoskeletal Problems: a guide for clinic and workplace; identifying obstacles using the psychosocial flags framework”. This guide resulted from a synthesis of evidence from comprehensive best-evidence reviews^{3 9 10 27 36}, and deliberations at an international Flags Think-Tank involving 21 experts in the psychosocial aspects of MSD.

The components of the employer role that are common to both guides are:

- Keep in contact with the injured worker and assist an early RTW
- Agree on a RTW plan, and RTW goals
- Address obstacles to RTW
- Offer work accommodation (i.e. ensure the rehabilitation is based in the workplace)
- Monitor and review progress.

Kendall et al (2009)²⁸ also identified the need for employers to work with other key players. Refer to Table 10 for further details of the tasks and components of the employer’s role in RTW recommended in these employer’s guides.

Table 10: Evidence-based Guides that describe the Activities, Components and Tasks of the Employer Role in RTW

Author and key focus	Source of information	Activities / Components / Tasks of the Employer’s Role
<p>Hanson et al 2006</p> <p>This work included a model for managing workers with MSD. It was based on evidence and assessed for its acceptability to stakeholders.</p>	<p>A best evidence literature review covered published literature and grey literature.</p> <p>Information was gathered from consultation with MSD sufferers, healthcare and rehabilitation professionals, and employers and other companies who provide rehabilitation programmes and active case management.</p>	<p>A guide for employers on case management for MSD was produced and advocated the following roles:</p> <ul style="list-style-type: none"> • Keep in contact with the employee • Agree goals for a RTW plan • Address obstacles to RTW • Ensure that the employees rehabilitation is based in the workplace • Monitor and review the individual's progress against the RTW plan and make necessary changes
<p>Kendall et al 2009</p> <p>Provides a problem solving approach to tackling MSD, setting out what steps need to be taken, by who and when.</p> <p>The guide is for key players in RTW: employers, clinicians, occupational health and case managers.</p>	<p>The scientific background was an international Flags Think-Tank, involving 21 experts in the psychosocial aspects of MSD.</p> <p>This is an evidence-based guide that draws from the Think-tank deliberations and the following publications:</p> <p>Waddell et al 2008 Burton et al 2009 Hanson et al 2006 Waddell & Burton 2006 Shaw et al 2009 (blue flags)</p>	<p>Assist an early RTW:</p> <ul style="list-style-type: none"> • Make contact within a day or two • Tell worker the workplace will be supportive • Point out the RTW buddy • Ask worker to come in to work to sort out the return plan <p>Make a plan of action:</p> <ul style="list-style-type: none"> • Set a time for a RTW; • List can-do tasks not just can't do. <p>Identify & work to overcome obstacles that will get in the way of early RTW:</p> <ul style="list-style-type: none"> • Particularly identify workplace factors, and consider personal factors, context factors • List who needs to tackle them. • Figure out steps needed to overcome the obstacles. • Set a timeline • Appoint someone to act as a support buddy/case manager <p>Offer work accommodation:</p> <ul style="list-style-type: none"> • Assess the job and offer modified work for a fixed period. • Allow graduated RTW plans. <p>Monitor progress and revise plan if any setbacks.</p> <p>Work with other players (doctors, health and safety reps etc):</p> <ul style="list-style-type: none"> • Ask the doctor what the worker can do; • Get worker permission to talk with the doctor - use a confidentiality waiver (explicit written permission for selected people to talk freely with the doctor/therapist).

4.3.4 Summary – a synthesis of evidence about tasks, activities, components of the employer’s role

The information about the tasks, activities and components of the employer was synthesised with the aid of Table 11 which tabulates the following: descriptions of employer tasks and activities in workplace interventions (information extracted from the quantitative studies and reviews), findings of the qualitative studies, conclusions of the systematic and best-evidence reviews, and recommendations published in evidence-based employer’s guides.

Based on this analysis, the four most important components of the employer role:

1. Keep in contact with the employee
2. Participate in worksite visits/assessments (carried out by vocational rehabilitation specialists)
3. Offer workplace accommodation
4. Communicate with the healthcare professionals

Other components of the employer’s role that were identified in multiple studies are: engage in round-table discussion, address obstacles to RTW, and agree on a RTW plan. Many of these components are inter-related, and essentially state how to achieve success in components 2 and 3 above.

The remainder of the components also state how to achieve success in the four key aspects of the employer role, and give context as to why they are important, e.g. keep in contact with they employee because it builds good-will and trust, which was identified in the qualitative literature as a vital element for achieving successful RTW.

There is sufficient evidence to suggest that all of the tasks, activities and components listed in Table 11 are of relevance to the employer’s role in RTW, albeit to varying degrees of priority and importance.

Table 11: Analysis of the components of the Employer role reported in the 22 studies included in this review

Components of Employer role	Systematic Review and Best-evidence Review						Quantitative Studies						Qualitative Studies			Guides		Strength of Evidence					
	Van Oostrom et al 2009	Franche et al 2005	Karjalainen et al 2003	Krause et al 1998	Burton et al 2009	Waddell et al 2008	McPherson 2009	Loisel et al 1997	Karjalainen et al 2003,	Arnetz et al 2003	Yassi et al 1995	Bültmann et al 2009	Steenstra/Anema 2006,	Franche et al 2007	McCluskey et al 2006	MacEachen et al 2006	Holmgren & Ivanoff 2007		Soeker et al 2008	Aas et al 2008	Westmorland et al 2005	Hanson et al 2006	Kendall et al 2009
Keep in contact with employee	x						x	x	x	x	x	x	x	x	x	x	x		x	x	x	Strong	
• Early contact	x						x		x					x		x						x	
• Build good-will & trust															x	x	x						
• Consider timing & approach															x								
• Be supportive							x				x			x	x	x			x			x	
Participate in worksite visit/evaluation	x	x					x	x		x	x	x											Strong
• Round-table discussions with key players								x		x	x								x				
• Ergonomic focus	x				x		x	x					x										
• Provide description of worker's tasks							x																
Offer workplace accommodation	x	x		x		x	x		x	x	x	x	x	x	x		x		x	x	x		Strong
• Acceptance of offer																							
• Tailored to social & physical needs															x		x		x				
• Maintain provision of modifications (avoid lapse to original duties)															x				x				
Contact between healthcare and workplace (information exchange)	x					x	x	x		x	x	x	x	x	x	x	x					x	Strong
• Clarify job demands							x																
• Confidentiality waiver. Ask doctor what worker can do.																							x
Agree on a RTW plan; establish goals									x		x	x					x				x	x	
• Monitor progress and revise plan																					x	x	
Address obstacles to RTW									x		x	x		x							x	x	
Create supportive atmosphere amongst colleagues															x	x	x						

Note: This table was constructed by extracting data and conclusions from the reviews, guides and original studies. The presentation of data relevant some original studies was augmented by the analysis published by Van Oostrom et al 2009; the authors of that systematic review had obtained additional detail about interventions by writing to the authors of the original studies.

4.4 Other Information

Injury Management Framework

The USA study by Habeck et al (1998)³⁵ was pivotal in establishing a framework for Injury Management because their analysis of organisational policies and practices (OPPs) showed an association between injury & disability management OPPs and disability outcomes. The study involved an employer self-assessment survey of 220 **employers** to establish employer OPPs and this was analysed against employee disability outcomes obtained from administrative data from workers compensation organisations. The factors that were included in their Injury Management Model were:

Disability Case Monitoring;

Includes monitoring the validity, progress, and outcomes of lost-time cases, evaluating the disability process at critical points, and consulting with providers of health care, case management, and rehabilitation services.

Proactive RTW program;

A planned and coordinated effort by the employer; includes involvement of the injured employees and their supervisors throughout the process, creative placement strategies to accommodate and accomplish RTW, cooperative involvement across departments in the firm to achieve RTW, timely and continuous coordination of external providers with the RTW goals.

Wellness orientation;

The company's general orientation to health promotion; a commitment of resources to support health promotion or wellness, top management support and participation.

A similar study by Amick et al (2000)³⁷ that surveyed **employee** reports of OPPs also showed a significant relationship between disability management and RTW outcomes.

What's in it for employers? - the value proposition of an employer role in RTW

A literature review was undertaken by ACC in May 2009 to explore what the value proposition of engaging in RTW is for employers¹. The review found that there is no evidence in the literature about the financial costs and benefits of RTW for New Zealand employers. However, there was evidence of intangible value indicating that employer engagement in RTW maintains and improves staff morale and wellbeing, maintains productivity through reduced staff absence, and retains skills and investment in staff, thereby reducing costs of training replacement staff.

5 Discussion

5.1 Methodological Quality of Evidence

5.1.1 Quantitative study design, study population, sample size, statistical analysis:

The primary quantitative research studies included in this review were medium-high quality studies using study designs of RCT (5 studies) and prospective cohort (3 studies).

The study populations were workers who had been absent from work due to a MSD for 4 weeks or more, but less than 3 months. The four studies published prior to 2005 (that had been cited in numerous reviews) exclusively recruited workers with LBP, except for the study by Arnetz et al (2003)¹⁷. Conversely, of the four studies published post-2005, there was only one that exclusively recruited workers with LBP³¹. The other three included workers with MSD of the neck, upper back, shoulder, and lower extremities²⁰⁻²².

The study population in the RCTs ranged from 113 to 234 and most studies were sufficiently powered except for the study by Bultmann et al (2009)²⁰ which suffered from recruitment problems and McCluskey et al (2006)²² in which recruitment was impacted by implementation problems. All studies carried out statistical analyses to determine whether findings were statistically significant.

5.1.2 Quantitative study intervention and controls:

The study interventions in the quantitative literature involved testing the effectiveness of workplace-based vocational rehabilitation interventions against usual care. The extent of the employer role in these interventions was not described in detail but appeared to be active and substantial in all the studies except for that of Karjalainen et al (2003 & 2004)¹⁶³⁰ (which was less demanding of the employer). Implementation of the work-place interventions was problematic at one of two manufacturing sites participating in the McCluskey et al (2006)²² study but this was taken account of in their data analysis.

5.1.3 Qualitative study design:

The included qualitative studies were all medium-high quality. They all involved focus group and/or individual interviews with participants that were audio-taped and transcribed verbatim before analysis and identification of themes. The participant characteristics of these studies were broader than for quantitative studies. Participants were not necessarily suffering from MSD, or off work for less than 3 months.

5.1.4 Systematic and best-evidence reviews

The systematic reviews included in this report were of a high quality as assessed by the methodology describing inclusion criteria, critical appraisal of the primary literature, and data synthesis. The best-evidence reviews are less rigorous in that they do not carry out such detailed critique of the primary and secondary literature. However, they are carried out in a systematic way and add value to the discussion because of their significantly wider scope.

5.2 Employers are Key Players in the RTW Process

Employers are indeed ‘key players’ in RTW. Although the literature base describes a range of workplace-based interventions for people with MSD which require slightly different things from the employer and via different mechanisms, a common theme has emerged: RTW outcomes are better when interventions involve the workplace. The synthesis of data from the 22 publications included in this report has identified ***strong evidence that employers play a key role in the RTW process, and interventions with a workplace-based component involving the employer lead to improved RTW outcomes.*** The magnitude of the effect is variable but improvements of two-fold are achievable, i.e. RTW can be two times faster.

With regard to health outcomes of people with MSD who receive workplace-based interventions, there ***is weak evidence (i.e. limited and conflicting) that health outcomes (pain, function) are improved.***

5.3 Tasks and Activities for Employers in the RTW Process

The specific tasks and activities of employers in the RTW process have been established by combining and synthesising the findings of quantitative and qualitative literature. Although the research findings are from interventions with large employers, it is reasonable to expect that the same tasks and activities are equally important in small businesses. There is strong evidence that the four most important tasks of the employer are:

Key Task 1: Keep in contact with the injured workers and assist with an early RTW.

This is important for building trust and good-will with the employee which is considered to be one of the most central elements in achieving successful RTW. This requires that someone in the workplace is appointed to make the contact (it might be the direct supervisor, or a RTW buddy). Building the good-will and trust can be achieved by telling the worker the workplace will be supportive and asking the worker to come into work to sort out a RTW plan. An aspect of being supportive is developing an understanding of the total situation for the injured worker, i.e. understanding how the injury is impacting on their non-work life. If the worker remains unable to RTW, the employer can continue to keep in regular contact with the employee and encourage the employee to remain engaged with the workplace by inviting the worker to team meetings.

Key Task 2: Agree on a RTW plan, and RTW goals.

This requires the employer and employee to have a meeting to discuss: a) what the worker can and can't do as a result of their MSD; b) obstacles that will get in the way of early RTW; and c) ways of accommodating these things. Depending on the complexity of the situation, this step may require the assistance of a vocational rehabilitation specialist who can assess the job and worksite and facilitate the meeting. Obtaining agreement on a RTW plan will most likely require information (in the form of work restrictions and clearances) being provided to the employer by healthcare professionals, hence Task 2 is dependent on Task 4. Holding a 'round-table discussion' involving the key players is one way of facilitating the communication that is required for Task 2.

The RTW plan agreed between the employer and employee should identify who will tackle obstacles that exist, what is needed to overcome the obstacles, and who will act as a support buddy/case manager, i.e. who will monitor progress.

Key Task 3: Offer workplace accommodation.

As a result of the communication carried out in Task 2, employers are in a good position to know what would be a suitable workplace accommodation. It needs to be tailored to the workers physical needs, but also their social needs. The social environment at work can involve negative attitudes and resentment of co-workers which can impact negatively on the RTW process. The employer has a responsibility to advocate for the legitimacy of the worker's condition and restrictions and smooth difficult workplace relations. Workplace accommodations will allow for a graduated RTW and includes (but is not restricted to) reduced hours, altered tasks, a change of equipment.

Key Task 4: Communicate with the healthcare professionals

It is important that the employer communicates with healthcare professionals because it enables an exchange of information between these two key players. The employer is a key source of information about the job and the workplace and needs to clarify the job demands for the healthcare professional. Conversely, the healthcare professional needs to tell the employer what the worker can safely do. The latter requires a confidentiality waiver to be signed by the worker which will enable the healthcare professional to share that information with a third party (i.e the employer). As indicated above, this Task 4 needs to be carried out so that Task 2 above can be accomplished successfully.

Refer to Section 7, Implications for ACC, for an outline of potential actions that ACC and others can take to support employers in their role.

5.4 What should the employer not do?

The following conclusions are either implicit from the findings already discussed, or are supported by the qualitative literature (weak evidence), in which case a citation is provided.

The employer should not:

- allow absence of communication between supervisor and the injured worker (implicit)
- doubt the legitimacy of the injury^{7 24 26} (weak evidence)
- create a poor work match for the injured worker²⁴ (and implicit)
- allow modified duties to lapse beyond the capabilities of the injured worker²⁶ (weak evidence)
- hinder communication with other players (e.g. GP, rehabilitation professionals)²⁴ (and implicit)

5.5 When should the employer intervene?

There is **strong evidence** that employers should contact their injured workers within four weeks after work absence begins.

There is **limited evidence** about just how early the employer should intervene:

The guide for employers by Kendall et al (2009)²⁸ recommends making contact within the first few days. However, the systematic review by MacEachen et al (2006)⁷ offers a word of warning that the timing and approach needs to consider the context of each case. The qualitative evidence suggests that early contact is unhelpful if the worker had performance or pre-injury problems with the workplace, and that it can be problematic if the worker perceives it to be about obligation rather than care-oriented. In summary, the focus of initial contact should be about building good-will and trust and so thought should be given to the timing for each case to enable a positive, trust-building interaction.

5.6 Limitations of the Review

The following limitations of this review have been identified:

- It is possible that important primary studies were missed by following the pragmatic approach to rely on studies published subsequent to the 2005 systematic review by Franche et al⁵, and on studies that were cited in multiple systematic and best-evidence reviews. A selection bias may have been introduced by limiting the selection of pre-2005 studies to those that were cited in multiple systematic reviews.
- There may be a bias in the best-evidence findings available in the literature due to the fact that much of the recent work is produced by the same authors, namely Burton & Kendall; both of the 'guides for employer', and two of the three evidence reviews included in this report were co-authored by Burton and Kendall.
- Evidence tables are not provided for the four pre-2005 primary studies that were cited in multiple systematic reviews.
- All studies were selected and assessed for methodological quality by one reviewer (the author of this report), which creates the possibility of reviewer bias.
- Articles that were not written in English were excluded. There are potentially non-English publications that support or refute the conclusions of this report.

6 Conclusions

There is **strong evidence** that employers play a key role in the RTW process, and interventions with a workplace-based component involving the employer lead to improved RTW outcomes. The magnitude of the effect is variable but improvements of two-fold are achievable, i.e. RTW can be two times faster.

There is **weak evidence** (i.e. limited and conflicting) that health outcomes (pain, function) are improved by workplace-based interventions.

There is **strong evidence** that the four most important tasks of the employer are:

- Keep in contact with the injured workers and assist with an early RTW.
- Agree on a RTW plan, and RTW goals with the injured worker.
- Offer workplace accommodation.
- Communicate with the healthcare professionals.

Some actions of employers may not facilitate RTW of injured workers and a response/support to address these actions may be required. These include doubting the legitimacy of the injury, creating a poor work match for the injured worker, allowing modified duties to lapse beyond the capabilities of the injured worker, and hindering communication with other players (e.g. GP, rehabilitation professionals).

The precise timing of employer intervention is not entirely clear, but there is **strong evidence** that it should be within four weeks after worker absence. Some evidence suggests that employers should make initial contact within the first day or two of work absence, but that this needs to consider the context of the case.

7 Implications for ACC

Employer-readiness to come on board with ACC as key players in RTW of workers with a musculoskeletal disorder depends upon the following factors:

1. Awareness: employers need to be aware of the importance of their role.
2. Resources: employers need the know-how, capacity, injury management systems and resources to be able to assist.
3. Motivation/incentive: employers are more likely to assist with RTW if they are motivated.

ACC's own evidence suggests that the employer-readiness for engagement with RTW is often related to their size and to the nature of the work³⁸⁻⁴¹. Large employers are more likely to be aware of RTW philosophy, and have the resources and motivation to engage in RTW processes. Conversely, small and medium enterprises are less likely both to have an awareness of the importance of assisting workers to RTW and to have the resources to enable engagement with RTW. For those that run their business like a 'family' operation, they may have an emotional motivation to assist, but they may not be able to financially support a RTW plan for their employee. Furthermore, the nature of the work may make it particularly costly for small and medium sized businesses to offer alternative duties to their injured worker.

Therefore, any initiatives that ACC invests in to improve employer-readiness for RTW must consider the different needs of different sized businesses, and the type of work they engage in.

What is ACC currently doing?

The following sections summarise the ACC activities that engage with employers about their role in RTW, and suggest additional initiatives that ACC should consider:

Awareness, and 'Know-how' Resources:

- The Stay at Work Service, the Employment Maintenance Programme and Better@Work program each employ a third party who focuses on getting better engagement with the employer, and between the employer and other key players (client, ACC and healthcare providers).

- The Employer Injury Management Service provides a number of different services aimed at building employer capability to support stay at and return to work and supporting ACC staff in employer engagement. (Go to the ACC Today [team page](#) for further detail of services). This Service has developed a lot of ‘know-how’ resources, including a [website](#) (currently being updated and will go live at the end of March 2010) with information tailored for different sized businesses, and the ‘Back on Track’ kit for forestry employers. The ‘Back on Track’ kit is now being developed to the Back on the Job programme which extends it to different industries. It will be launched via the internet and seminars this year. The team also have an email that employers can use to ask any employer injury management related question and there is a system in place for employers who request certain resources where the consultants “walk in” the resource at the time they request it as this helps ACC provide a more timely service. In the 2009/2011 business plan the Employer Injury Management Service is working on raising awareness/profile of the services to employers so that they can have access at the time they need.
- The Workplace Safety Team, Injury Prevention, engages with employers through the Prevention and Management of Discomfort, Pain and Injury program which includes some [information and interactive resources](#), including [HabitAtWork](#).
- Marketing and Communications are trialling Community Forums as a way of targeting large employers and encouraging cross-talk with other key players. The first Forum will be trialled in a Christchurch suburb and will be attended by GP’s, Stay at Work providers and ACC’s Director of Clinical Services.
- ACC’s first point of contact with employers of an injured worker: What is the role of the case co-ordinator and case manager at the short term claim centres and branches in communicating with employers? Are their KPI’s related to timing/frequency of contact with employer? Are ACC staff confident and capable in how they work with Employers? : [to be completed after visit with STCC].

Motivation/incentives:

The incentives that ACC currently provide to employers are:

- Talk with Product and Scheme Management [to be completed after consultation]

What else could ACC do?

To ensure that ACC's business-as-usual activities are as effective as they can be, it is suggested that reviews be undertaken of the following:

- Review the content, language, and tone (or 'approach') of the internet and other resources for employers developed by Employer Injury Management and Injury Prevention for consistency with the findings of this report.
- Review the extent and nature of employer engagement with the Stay at Work Service and Better@Work program. Are there any barriers that need to be addressed?
- Review STCC and branch materials; What resources are needed? Are the KPI's appropriate? Are ACC staff confident and capable in how they work with Employers?
- Ensure research outcomes are integrated in current projects that influence employer engagement. For example, Vocational Rehabilitation Services Review, Better at Work, Product incentives.

Other initiatives to consider:

- Enhance "Just-in-time" education of employers: Educate/re-educate employers at the time of an employee injury. This would be particularly useful for small and medium sized businesses. Education would focus on the employer's role in RTW and about the resources and guidance available to them on ACC's website. Can employers be

directed to ACC's [website for employers](#) during the first contact they get from STCC or branches, and when they are subsequently contacted by ACC?

- Public awareness campaign: Raise awareness in the general public about the personal and societal benefits of recovery at work after an injury, and the role of the workplace and employers in rehabilitation.
- Incentive schemes: Review existing incentive schemes for employers, (e.g. the Workplace Safety Discount) and consider other incentives for employers that will enable them to offer alternative duties or workplace accommodations. What can be done to encourage employers to respond to injured workers in the same way regardless of whether the injury happened at work or not? There should be a focus on the cost/benefit to ACC, but also on the cost/benefit to employers. A review is currently underway in 'ACC's Product Review'.

The business proposition for NZ employers to engage in RTW programs and to offer workplace accommodations is currently weak, because of a lack of cost/benefit data, and relies on intangible themes like 'improving business performance'.^D [Note that the ACC Research Group is currently undertaking research with NZ businesses to establish the costs/benefits of being involved in RTW programs].

- Review ACC's employer engagement strategy, which was last updated in March 2008^E. Consider whether ACC is investing sufficient resources into employer education and engagement with RTW (via Employer Injury Management, Marketing and Communications).
- Review ACC's marketing and communication campaigns targeted at employers for consistency with the findings of this report.

^D Internationally there is a dearth of evidence about the costs/benefits of RTW programs from the employers' perspective and the business proposition varies depending on the policies and legislation in place in each jurisdiction.

^E ACC's Small and Medium Employer Relationship Development and Injury Management Strategy, prepared by a Senior Account Manager and Manager, Employer Injury Management.

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Appendix 1: Evidence Tables

Evidence Based Healthcare Table RTW role of employer

Reference: van Oostrom et al 2009 Workplace interventions for preventing work disability

Bibliographic Number: 11

Design Description	Types of study included in review	Intervention/comparison	Results
<p>Systematic review.</p> <p>Clearly focused question: what is the effectiveness of workplace interventions compared to usual care or clinical interventions on work-related outcomes and health outcomes? Do the effects differ when applied to musculoskeletal disorders, mental health problems, or other health conditions?</p> <p>Biases/weaknesses:</p>	<p>Number & type of studies: 6 RCTs: (3 on musculoskeletal disorders, 1 on mental health problems)</p> <ul style="list-style-type: none"> Anema/Steenstra 2007. Dutch sherbrooke; Graded activity v's workplace Arnetz 2003. Swedish; semistructured interview, worksite visit w/ all players. Feuerstein 2003. Integrated case management, upper extremity Loisel 1997. Sherbrooke model, Canada. Verbeek 2002. Supervisor education and involvement [<i>!query inclusion!</i>] (Blonk 2006 Mental health) <p>Total number of patients in the studies:</p> <p>Databases searched: Cochrane occupational health field trials register, CENTRAL, MEDLINE, EMBASE and Psyc INFO</p> <p>Inclusion/Exclusion criteria: <u>Included:</u> RCT, participants were sick-listed workers, intervention under study met definition of a workplace intervention, sickness absence was measured continuously</p> <p><u>Excluded:</u> interventions intended to simulate the demands of work in a clinical setting, without changes to or involvement of the workplace; studies focused on primary prevention, where RTW was not the main goal, group based not individual based, focused on just education, aimed at posture modifications only.</p> <p>Methodological assessment of studies: Two authors independently extracted data and assessed risk of bias of the studies. Meta-analysis and qualitative analysis (using GRADE levels of evidence) were performed.</p> <p>Selection Notes: Working age adults on sick leave. Workers with all types of disability</p>	<p>Intervention: Workplace interventions: either changes to the workplace or equipment, changes in work design and organization, changes in working conditions or work environment, and occupational (case) management with active stakeholder involvement of at least the worker and the employer.</p> <p>Outcome Measures: <u>Primary outcomes</u> Time until a lasting RTW (at least 4 weeks working). Time until first RTW (at least one day at work). Cumulative duration of sickness absence in the follow up period. Recurrences of sickness absence. <u>Secondary outcomes</u> Functional status; Quality of life, general health Symptoms, pain Direct and indirect costs of work disability</p>	<p>Results: There is moderate-quality evidence to support the use of workplace interventions to <u>reduce sickness absence</u> among workers with musculoskeletal disorders when compared to usual care.</p> <p>However, workplace interventions <u>were not effective to improve health outcomes</u> among workers with musculoskeletal disorders. [moderate quality means further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.]</p> <p>Conclusion: Due to the small number of studies, no <u>convincing</u> conclusions can be formulated about the effectiveness of workplace interventions on work-related outcomes and health outcomes regardless of the type of work disability.</p> <p>Care providers could implement workplace interventions in guiding workers disabled with musculoskeletal disorders if the main goal is return to work.</p> <p>Methodological Score: (according to NICE criteria) 1++</p>

Evidence Based Healthcare Table RTW role of employer

Reference: Franche et al 2005 Workplace-Based Return-to-Work Interventions: A systematic Review of the Quantitative Literature

Bibliographic Number: 5

Design Description	Types of study included in review	Intervention/comparison	Results
<p>Systematic review.</p> <p>Clearly focused question: what is the effectiveness of workplace-based return-to-work interventions for workers with musculoskeletal and other pain-related conditions.</p> <p>Biases/weaknesses:</p> <p>Very comprehensive review which considered study designs other than RCTs b/c they have important scientific merit.</p>	<p>Number & type of studies: Included a full range of study designs (RCT, nonrandomized trial, cross-sectional, pre-postdesign, time series, case control, cohorts); excl noncomparative studies (case series or case study). 10 studies (25 articles):</p> <ul style="list-style-type: none"> • Quebec Sherbrooke Model, <i>Loisel et al</i> • Manitoba Canadian Nurse study, occup. & clinical intervention, proactive & managed RTW, <i>Yassi et al and Cooper et al</i> • Finland mini-intervention, <i>Karjalainen et al</i> • Maine USA re Carpal tunnel, organisation policy/practises, <i>Amick et al</i> • Sweden, proactive & managed RTW, <i>Arnetz et al</i> • Ontario Canada, EC/WA, <i>Hogg-Johnson/Brooker et al</i> • Maryland USA, integrated on site management, <i>Bernacki et al/Green-Mackenzie et al</i> • Ontario Canada, WA, <i>Crook et al</i> • Michigan USA, proactive & managed RTW, <i>Habeck/Hunt et al</i> • Netherlands, physician training, <i>Verbeek et al</i> <p>Total number of patients in the studies:</p> <p>Databases searched: Medline, Embase, Cinahl, PsycInfo, Sociological Abstracts, ASSIA and ABI. French and English studies 1990-2003.</p> <p>Inclusion/Exclusion criteria: <u>Inclusions:</u> workers with MSK condition, pain-related condition (episodic or non-episodic), or associated with a degenerative or nondegenerative condition, chronic pain, or a workers' compensation claimant population. <u>Exclusion:</u> multidisciplinary rehab, back schools, exercise classes, work-conditioning (b/c not primarily implemented in the workplace)</p> <p>Methodological assessment of studies: Methodological criteria were well described (description of population, inclusion/exclusion, participation rate>40% or homogeneity in participants, follow-up reported, interventions described, confounding variables controlled for, outcome defined & measurable, design of study is appropriate, no other flaws identified). Synthesis of evidence according to 3 aspects, quality, quantity, consistency (see Table II of Franche et al 2005; similar to Van Tulder 2001), to yield a level of evidence: strong, moderate, limited, mixed, insufficient, none.</p>	<p>Intervention: Interventions (planned intervention programs; offered in a limited # of workplaces by same team of providers as part of a research study) are distinguished from 'strategies' (approaches to improve RTW; not necessarily part of a planned intervention program; often in observational studies; often retrospective evaluation).</p> <p>Disability management; case management; education to workplace staff, insurance case manager, workers; changes in organisational factors aimed at improving RTW outcomes. Must be provided at the workplace, or by the workplace, or in close collaboration with the workplace.</p> <p>Outcome Measures: Work disability duration (time absent from work) Quality of life (general health, condition-specific functional status, symptom severity, pain levels) Associated costs (weekly compensation, compensated other healthcare costs, intervention costs [a cost to either ACC or employer in NZ jurisdiction])</p>	<p>Results: Intervention components: <u>Early contact (within first 3 months) with the worker by the workplace</u> Reduces work disability: <i>Moderate evidence</i> Sustained reduction in WD: <i>Insufficient evidence</i> Economic: <i>moderate evidence</i> QOL: <i>mixed evidence</i> <u>Work accommodation (WA)offer</u> Reduces work disability: <i>Strong evidence</i> Sustained reduction in WD: <i>Limited evidence</i> Economic: <i>moderate evidence</i> QOL: <i>mixed evidence</i></p> <p><u>Contact between healthcare provider and the workplace</u> Reduces work disability: <i>Strong evidence</i> Sustained reduction in WD: <i>Limited evidence</i> Economic: <i>moderate evidence</i> QOL: <i>mixed evidence</i></p> <p><u>Ergonomic work site visits</u> Reduces work disability: <i>moderate evidence</i> Sustained reduction in WD: <i>insufficient evidence</i> Economic: <i>moderate evidence</i> QOL: <i>mixed evidence</i></p> <p><u>Supernumerary replacements (financial support available to cover costs of additional person to replace injured worker):</u> Reduces work disability: <i>insufficient evidence</i> Economic: <i>insufficient evidence</i> QOL: <i>insufficient evidence</i></p> <p><u>RTW coordination</u> Reduces work disability: <i>moderate evidence</i> Economic: <i>moderate evidence</i> QOL: <i>insufficient evidence</i> Note that the profession of the RTW coordinator was varied, suggesting that profession is not a critical factor, but rather the coordination function is the critical factor.</p>

	<p>Selection Notes: The inclusion scope for 'population of interest' is wider than this EBH review. The range of intervention components' assessed is wider than the scope of this EBH review. The RTW interventions always consisted of several components and the mix of components varied. EC= early contact, WA= work accommodations</p>		<p>Methodological Score: (according to NICE criteria) 2++ A v good systematic review.</p>
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Evidence Based Healthcare Table RTW role of employer

Reference: Karjalainen et al 2003 Multidisciplinary biosychosocial rehabilitation for subacute low-back pain among working age adults

Bibliographic Number: 29

Design Description	Types of study included in review	Intervention/comparison	Results
<p>Systematic review.</p> <p>Clearly focused question: determine the effectiveness of multidisciplinary rehabilitation for subacute low back pain among working age adults.</p> <p>Biases/weaknesses:</p> <p>Not up to date: Additional evidence has been added since this lit search was done in 2002.</p>	<p>Number & type of studies: RCTs and non-randomised controlled clinical trials (CCTs)</p> <ul style="list-style-type: none"> • 2 RCTs: • Lindström 1992 a,b,c [103 blue collar factory workers, 8 wks off work due to subacute, non-specific, mechanical low back pain. Intervention = graded activity programme combined with a work-place visit compared to traditional care]. • Loisel 1997 [130 employees (from multiple sites) accumulated 4 wks off work over the year. Intervention = Occupational (including a work-place visit) and clinical interventions separately and together, comparing them to usual care]. <p>Databases searched: Medline (from 1966), Embase (from 1988), PsycLit (from 1967), Central, Medic, Science Citation Index, reference checking....to 2002. Original search was planned and performed for the broader area of musculoskeletal disorders, and LBP trials were separated afterwards.</p> <p>Inclusion/Exclusion criteria: Included: multidisciplinary rehabilitation program, i.e. it had to consist of a physician's consultation plus either a psychological, social or vocational interventions, or a combination of these.</p> <p>Methodological assessment of studies: Used 'best evidence' synthesis to grade the evidence rather than statistical pooling because of heterogeneity of the studies.</p> <p>2 methodologically low quality RCTs equates to <i>moderate</i> research-based scientific evidence.</p> <p>Selection Notes: Sub-acute = suffering LBP for more than 4 weeks but less than 3 months.</p>	<p>Intervention: Lindstrom: graded activity programme combined with a work-place visit compared to traditional care</p> <p>Loisel: Occupational (including a work-place visit) and clinical interventions (separately and together, comparing them to usual care)</p> <p>Outcome Measures: Lindstrom: Return to work (weeks before returning to work); average duration of sick leave during one yr after the intervention yr; pain intensity; subjective disability.</p> <p>Loisel: RTW; disorder specific functional status (Oswestry); intensity of pain (McGill) and general functional status (SIP) at 1 yr follow up</p>	<p>Results: Lindstrom: patients in intervention group returned to work sooner (by an average of 5 wks sooner), and they had fewer sick leaves than control group (by mean 7.5 days). No signif difference in pain intensity, but subjective disability had decreased significantly at one yr followup.</p> <p>Loisel: RTW outcomes (median duration off work) Occupational (incl worksite visit) + clinical = 60 days Occupational only= 67 days Clinical only = 131 days Usual care = 120 i.e. RTW was 2.4 times faster in the group with both occupational and clinical intervention; 1.91 times faster in the 2 groups with occupational intervention than the 2 groups without occupational interventions. Oswestry scores were significantly reduced in the group with both occupational/clinical intervention c.f. usual care.</p> <p>Summary: <i>Moderate evidence:</i> showing that multidisciplinary rehabilitation, which includes a workplace visit or more comprehensive occupational health care intervention, helps patients to return to work faster, results in fewer sick leaves and alleviated subjective disability for patients with subacute low back pain.</p> <p>A workplace visit increases the effectiveness of multidisciplinary rehabilitation for subacute LBP.</p> <p>Methodological Score: (according to NICE criteria) 1+</p>

Evidence Based Healthcare Table RTW role of employer

Reference: Krause et al 1998, Modified Work and Return to Work: A review of the literature

Bibliographic Number: 13

Design Description	Types of study included in review	Intervention/comparison	Results
<p>Systematic review.</p> <p>Clearly focused question: what is the effectiveness of modified work</p> <p>Biases/weaknesses:</p>	<p>Number & type of studies:</p> <ul style="list-style-type: none"> • 13 studies of moderate to high methodological quality (rating of 2.5 or higher). • A range of study types, a range of reasons for work absence (mostly back, but also brain injury, some not specified), a range of types of modified work (light duty, graded work exposure, work trial, supported employment, sheltered employment) <p>Databases searched: Medline, PsycInfo, ABI</p> <p>Inclusion/Exclusion criteria: Include: English articles from 1975 to 1997</p> <p>Exclude: case reports; articles that did not evaluate effectiveness. Work conditioning and work hardening programs executed in a rehabilitation clinic outside the workplace were not considered for review.</p> <p>Methodological assessment of studies: A rating score was given of 0 to 5 based on fulfilment of five methodological criteria: Temporality; selection of participants for intervention and control groups; measurement of exposure and outcome variables; confounding; study design and statistical analysis.</p> <p>A synthesis of the study findings was done.</p> <p>Selection Notes:</p>	<p>Intervention: Modified work programmes</p> <p>Outcome Measures:</p>	<p>Summary:</p> <p>There is evidence that modified work programs facilitate return to work for temporarily and permanently disabled workers.</p> <p>The best quality studies reported a doubling of return to work rates and/or the number of days worked when modified work programs were offered to injured workers. The range of magnitude of effect estimates across the 13 higher quality studies is narrow, with a point estimate of 0.7 at the lower end and a factor of 3.0 at the higher end.</p> <p>Methodological Score: (according to NICE criteria) 2++</p>

Evidence Based Healthcare Table RTW role of employer

Reference: Burton et al 2009, Management of work-related upper limb disorders: a review

Bibliographic Number: 10

Design Description	Types of study included in review	Intervention/comparison	Results
<p>A Systematic review using a best evidence synthesis.</p> <p>Clearly focused question: to determine evidence-based management strategies for work-relevant upper limb disorders (ULDs) and explore whether a biopsychosocial approach is appropriate</p> <p>Biases/weaknesses: Includes narrative reviews. Quality appraisal of the reviews is brief.</p>	<p>Number & type of studies:</p> <ul style="list-style-type: none"> 200 articles were obtained, analysed and archived. Systematic reviews and extensive narrative reviews were the primary focus, but individual studies were also selected where they provided additional or more detailed information. <p>Databases searched: Major electronic databases, limited to publications from 1996 onwards, until June 2007.</p> <p>Inclusion/Exclusion criteria: Excluded: rheumatic and systemic diseases, fractures and disorders of peripheral circulation.</p> <p>Methodological assessment of studies: Limited; level of evidence was optimised by focusing on systematic and extensive narrative reviews.</p> <p>Selection Notes:</p>	<p>Intervention:</p> <p>This evidence table has extracted the findings about return to work programs involving the employer</p> <p>Outcome Measures: Return to work, work retention, work disability</p>	<p>Results:</p> <ol style="list-style-type: none"> there is strong evidence that workplace psychosocial factors (beliefs, perceptions, work organization) have consistently been found to be associated with various aspects of ULDs, including symptom expression, care seeking, sickness absence and disability. This can be extrapolated to indicate that the employer can play a role in tackling the workplace psychosocial factors. there is moderate evidence that Ergonomic work design directed at equipment or organization has not been shown to have a significant effect on incidence and prevalence rates of ULDs. However, ergonomic interventions can improve worker comfort which can in principle contribute positively to a multimodal intervention. there is limited evidence that ergonomic adjustments (mouse/keyboard design) can reduce upper limb pain in display screen workers, but insufficient evidence for equipment interventions among manufacturing workers. weak evidence of a wide consensus that an integrative approach by all players, including the employer, is conceptually a fundamental requirement. there is moderate evidence that integrative approaches can be effective for MSDs in general and probably also for ULDs; case management shows promise for getting all players on side <p>Summary: The evidence on management of ULDs favours neither biomedical nor workplace interventions alone. Rather what is needed is a biopsychosocial approach, which necessitates multimodal interventions with the employer alongside the other players.</p> <p>Innovative multimodal interventions seem promising, but the optimal content, timing and method of delivery needs further clarification.</p> <p>Methodological Score: Not applicable (Best evidence)</p>

Evidence Based Healthcare Table RTW role of employer

Reference: Waddell et al 2008 Vocational Rehabilitation what works, for whom, and when?

Bibliographic Number: 9

Design Description	Types of study included in review	Intervention/comparison	Results
<p>A best evidence synthesis incorporating the available scientific evidence (quantitative and qualitative), logical reasoning, evidence-based guidance and examples of best practice.</p> <p>Conclusions are drawn about the balance of evidence, based on its quality, quantity, and consistency.</p> <p>Clearly focused question: what helps people with common health problems (musculoskeletal disorders, mental health problems, cardio-respiratory conditions) return to work? [focus was on what works, not the mechanism or how it works]</p> <p>Biases/weaknesses: 1. Could be selection and personal bias, although the authors tried to minimise this. 2. The assignment of 'ratings for the strength of the scientific evidence on effectiveness' was not transparent. i.e. ratings were given to the final evidence statements, but there was not level of evidence rating on each individual report/study.</p>	<p>Number & type of studies: Used existing scientific literature reviews and reports, primarily published from 2000-2007, although some key papers were sought back to 1990. i.e. the primary focus was on systematic reviews, extensive narrative reviews, reports, and professional guidance; individual studies were only selected if they added additional essential information not covered in the reviews.</p> <p>Musculoskeletal articles: 102 reviews, reports, individual studies were reviewed, and had data extracted.</p> <p>Databases searched: AMED, Cinahl, Embase, Medline, PsycINFO, plus specific government departments and international organisations; plus handsearching</p> <p>Inclusion/Exclusion criteria: English only. Excluded specific medical conditions, health promotion and primary prevention.</p> <p>Methodological assessment of studies: They assessed the strength of evidence on effectiveness of interventions using a grading system similar to van Tulder et al 2001. Themes were identified. Evidence statements were derived by a consensus approach; they reflected the balance of evidence on effectiveness of interventions. Caveats and cautions were offered in the statements or in the narrative text.</p> <p>Selection Notes: The purpose of the report was to inform policy makers. Therefore the inclusion criteria went beyond RCT's; such a restriction would be inappropriate for voc rehab, and for a report to inform policy decisions. Therefore used a 'best evidence synthesis' approach considering a broader range of evidence types.</p>	<p>Intervention: Any intervention (not just workplace based interventions that involve the employer) that was used in RTW of musculoskeletal patients. [Therefore, some interventions are not relevant to this EBH review]</p> <p>Outcome Measures: Return to work</p>	<p>Results: (there were 11 evidence statements relating to musculoskeletal disorders; only those relevant to this EBH review are listed below.) MSD1(<i>non scientific evidence</i>) There are good epidemiological and clinical reasons and widespread acceptance throughout the literature that early return to work and stay at work approaches are appropriate and beneficial for most people with MSD. MSD2 (<i>strong evidence</i>) A common set of approaches for helping people return to work are effective across the range of musculoskeletal disorders/injuries (accepting that some specific diagnoses require condition-specific treatment). MSD4 (<i>strong evidence</i>) Early intervention through delivery of appropriate treatment, positive advice/reassurance about activity and work, and/or workplace accommodation is sufficient for many people with MSD. Those who do not respond in a timely manner may require more structured voc rehab interventions. MSD6 (<i>moderate evidence and wide consensus</i>) voc rehab entails a number of elements, which must take account of the individual, their health condition and their work; involvement of the workplace is crucial. MSD7 (<i>strong evidence</i>) Temporarily modified work (transitional work arrangements) can facilitate early return to work. MSD9 (<i>strong evidence</i>) Commitment and coordinated action from all the players is crucial for successful voc rehab; especially important is communication between healthcare professionals, employers and workers, which should be initiated at an early stage of absence.</p> <p>Methodological Score: Not applicable (Best evidence)</p>

Evidence Based Healthcare Table RTW role of employer

Reference: McPherson 2009 Reviews of Return to Work and Prevention of Work Disability

Bibliographic Number: 18

Design Description	Types of study included in review	Intervention/comparison	Results
<p>Best evidence review for ACC</p> <p>Clearly focused question: what strategies could be effective in supporting injured workers to RTW and/or maintain employment</p> <p>Biases/weaknesses: Contributing studies were not assessed in-depth.</p>	<p>Number & type of studies:</p> <ul style="list-style-type: none"> 146 articles were considered as evidence. 	<p>Focus was on:</p> <p>Preventing unnecessary work disability in back pain.</p> <p>Strategies to promote return to work in chronic pain.</p> <p>Strategies to promote RTW after traumatic brain injury (TBI).</p> <p>Preventing unnecessary work disability in mild TBI.</p>	<p>Results: (relevant to this review)</p> <p>Moderate evidence that early contact between healthcare professionals and employers within the workplace is required to ensure appropriate work accommodations that are in keeping with the individual's ability are offered (and accepted). This is clearly linked to prevention of work disability.</p> <p>Workplace multidisciplinary interventions should be instituted for people with sub acute back pain and the emphasis should not merely be on graded activity programmes. Need interventions within the workplace, not separate to the workplace.</p>
	<p>Databases searched:</p> <p>Scopus, PsychInfo and Cinahl</p>		
	<p>Inclusion/Exclusion criteria:</p>		
	<p>Methodological assessment of studies:</p> <p>A basic critique was done of each article, and the overall synthesis/assessment of the evidence used a best-evidence assessment according to Van Tulder et al (2001)</p>		
	<p>Selection Notes:</p>		

Evidence Based Healthcare Table RTW role of employer

Reference: Bultmann et al 2009 Coordinated and tailored work rehabilitation: a randomized controlled trial with economic evaluation undertaken with workers on sick leave due to musculoskeletal disorders

Bibliographic Number: 20

Design Description	Participants	Intervention	Outcomes				
<p>An RCT comparing a coordinated and tailored work rehabilitation (CTWR) with conventional case management (CCM) for its impact on return to work of workers with musculoskeletal disorders (MSDs)</p>	<p>Description: Workers on sick leave for 4-12 weeks due to low back pain or MSD as the main cause of sick leave. Aged between 18 and 65 yrs.</p> <p>There were no significant differences between the groups, except for neck pain being more prominent in group 2.</p>	<p>CTWR (begins after 4-12 wks leave) has two components; lasts no longer than 3 months: 1. a work disability screening: multidisciplinary assessment of disability & functioning & ID of barriers to RTW. Team includes occ. Physician, occ, physiotherapist, chiropractor, psychologist, social worker/case coordinator who maintains contact with workplace. Takes ~ 2hr, (30 min per discipline) 2. formulation and implementation of a coordinated, tailored and action-oriented RTW plan (team conference).</p> <p>In the plan three areas of action can be distinguished: 1. action directed at worker 2. action directed at workplace 3. action directed at barriers in the environment</p> <p>Conventional Case Management: requires a follow-up assessment of cases within 8 wks, based on medical, social and vocational information; may or may not involve interview with case manager. Role of employer is varied.</p> <p>Specific roles of employer: (in which the intervention group received significantly more of than the control group) Workplace accommodations/job modifications Roundtable discussions, incl supervisor Support/help from supervisor at work Intvtn group received significantly more support from the employer: 38% had work accommodations (c.f. 7% in control) 45% had roundtable discussions (c.f. 17% in control) 57% received support/help from supervisor (c.f. 29% in control)</p>	<p>Outcome Measures: <u>Sickness absence hours:</u> Administrative data on cumulative sickness absence hours; recorded at 0-3 months, 3-6 months, 6-12 months, 0-6 and 0-12 months. <u>RTW:</u> <u>Pain/disability:</u> Secondary measures were of work status, pain intensity, functional disability</p> <p><u>Cost/benefit:</u> included direct intervention costs, productivity loss and healthcare utilisation costs.</p>				
	<table border="0"> <tr> <td>Group 1: CTWR</td> <td>Group 2: CMM</td> </tr> <tr> <td>No. in Group: 68 (before dropout); 54 Mean Age:</td> <td>No. in Group: 51 (before dropout); 26 after dropout Mean Age:</td> </tr> </table>		Group 1: CTWR	Group 2: CMM	No. in Group: 68 (before dropout); 54 Mean Age:	No. in Group: 51 (before dropout); 26 after dropout Mean Age:	<p>Results: <u>Sickness absence hours</u> 0-3, and 3-6 month differences in outcomes were not statistically significant. 6-12, 0-6 and 0-12 mth differences in outcomes were statistically significant. The number of sickness absence hours was significantly lower in the CTWR group as compared to the control group. <u>RTW:</u> Those who had RTW at 3, 6, 12 months in the Intvtn gp were 45, 69 and 78%, (c.f. 37, 48 and 62% in control gp). <u>Pain intensity, functional disability</u> Both groups improved. There was no significant difference between the groups except at 3 months for pain intensity.</p> <p><u>Cost-benefit analysis:</u> CTWR saves US\$1,366 per person at 6 months follow-up, and US\$10,666 per person at 12 months follow-up.</p> <p><u>Conclusion:</u> Suggestive evidence that CTWR employed by an interdisciplinary team is effective compared to conventional case management in workers absent from work due to MSD.</p>
	Group 1: CTWR		Group 2: CMM				
	No. in Group: 68 (before dropout); 54 Mean Age:		No. in Group: 51 (before dropout); 26 after dropout Mean Age:				
<p>Inclusions:</p>							
<p>Exclusions: Mental health disorders, alcohol or drug addiction, pregnancy, had quit job, or were fired before randomisation.</p>							
<p>Selection Notes: Initially recruited those with LBP, but extended study to other MSDs to obtain sufficient number of participants. The study is underpowered.</p>	<p>Methodological Score: (according to NICE criteria) 1- high risk of bias; underpowered, high drop out in control</p>						

Evidence Based Healthcare Table RTW role of employer

Reference: Steenstra et al 2006. Economic evaluation of a multi-stage return to work programme for workers on sick-leave due to low back pain. Bibliographic Number: 31 and 19

Reference: Anema et al 2007 multidisciplinary rehabilitation for subacute low back pain: graded activity or workplace intervention? A randomized controlled trial

Design Description	Participants	Intervention	Outcomes				
<p>An RCT with randomisation occurring at two stages.</p> <p>Blinding not possible.</p> <p>Baseline characteristics were recorded to identify potential confounders.</p>	<p>Description: A Dutch implementation/modification of the Canadian Sherbrooke Model. Early workplace intervention involving workplace assessment, work modification, case management. First randomisation: Workplace intervention N=96, Usual Care: N=100 Second randomisation: Clinical intervention N=55, Usual care N=57</p>	<p>Intervention 1: workplace intervention. (Occurring between 2-6 weeks, and at least before 8 weeks of absence): Workplace assessment and work modifications based on participative ergonomics, involving ergonomist, occup health nurse, worker, supervisors, possible others. Plus case management (by who?). Occupational physician and GP communicated.</p> <p>Intervention 2: Clinical intervention. (Occurring at 8 weeks): Graded activity program i.e. a gradually increasing exercise program based on an operator behavioural approach. Up to 26 one-hour sessions, at 2 per week. Program ended when RTW was established. Physiotherapist acted as a coach/supervisor, using hands-off approach. <i>NOTE: compliance to this intervention was poor and referrals were delayed.</i></p> <p>Usual Care: via Dutch OP guidelines. Reassurance, advice to stay active. Workplace interventions are mentioned as an option; clinical intervention recommended after 12 weeks of sick-leave.</p>	<p>Outcome Measures: <u>Lasting RTW:</u> i.e. number of days off work until a stable RTW, defined as at least 4 weeks full return to work without a dropout. <u>Secondary outcomes:</u> functional status, pain intensity, general health, quality of life</p>				
	<table border="0"> <tr> <td> <p>Workplace intervention: n=96 Group 1: Workplace intervention + clinical intervention No. in Group: 27 Mean Age: 43.6 M/F: 13/14</p> </td> <td> <p>Usual care: n=100 Group 2: Usual care + clinical intervention No. in Group: 28 Mean Age: 39.2 M/F: 6/22</p> </td> </tr> <tr> <td> <p>Group 1b: workplace intervention only No. in Group: 25 Mean Age: 43.5 M/F: 14/11</p> </td> <td> <p>Group 2b: Usual care only No. in Group: 32 Mean Age: 43.3 M/F: 13/19</p> </td> </tr> </table>		<p>Workplace intervention: n=96 Group 1: Workplace intervention + clinical intervention No. in Group: 27 Mean Age: 43.6 M/F: 13/14</p>	<p>Usual care: n=100 Group 2: Usual care + clinical intervention No. in Group: 28 Mean Age: 39.2 M/F: 6/22</p>	<p>Group 1b: workplace intervention only No. in Group: 25 Mean Age: 43.5 M/F: 14/11</p>	<p>Group 2b: Usual care only No. in Group: 32 Mean Age: 43.3 M/F: 13/19</p>	<p>Results: The workplace intervention group returned to work 30 days earlier than the usual care group.</p> <p>Workers in the workplace intervention group + clinical intervention returned to work 50.9 days later than the workers in the workplace intervention + usual care group.</p> <p>Workers in usual care + clinical intervention returned to work 21.3 days later than the usual care group.</p>
	<p>Workplace intervention: n=96 Group 1: Workplace intervention + clinical intervention No. in Group: 27 Mean Age: 43.6 M/F: 13/14</p>		<p>Usual care: n=100 Group 2: Usual care + clinical intervention No. in Group: 28 Mean Age: 39.2 M/F: 6/22</p>				
	<p>Group 1b: workplace intervention only No. in Group: 25 Mean Age: 43.5 M/F: 14/11</p>		<p>Group 2b: Usual care only No. in Group: 32 Mean Age: 43.3 M/F: 13/19</p>				
	<p>Inclusions: Workers with low back pain. Had to be on sick-leave from regular work for 2-6 weeks due to LBP. LBP without a specific underlying cause. Aged 18-65 yrs.</p>		<p>Conclusion:</p> <ol style="list-style-type: none"> workplace intervention was effective for lasting RTW clinical intervention had no positive effect, whereas in the Canadian study it had a small beneficial effect (but compliance was poor) none of the intervention groups had significantly improved secondary outcomes compared to usual care 				
<p>Exclusions: Specific causes of LBP; pregnancy; serious psychiatric disorders; if legal conflict at work; if worker had been sick-listed due to LBP less than a month prior to current episode.</p>	<p>Methodological Score: (according to NICE criteria) 1+ with regard to the workplace intervention and related outcomes. 1- overall because: Some risk of bias due to a) some differences in the control group and the intervention group (F/M ratio, and sickleave prior to inclusion); and b) compliance to clinical intervention was poor.</p>						
<p>Selection Notes: Power calculations suggest that a sample size of 200 workers was sufficient to detect a 20% difference in lasting RTW between workplace intervention and usual care. There were more females than males. Predominant job type was health care/services, followed by office work.</p>							

Evidence Based Healthcare Table RTW role of employer

Reference: Franche et al 2007. The impact of early workplace-based return-to-work strategies on work absence duration: A 6-month longitudinal study following an occupational musculoskeletal injury

Bibliographic Number: 21

Design Description	Participants	Intervention	Outcomes
<p>An analysis of a cohort of 632 claimants with work-related musculoskeletal injuries to examine the relationship between early RTW strategies and work absence duration.</p> <p>The predictive value of 6 early RTW disability management strategies were determined. Twenty potential confounders were assessed at 1 month after injury.</p>	<p>Description: 1. 632 participants were recruited from administrative databases of the Ontario Workplace Safety and Insurance Board (61% participation rate). Participants were more likely than non-participants to be older and female, but comparable on other characteristics. Evidence that participants had more severe work disability than non-participants. 2. 446 participants completed the 6-month interview (71% retention rate). 3. Eligible participants had filed a lost-time claim for back or upper extremity work-related Musculoskeletal disorders.</p> <p>Group 1: % of the cohort that was exposed to the strategies Early contact 60.3% Accom offer/accepted 55/73% Healthcare/employer contact 38.4% Re-injury Advice to employer 17.6% Ergonomic worksite visit 8.1% RTW coordinator 73.9%</p> <p>Group 2: % of the cohort that was not exposed to the strategies.</p> <p>Inclusions: People with lost-time work-related musculoskeletal injury. Absent from work for a minimum of 5 days within the first 14 calendar days after injury At least 15 yrs old.</p> <p>Exclusions: Those with fracture, amputation, burn, concussion, electrocution, head injury, hernia, cut, crush injury (without broken bones), difficulty speaking English, those posing a security risk, those incarcerated or receiving institutional care.</p> <p>Selection Notes:</p>	<p>Participants were interviewed at 1 and 6 mths post injury, and provided information about RTW experience, duration of work absence, workplace, healthcare provider, insurer, and physical and mental health. Analysis used interview data and administrative data from WSIB</p> <p>The Six early RTW disability management strategies in the analysis were.</p> <ol style="list-style-type: none"> early contact with the worker by the workplace work accommodation offer and acceptance contact between healthcare provider and workplace advice from healthcare provider to the workplace on how to prevent re-injury or recurrence ergonomic worksite visits presence of a RTW coordinator 	<p>Outcome Measures: 6-month self-reported work absence duration (phone interviews at 1 and 6 months) Time receiving wage replacement benefits from an administrative database. Work absence means absence from full days only. Part days at work was considered as RTW. Analysis was via Cox proportional hazards regression modelling to determine the predictive value of the six early RTW disability management strategies with work absence duration</p> <p>Results: Significant predictors of shorter work absence duration were (according to both self-report and administrative data):</p> <ol style="list-style-type: none"> Work accommodation offer and acceptance (p<0.001) [those who rejected the offer tended to miss more days of work, and had longer periods with weekly compensation]. 55% had received a work accommodation offer, and of those 73% accepted. Advice from health care provider to the workplace on re-injury prevention (p<0.01 to 0.001) [i.e. not just contact per se, but the nature of the information that is being communicated from the healthcare provider to the employer]. Note: only 17.6% had received this strategy at baseline. Receiving an ergonomic worksite visit (p<0.05). [note: may be a masking effect in this data b/c ceasing weekly comp. may be procedurally linked with ergonomic visit, regardless of whether the worker is fit to RTW or not. Self-report results may be more reflective of the real situation?] Note: only 8.1% received this strategy at baseline. <p>All three of these interventions had low levels of confounding in comparison to the other RTW strategies which did not have a relationship with the outcomes. No significant relationship between the outcomes and the following strategies:</p> <ul style="list-style-type: none"> Early contact with employer Presence of a RTW coordinator <p>Methodological Score: (according to NICE criteria) 2+ well conducted cohort with low risk of confounding.</p>

Evidence Based Healthcare Table RTW role of employer

Reference: McCluskey et al 2006 The implementation of occupational health guidelines principles for reducing sickness absence due to musculoskeletal disorders

Bibliographic Number: 22

Design Description	Participants	Intervention	Outcomes
<p>Non-randomized controlled trial (cohort study?)</p> <p>Study objective was to compare the efficacy of an early psychosocial intervention with traditional management for reducing sickness absence in workers with MSDs.</p>	<p>Description: Workers with musculoskeletal disorders; workers were at manufacturing sites of a large pharmaceutical company in the UK.</p>	<p><u>Experimental: Early psychosocial intervention.</u> Occupational health nurse (OHN) identified and contacted workers at the start of absence, invited them to discuss condition and consent to be in study.</p> <p>Case management approach over 4 weeks:</p> <ul style="list-style-type: none"> • Psychosocial assessment (an interview and educational material provided targeting unhelpful beliefs) • Modified Work to facilitate early RTW for max of 2 wks. (referral to GP or physio if not back at work after 2 wks). • Liaison with other players – With GP to discourage unnecessary sickness certification. With team leaders to clarify job demands and facilitate work modifications. <p><u>Control: traditional management.</u> Workers absent due to MSD would only see OHN on RTW, or were contacted after being absent for a long period of time; i.e. no attempt at early RTW.</p> <p>Note: At site E2, the majority of the 233 absentees were either simply not contacted or contacted after RTW. This occurred because the intervention protocol was not being followed correctly at E2.</p> <p>Delays at E2 occurred because sickness certificates were slow in being handed to OHNs</p>	<p>Outcome Measures: RTW time: duration of work absence Work retention: duration of subsequent absences due to MSD during the 12 month follow up period. 12 month follow up period Stats: SPSS software; t-tests, relative risk estimates.</p>
	<p>Group 1: Two experimental sites No. in Group: 1435 Mean Age:</p> <p>Group 2: three control sites No. in Group: 1483 Mean Age:</p>		<p>Results: The analysis of experimental v's control utilised data from one experimental site only (E1), because the study was not well implemented in the second site (E2). Experimental site (E1) on leave, N = 81 Control site on leave, N = 214. <u>Mean RTW time:</u> at E1 was 4.3 days shorter than at control site. [6.5 v's 10.8 days] <u>Duration of future absence:</u> the average at E1 is approx. half that of the controls but the difference (12.1 days) was not signif different. <u>Average time taken to contact absentee:</u> at E1, 2.5 days. [At E2, 12.4 days].</p>
	<p>Study Inclusions: Workers with MSDs of back, neck pain with or without referred limb symptoms; shoulder/elbow/wrist/hand symptoms.</p>		<p>Specific employer tasks: Absence-management procedures at the workplace are required to ensure early intervention occurs (i.e. to ensure that the early contact with employer occurs). Lack of an absence management system is a major obstacle to successful early intervention.</p>
	<p>Exclusions: Workers with Red Flags i.e. any underlying serious pathology</p>		<p>Methodological Score: (according to NICE criteria) 2- cohort study with high risk of confounding, bias.</p>
<p>Selection Notes:</p>			

Evidence Based Healthcare Table RTW role of employer

Reference: MacEachen et al 2006 Systematic review of the qualitative literature on return to work after injury

Bibliographic Number: 7

Design Description	Types of study included in review	Intervention/comparison	Results
<p>Systematic review of qualitative research literature.</p> <p>Clearly focused question:</p> <ol style="list-style-type: none"> 1. What are the social and organisational dimensions of workplace-based RTW? 2. What are the challenges for workers, employers and healthcare providers in the RTW process? 3. How can key players in RTW contribute to optimal RTW practices? <p>Biases/weaknesses:</p> <p>.</p>	<p>Number & type of studies:</p> <ul style="list-style-type: none"> ● 13 qualitative studies were of sufficient quality to undergo data extraction ● 7 were of medium quality; 5 were of high quality; 1 was of very high quality. <p>Total number of patients in the studies:</p> <p>Databases searched: Medline, Embase, Cinahl, PsycInfor, Sociological abstracts, ASSIA, ABI; other reports; 1990-2003. [See Franche et al 2005 for more details] Searched for interviews, focus groups, observations, qualitative, qualitative methods.</p> <p>Inclusion/Exclusion criteria: Peer-reviewed papers that focused on musculoskeletal and pain-related injuries. English or French Inclusion: <ol style="list-style-type: none"> 1. the study explored the experiences of any of the various players immediately involved in workplace-based RTW, such as employers, co-workers, healthcare professionals, and injured workers. 2. the study used recognisable qualitative methods 3. the study focused on work-related musculoskeletal and pain-related injuries </p> <p>Methodological assessment of studies: Used a qualitative assessment framework developed by researchers based at National Centre for Social Research in the UK. They used a Quality rating scheme (low, medium, high, very high).</p> <p>Selection Notes: Workplace-based RTW studies = those that focus on early RTW (i.e. before full recovery), and that take into consideration the workplace environment or the range of key players in the process of workplace-based RTW.</p>	<p>Intervention:</p> <p>Outcome Measures: A</p> <p>Synthesis: Synthesis of studies was via the <u>meta-ethnographic approach</u>; it involves three levels of analysis: first order concepts (identified in the original study), second order interpretations (cross cutting 'key concepts' that encompass more than one of the studies being synthesized), third-order syntheses (analysis/synthesis of key concepts toward a line of argument; a re-interpretation of 'key concepts' according to how they relate to each other on the main theme of workplace-based RTW. E.g. analysis identified challenges, an argument was developed for key intermediary players who may contribute to optimal RTW conditions).</p>	<p>Results: 8 key concepts were identified: Role of goodwill among parties Relations between the worker and 'the system' Contact with worker between injury and return to work Employer contact with physicians Modified work – social, physical and financial aspects Role of unions in return to work Role of supervisors in the day to day social relations of RTW Return to work and organizational environments</p> <p>Summary: RTW extends beyond concerns about managing physical function to the complexities related to the following: Beliefs, Roles, Perceptions of many players</p> <p>Good will and trust are overarching conditions that are central to successful return-to-work arrangements.</p> <p>Intermediary players have the potential to play a key role in facilitating the RTW process by addressing the social and communication barriers of RTW.</p> <p>Methodological Score: (according to NICE criteria) Very high quality systematic review of qualitative literature.</p>

Evidence Based Healthcare Table RTW role of employer – Qualitative studies

Reference: Holmgren and Ivanoff 2007 Supervisor’s views on employer responsibility in the Bibliographic Number: 23
 return to work process. A focus group study.

<p>Research Question. What is the question; Is it answered?</p>	<p>What are supervisor’s attitudes to the return to work process?</p>
<p>Theoretical Orientation What is the stated or implicit theoretical orientation? How is it applied to the analysis?</p>	<p>Employees view employer attitudes as being significant in influencing RTW outcomes. It is implied that this research will enable a comparison of employer and employee attitudes; will they align?</p>
<p>Study Method Interviews (what type), focus groups, case study, document review, mixed design, other?</p>	<p>Focus groups with key questions. How do you view your responsibility in the return to work process? How do you view the possibilities for supporting an employee on sick leave to return to work? How do you view the obstacles to supporting an employee on sick leave to return to work? What kind of demands do you make on the employee on sick leave and on others?</p>
<p>Sample and study context Sampling strategy, number and type of participants, recruitment method, geographic locale, time frame, workplace types included.</p>	<p>23 supervisors experienced in managing sick listed employees. Aimed for homogeneity in the focus group to stimulate open discussion. Had 6 groups, ranging from 2-5 participants each. Most supervisors (87%) were from public sector or state-owned companies; 74% were women. <u>Recruitment:</u> Rehab professionals working in primary health care and case managers at the local Social Insurance Office were asked to suggest employers with experience in managing employees on sick leave. Researchers also searched telephone directories and specific websites for suitable participants. Based in Sweden.</p>
<p>Analysis What is stated or implicit analytic process.</p>	<p>Audio tapes transcribed verbatim. Tapes were listened to several times to understand context so that the data could be analysed in its context. Themes and categories were created. Descriptive statements were made, and illustrative quotations selected. Descriptive statements were the foundation for synthesis, and abstracting and conceptualizing the data.</p>
<p>Reflexivity What is stated or implicit reflections on how methods or theory or sampling approach impacted outcome.</p>	<p>Recruitment method led to mostly women from private sector (a consequence of most sicklisted employees being women and in Sweden, women tend to work in the private sector). The participants were well informed: all experienced at managing absence, and had experienced structure rehab routines and interactions with case maangers.</p>
<p>Study findings Provide detailed description of study themes and issues. Describe how and why study is relevant to workplace-based RTW.</p>	<p>Two themes emerged, which had sub-themes. 1. The supervisor is the key person. 2. Influentional factors in rehabilitation work Specific tasks/roles of employer:</p> <ul style="list-style-type: none"> • Employer needs to create confidence (show respect and have trust in sick worker). Do this by regular contact b/w worker and supervisor, and worker and workplace. • Supervisor needs to be supportive: understand the total situation (work + private life), create supportive atmosphere amongst colleagues. • Agree on a rehab plan (make demands). • Intervene early - to prevent motivation of worker to deteriorate. • Collaborate and communicate (with all parties involved) <p>Encourage workmates to be supportive</p>
<p>Overall Rating</p>	<p>High</p>

Evidence Based Healthcare Table RTW role of employer – Qualitative studies

Reference: Soeker et al 2008 I'm going back to work: Back injured clients' perceptions and experiences of their worker roles

Bibliographic Number: 24

<p>Research Question. What is the question; Is it answered?</p>	<p>What are worker <i>perceptions</i> and experiences of challenges they face when adapting to RTW. What are the barriers and facilitators to RTW?</p>
<p>Theoretical Orientation What is the stated or implicit theoretical orientation? How is it applied to the analysis?</p>	<p>Worker perspectives and experiences are imperative for the development of good quality treatment interventions and successful outcomes of rehabilitation. Expected to find barriers and facilitators; introduction describes some of the barriers in the findings; no strong evidence of bias.</p>
<p>Study Method Interviews (what type), focus groups, case study, document review, mixed design, other?</p>	<p>Semi-structured focus groups; 1 pilot testing group, 6 two hr groups; on average 4 participants per group. Three focus groups used the same group of participants, three used different groups of participants. Data collected using video taping of 2 sessions, and audio-tape of all the sessions. Audiotapes and field notes were transcribed.</p>
<p>Sample and study context Sampling strategy, number and type of participants, recruitment method, geographic locale, time frame, workplace types included.</p>	<p>Set in South Africa. 26 participants, selected by random sampling (table of random digits) from a hospital Occupational Therapy Dept and a Rehabilitation Clinic. Participants had different occupational backgrounds. Sampling method was a limitation because it limited the diversity and variation of responses amongst research participants. Participants appeared not to be chronically disabled.</p>
<p>Analysis What is stated or implicit analytic process.</p>	<p>Method of Morse and Field: comprehending, synthesizing (decontextualising), theorising and recontextualising. Manual coding was used to obtain codes, categories and themes. Phrases, words or statements reflecting a common phenomenon were identified as a code. Participants reviewed the data to ensure accuracy, and suggested changes were incorporated into further analysis.</p>
<p>Reflexivity What is the stated or implicit reflections on how methods or theory or sampling approach impacted outcome.</p>	<p>Stated that the sampling method limited diversity and variation in responses.</p>
<p>Study findings Provide detailed description of study themes and issues. Describe how and why study is relevant to workplace-based RTW.</p>	<p><u>Main barrier theme: "feeling doubted"</u>: stakeholder perspective (physical, psychological and psychosocial stressors); age and education of worker; attitude of employer in the workplace; lack of education on disability management procedures by employers and rehab professionals; inadequate workplace policy; lack of meaning and satisfaction in the work; poor matching of the worker and the work; distrustful attitude of the medical profession; lack of client-centeredness; inefficiency of the insurance companies; unsupportive society; poor communication between stakeholders.</p> <p><u>Main facilitator theme: "a team effort"</u>: injury management strategies; positive work culture; work placement strategies; education within the workplace; micro-loans within the workplace; seniority within the workplace; meaningful and satisfactory work experience; holistic team management.</p> <p>Participants viewed the absence of a facilitator to be a barrier; and conversely the absence of a barrier to be a facilitator in the RTW process. Barriers and facilitators influenced the participants' perceptions of adapting to their worker roles. Barrier could impede the adaptive process, a facilitator aided the adaptive process. RTW programmes were viewed as successful when they utilised the facilitators, and the individuals' mechanisms of adapting to overcome the barrier. If the latter is not incorporated, the programme is viewed as unsuccessful.</p>
<p>Overall Rating</p>	<p>High Quality</p>

Evidence Based Healthcare Table RTW role of employer – Qualitative studies

Reference: Westmorland et al 2005 Disability management practices in Ontario workplaces: employees' perceptions Bibliographic Number: 26

<p>Research Question. What is the question; Is it answered?</p>	<p>What are employee's perceptions about disability management (DM) at their workplaces.</p>
<p>Theoretical Orientation What is the stated or implicit theoretical orientation? How is it applied to the analysis?</p>	<p>That workplace-based DM is the therapeutic environment of choice. Previous research of employees perceptions had identified factors that hindered or promoted RTW and the importance of the employers role was emphasized [Nordqvist et al 2003]. Specifically they stressed the need for a structured back-to-work program that included making contact with the absent employee, communications with fellow workers and involving supervisors in the process. Authors use findings of other studies to support and validate the findings of this study – possibly reflecting a bias.</p>
<p>Study Method Interviews (what type), focus groups, case study, document review, mixed design, other?</p>	<p>Focus group interviews and individual interviews. Telephone interview used for those who were isolated and unable to travel to focus group interviews. Main interview questions were 1) what were the factors that facilitated and hindered your return to work? And 2) do you have any suggestions to improve DM at your workplace? Participants were also asked to complete the OPP questionnaire (Halbeck 1998, Amick 2000) (qualitative component)</p>
<p>Sample and study context Sampling strategy, number and type of participants, recruitment method, geographic locale, time frame, workplace types included.</p>	<p>450 letters were sent to employees in southern Ontario who had sustained a work-related injury within the last 3 yrs (Ontario Workplace Safety and Insurance Board records). A total of 58 participants were recruited. Used 7 focus groups (3-7 participants in each) and 24 phone interviews.</p>
<p>Analysis What is stated or implicit analytic process.</p>	<p>Audiotape recording of interviews and verbatim transcription; content analysis (line by line) and coded using a grounded theory approach by two people. Coding discrepancies were discussed and consensus obtained. Categories were examined and grouped into themes.</p>
<p>Reflexivity What is stated or implicit reflections on how methods or theory or sampling approach impacted outcome.</p>	<p>Risk of selection bias in recruitment; participants who had positive or very negative experiences with the DM process may have been motivated to participate. Responses may not be generalisable outside Ontario province.</p>
<p>Study findings Provide detailed description of study themes and issues. Describe how and why study is relevant to workplace-based RTW.</p>	<p>Facilitators and Hindrances: three major themes emerged:</p> <ol style="list-style-type: none"> 1) <u>The need for job accommodation.</u> <i>Facilitator:</i> involving injured worker in accommodation process was seen as beneficial. E.g. respect employees' opinion and make them valued partners in the accommodation process. <i>Hindrance:</i> employers not following through with provision of modified duties, and allowing a lapse to duties beyond the capabilities of the injured employee. 2) <u>the importance of open and clear communication.</u> <i>Facilitator:</i> supportive and communicative supervisor results in employee feeling valued and wanted to RTW. Co-workers communicating a willingness to help was good. Team meetings with all the players (employee, therapist, physician, counsellor). <i>Hindrance:</i> absence of communication from supervisors made worker feel devalued. Needless worry, anxiety and delays caused by not knowing who to go to for help. Employers who only value employee when productive, view as disposable when not. 3) <u>the necessity of job retraining.</u> <i>Facilitator:</i> having options to be productive, even if it means retraining. <i>Hindrance:</i> feeling cast off and devalued because employer did not discuss options available to the employee. <p>When positive or facilitating examples were given, participants felt they were treated respectfully and part of overall DM process. When negative or hindering examples were given, participants felt they were devalued and worthless as employees.</p> <p>Suggestions for changes in the DM practices at their workplaces: 3 themes emerged</p> <ol style="list-style-type: none"> 1) provision of ergonomic modifications, 2) development of meaningful policies and procedures, 3) education about health and safety.
<p>Overall Rating</p>	<p>High quality; but with some risk of bias due to participant selection, and also investigator bias influencing interpretation of the findings.</p>

Evidence Based Healthcare Table RTW role of employer – Qualitative studies

Reference: Aas et al 2008 Leadership qualities in the return to work process: a content analysis Bibliographic Number: 25

<p>Research Question. What is the question; Is it answered?</p>	<p>What are the leadership qualities that are valued in the RTW process of employees?</p>
<p>Theoretical Orientation What is the stated or implicit theoretical orientation? How is it applied to the analysis?</p>	
<p>Study Method Interviews (what type), focus groups, case study, document review, mixed design, other?</p>	<p>Part of the Rogalund RTW study. Semi-structured face to face interviews (except for one phone interview) conducted using open-ended questions, lasting approx 1 hour. All interviews were audiotaped, then transcribed verbatim.</p>
<p>Sample and study context Sampling strategy, number and type of participants, recruitment method, geographic locale, time frame, workplace types included.</p>	<p>Norway based. [may not be relevant to other jurisdictions]. A case study, of 30 workers on >8 weeks sick leave, and their 28 supervisors, from 19 companies. It was a heterogeneous sample of employees, with different diseases and disorders. Several of the participants had comorbidities. The sampled companies were selected to ensure diversity regarding size, public versus private sectors, and high versus low rates of sick leave. Education, healthcare, finance, and petroleum industry sectors were represented. Participant inclusion criteria were: on sick leave for >8 weeks during the previous 6 months, being employed at least 0.5FTE in the company during the previous 8 weeks, being on a sickness benefit. Recruitment was via letter. Not stated what the recruitment rate was.</p>
<p>Analysis What is stated or implicit analytic process.</p>	<p>Analysis focused on the manifest meaning of the informants' point of view, rather than on the latent content. A combination of qualitative and quantitative analysis was applied. Coding was applied at three levels: level 3: condensing interviews to reveal descriptions of leadership qualities. Level 2: identified leadership qualities. Level 3: described leadership types on the basis of leadership qualities.</p>
<p>Reflexivity What is stated or implicit reflections on how methods or theory or sampling approach impacted outcome.</p>	<p>Generalisability is low because insufficient participants to have representative sampling; therefore couldn't do a statistical analysis. These Norwegian findings may not be generalisable to other jurisdictions.</p>
<p>Study findings Provide detailed description of study themes and issues. Describe how and why study is relevant to workplace-based RTW.</p>	<p><u>Lack of consensus about leaders:</u> 345 descriptions; 78 distinct leadership qualities; 7 types of leadership. Could indicate that each case needs to be addressed using a tailored approach. Only 10/78 leadership qualities were mentioned more than 10 times. Therefore high variability in informant reporting. [a limitation of the study]. <u>Supervisors and workers value different leadership styles in RTW:</u> 1.the most valued leadership type for workers was "Encourager" (motivating, inspiring, generous, positive, pleased, available, humoristic, fair, patient, encouraging), but this was the least valued leadership style for supervisors. 2. the least valued leadership type for workers was "Responsibility-Maker" (conscious, fearless, honest, direct, determined, limit-setting, confronting, empowering, purposeful, offensive, sincere, realistic, challenging, plain, deal with cross-pressure), whereas this was the most valued style by supervisors.</p>
<p>Overall Rating</p>	<p>Medium (design of interview and subsequent analysis may be flawed, and have lead to high variability in informant reporting, therefore difficult to draw conclusions)</p>

Reference: Hanson et al (2006) Refer to Table 10.

Reference : Kendall et al (2009) Refer to Table 10.

Appendix 2. Level of evidence for quantitative Studies

1 ⁺⁺	High quality meta analyses, systematic reviews of RCTs, or RCTs with a very low risk of bias
1 ⁺	Well conducted meta analyses, systematic reviews, or RCTs with a low risk of bias
1 ⁻	Meta analyses, systematic reviews, or RCTs with a high risk of bias
2 ⁺⁺	High quality systematic reviews of case-control or cohort studies High quality case-control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal
2 ⁺	Well conducted case control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal
2 ⁻	Case control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal
3	Non-analytic studies, e.g. case reports, case series
4	Expert opinion

Appendix 3. Level of evidence qualitative studies

Evidence Rating	Requirements
Low	Data too invariable due to inadequate analysis or sampling strategy, data do not 'ring true' and it appears that the authors had superimposed their own set of ideas
Medium	Analysis descriptive in nature and somewhat 'thin in describing context and detail, leading to appearance of superficiality.
High	Descriptive but including a more adequate level of analysis with consideration of context, presentation of a more nuanced picture of study participants and the complex environment in which they function.
Very High	Required a theoretical focus, with consideration of the internal processes involved in creating the situation that was being described (for example, links to macro structures) and with an explanatory value that could be transferred to other research areas.

Source: MacEachen et al (2006)⁷