

Strategies to enable physiotherapists to promote timely return to work following injury

Department of Physiotherapy
Monash University

Dr Cameron Gosling (project manager)

Professor Jenny Keating (project lead)

Dr Ross Iles

Dr Prue Morgan

Mr Ruben Hopmans

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Table of Contents

Executive Summary	1
1. Introduction	6
1.1 Background	6
1.2 Aims	9
1.2.1 Initial Project Aims	9
1.2.2 Extended Project Aims	9
2. Method Overview	10
3. Review of Current Literature	12
3.1 Introduction	12
3.2 Aim	12
3.3 Method	12
3.3.1 Stage 1 Overview: Systematic reviews reporting the barriers and facilitators to RTW	12
3.3.2 Stage 2 Overview: Empirical studies assessing the effects associated with addressing barriers and facilitators to RTW	15
3.4 Results	16
3.4.1 Stage 1 Systematic review results of barriers and facilitators	16
3.4.2 Stage 2 Results of the effects of interventions addressing barriers and facilitators to RTW	20
3.4.3 Stage 2 Meta-Analysis and Results	28
3.4.4 Meta-analysis for multidisciplinary interventions versus usual care	28
3.4.5 Meta-analysis for generalised workplace interventions compared to usual care	33
3.4.6 Meta-analysis for patient education interventions versus usual care	37
3.4.7 Meta-analysis for any intervention compared to usual care	40
3.5 Discussion	44
3.5.1 Key review findings	44
3.6 Conclusion	46
4. Physiotherapy utilisation by injured workers	47
4.1 Aims	47
4.2 Victorian WorkCover Authority administrative dataset	47
4.3 Methods	48
4.3.1 Inclusion and exclusion of cases – Certificate Analysis	48
4.3.2 Inclusion and exclusion of cases – Services Analysis	48



4.3.3 Data collection and collation	48
4.3.4 Data Analysis	50
4.4 Results.....	51
4.4.1 Profile of physiotherapy claims and certificates of capacity	51
4.4.2 Summary of service practices by physiotherapists.....	55
4.5 Discussion of key results	59
4.5.1 Certificates of capacity issued by physiotherapists	59
4.5.2 Service provision by physiotherapists	59
4.6 Conclusion	59
5. Stakeholder perception of barriers and facilitators to RTW.....	61
5.1 Background.....	61
5.2 Aims	61
5.3 Methods	61
5.3.1 Recruitment of participants.....	61
5.3.2 Data Collection and Analysis.....	62
5.4 Results: Barriers and Facilitators to Timely Return to Work	63
5.4.1 Demographic Profile of Participants.....	63
5.4.2 Themes identified from the physiotherapist interviews	64
5.4.3 Themes identified from the claims manager interviews	70
5.5 Discussion	72
5.6 Conclusion	73
6. Development of the Early Intervention Physiotherapy Framework (EIPF) Education Materials and Assessment of Change in Practice	74
6.1 Background.....	74
6.2 Aims	74
6.3 Development of the Online Education Materials.....	75
6.3.1 Round 1 - Development	76
6.3.2 Round 2 – Pilot 1.....	79
6.3.3 Round 3 – Pilot 2.....	79
6.3.4 Round 4 – Roll-out and on-going monitoring.....	80
6.3.5 ISCRR Compensation Research Database	80
6.3.6 Analysis.....	81
6.4 Results of the EIPF education program.....	82
6.4.1 Learning objectives for EIPF education	82
6.4.2 Demographic profile of participants	87
6.4.3 EIPF training completion responses.....	88
6.4.4 Confidence in practice following training.....	90



6.4.5 Proportion of questions answered correctly	96
6.4.6 The direct cost of building the online education	99
6.4.7 CRD data results	102
6.5 Discussion of the EIPF	111
6.5.1 System meets the needs of the Australian Physiotherapy Association and the Health and Disabilities Services Group	111
6.5.2 Training program that has extensive reach and acceptance	112
6.5.3 Self-assessed improvements in understanding	112
6.5.4 Improvements in RTW outcomes	113
6.5.5 The path forward	114
6.6 Conclusion	115
7. Discussion of key outcomes	115
7.1 A new view of the return to work literature	116
7.2 Profile of certification of capacity and service provision by physiotherapists	116
7.3 Stakeholders perceptions to barriers and facilitators to return to work	116
7.4 The efficacy of targeted training on physiotherapist knowledge and return to work outcomes	117
7.5 Additional benefits arising from of this project	118
8. References	120
Appendix Chapter Three: Literature Review	123
Appendix 3.1 Systematic reviews reporting the barriers and facilitators to RTW included in the data extraction for Stage 1	123
Appendix 3.3 Intervention overview for included studies in Stage 2.	129
Appendix 3.4 Validation of conclusions across reviews in Stage 1	135
Appendix Chapter Five: Qualitative Interview Study	138
Appendix 5.1 Interview schedule prompts	138
Appendix 5.2 Paper under review: Barriers and facilitators for return to work following a compensable injury: the physiotherapist's perspective	139

Executive Summary

This report describes the implementation of strategies to assist physiotherapists in supporting timely return to work (RTW) for injured workers. The work included a review of barriers and facilitators that affect RTW, analysis of physiotherapist certification and service practices, interview with physiotherapists and case managers to determine their views regarding factors that influence RTW, and the development and evaluation of an online program that provided education in best practice in applying the Clinical Framework and encouraging early RTW.

Background: Work has long been associated with positive benefits including both mental and physical health (Waddell & Burton, 2006). Facilitating early and sustained RTW following injury is a target for many Australian compensable injury systems (WorkSafe Victoria, 2015; Transport Accident Commission & WorkSafe Victoria, 2012; WorkCover SA, 2015). As primary care practitioners, physiotherapists are ideally positioned to influence RTW processes and make meaningful contributions to the success of compensation systems that support injured people.

There are 27,360 physiotherapists currently registered with the Australian Health Practitioners Regulation Agency (AHPRA statistics, 2015), with 6,730 (24.6%) of those recording Victoria as their principle place of practice. In the 13 years between 1995 and 2008, the Transport Accident Commission (TAC) paid for 4.5 million healthcare services that were delivered in the 12 months following discharge from acute care (median 19 services per claim). Almost 50% of all claimants accessed paramedical or allied health services, with physiotherapists providing services to 40% of claimants with a median of 27 services per claim (Ruseckaite et. al., 2012). Seventy percent of injured workers treated by physiotherapists have a musculoskeletal disorder and services for this subgroup are in the order of (median (IQR)) 25 (10-62) sessions per claimant (Berecki-Gisolf et al., 2013).

This project had two complementary components. The initial project focussed on reviewing systems that optimise appropriate certification of injured workers by physiotherapists. Physiotherapists and occupational physiotherapists who certify people for RTW were engaged to report on their beliefs and practices, and perceived barriers and facilitators to appropriate certification. We also reviewed the methods that are currently used to educate occupational physiotherapists in appropriate certification, evaluating them for elements that could be transferred to an online self-directed learning module that included automated assessment of knowledge, beliefs and intended behaviours. During the course of the initial investigation, an agreement was reached between the Australian Physiotherapy Association (APA), TAC and WorkSafe Victoria (WorkSafe) to improve physiotherapy practitioner remuneration. The result

was an expansion of the education material required to support this endeavour. Under the agreed strategy, practitioners would be required to complete the education modules to qualify as registered providers for TAC/WorkSafe under a new payment structure (the Early Intervention Physiotherapy Framework, EIPF). Physiotherapists who opted not to complete the EIPF modules, and register their completions with the TAC and/or WorkSafe, would continue to operate under the existing physiotherapy policies for the respective organisations. This provided us with a comprehensive sample using (and providing feedback on) the education material. It also provided an opportunity to review state-wide metrics describing certification practices to assess the possible influence of the education on certification practices of physiotherapists. The challenge was to develop high quality education resources and to match the education material with the needs of the compensation agencies (TAC and WorkSafe), practitioners and clients.

Methods: A mixed methods approach was applied. A systematic review was conducted to identify barriers and facilitators to RTW; a subsequent review of controlled trials examined whether manipulation of barriers or facilitators affected RTW metrics. Interviews with physiotherapists (n =20) and case managers (n =9) provided us with their perspectives on factors that influence RTW following injury. Interrogation of the ISCRR compensation research database (CRD) enabled a summary of certification and service patterns by physiotherapists who provide services to injured workers. Information from these and other sources was triangulated to identify key learning objectives for a program that was designed to support physiotherapists in delivering best practice services to injured workers. Key messages embedded in the program were informed by sound education pedagogy, recommendations in the Clinical Framework, relevant information from TAC and WorkSafe websites, content in face to face seminars for Occupational Physiotherapists, and relevant policies, procedures and legal acts. The program was developed for delivery on-line, using software that enabled an interactive learning experience. This program was then trialled and made accessible to all Victorian physiotherapists. Program success was evaluated using practitioner feedback, responses to quiz questions and data on pre and post program service provision captured in the CRD.

Key Results: Many barriers and facilitators that influence RTW have been reported (>200). Most are likely to be chance findings as few (21) have been validated by repeated identification across independent reviews. Many proposed facilitators to RTW are workplace factors, but most trials of effects associated with manipulation of barriers or facilitators have focussed on the knowledge, skills and behaviours of injured workers. In the main, results of these trials have been less than encouraging. A shift in focus to improving the nature of workplaces such that they enhance the potential for RTW following injury is an important future direction for research and investment.

Analysis of certificate data (N=1,163,353) for 88,061 claims between 2003 and 2012, and service data between 2010 and 2012 revealed that physiotherapists issue only a small proportion (less than 4.4%) of all certificates of capacity. 62% of all certificates issued by physiotherapists recommended either RTW with alternative or modified duties or full RTW. Claims that involve occupational physiotherapists (OPs) are typically associated with a shorter period of incapacity compared to those that involve regular physiotherapists.

In interviews with 20 physiotherapists and 9 case managers we discussed barriers and facilitators associated with RTW, their knowledge of the compensation system, and strategies they use to support injured workers. Key factors perceived to be related to timely RTW by participating physiotherapists were injured worker attitudes; the workplace; unified targets and positive approaches to care by all stakeholders; system delays; inappropriate certification of capacity; communication skills; and knowledge of the Victorian compensation system. These perceptions were echoed by case managers who also reported that RTW would be assisted by better communication between stakeholders and appropriate use of medical certification by practitioners. Case managers also observed that OPs appeared to have a more apparent focus on rehabilitation that includes RTW.

We used action research to develop and evaluate an online education program that would improve physiotherapists' knowledge and awareness of the Clinical Framework, certificate of capacity and the policies and procedures of the Early Intervention Physiotherapy Framework (EIPF). Strategies that informed the development of program content were gathered using literature review (Section 3), data on current physiotherapist practices (Section 4), the EIPF framework and related literature, and interviews conducted with physiotherapists and claims managers (Section 5). The education program was built, refined and rolled out in four stages: development, Pilot 1, Pilot 2 and the final launch. The program presented four clinically relevant interactive video demonstrations, resources that informed participants regarding policies, procedures and best practice in supporting return to work for injured workers and clients, and targeted questions to facilitate review, reflection and learning. Feedback during each stage facilitated refinement of the material. Oversight was provided by a steering committee of stakeholders and the Health and Disability Strategy Group (HDSG). Outcomes of the program included information collected online from participating physiotherapists about their perceptions of the program, feedback on the strengths and weakness of the resources and an evaluation of physiotherapist service provision and claimant return to work (RTW) data before and after completion of the program. To date, 988 physiotherapists have completed the online education with a current development cost in the order of \$189 per completed EIPF practitioner. On completion of the program, physiotherapists reported a significant improvement in their

- understanding of the Clinical Framework
- ability to adhere to the EIPF policy
- understanding of relevant TAC and WorkSafe policies and procedures, and
- ability to correctly complete a certificate of capacity for an injured compensable client.

Incapacity days and RTW outcomes for claimants seen by program completers (EPs) appear comparable to the data for those seen by OP's, however the small window of data collection (3 months) limits confidence in these encouraging outcomes. The analysis in this report should be repeated with data obtained during 2015.

Participants provided very positive responses to participation in the program with almost no negative or unhelpful suggestions despite the liberty afforded for negative feedback. This indicates that physiotherapists comprise a group of providers with the potential to be helpful and collegial in addressing key concerns raised by insurers. The online platform remains accessible to EIPF registered practitioners and provides scope for future education programs and a method for ongoing updates in policies or procedures relevant to practice.

The EIPF online education program has demonstrated that a user-friendly system-wide program can be implemented that appears to improve practitioner behaviours and understanding of the compensation framework and system.

Implications arising from this work

Opportunities exist to explore the effects on RTW associated with strategies that mitigate workplace barriers to RTW. Ongoing studies of interventions that target the injured worker may not offer acceptable return on investment.

The online program developed in this research provides a model for supportive communication between insurers and service providers. Practitioners were consistently positive about the program benefits, repeatedly expressing appreciation that long held confusions had been addressed. It would be valuable to determine the level of engagement that would occur if new modules addressing complex case management were added to the site. Other material of potential value to physiotherapists could include case interactions that contribute to professional development points, peer discussion about complex cases, advanced communication skills including motivational interviewing, updates on changing systems and policies, and ongoing refinement of cases, resources and questions designed to drive learning.

The potential gains observed in this project should be re-evaluated using CRD data for claims in 2015. In particular the percentage of 'unfit' certificates compared to 'full RTW' or 'RTW with alternative/modified duties' should be monitored across time and compared to data collected prior to program implementation. In addition, the duration of certificates issues by EPs should be compared to historical values for OPs and regular physiotherapists.

If the early indications in claims data are confirmed with data collected over a sustained period, the program might be formally evaluated in a randomised controlled trial. This might be conducted in other Australian states. To facilitate a large scale randomised controlled trial (RCT) across multiple jurisdictions, a combined NHMRC partnership grant including contributions from Monash University, ISCRR, TAC, WorkSafe Victoria, and the other affiliated jurisdictions is in the preliminary stages of development.

The program could be implemented in the final year of professional entry-level education to enhance the knowledge of new physiotherapy graduates entering the workforce. The online system allows for tracking completions with individual identification numbers. Currently a practitioners' physiotherapy registration number is utilised, although this could be modified to include a student identification number such as their student Australian Health Practitioner Regulation Agency number. Students undertaking final year clinical placements could potentially undertake this training in preparedness for postgraduate EIPF registration using the same tracking process that is currently utilised.

Variations on the existing program might be tested for effects in other professional groups. The allied health professions of chiropractic and osteopathy have similar practice rights to physiotherapist as outlined in the Victorian legislation pertaining to traffic and workplace injuries. The primary focus of all the online education has been to reinforce the Clinical Framework and processes of the Victorian Compensation systems. Minimal changes, mainly related to available resources, would need to be made to facilitate a roll-out to these or other groups.

1. Introduction

1.1 Background

Work has long been associated with positive benefits including both mental and physical health (Waddell & Burton, 2006). Injuries or illness sustained at work can have a serious impact on individuals. Outcomes following workplace injuries are worse for people covered by compensation compared to those who are not covered by compensation (Cameron & Gabbe, 2010). While most injured workers recover and return to work (RTW) in a timely manner (Return to Work Matters Team, 2015), sometimes RTW is delayed. The frequency and duration of disability related to workplace injuries or illness have been used as markers of the social and economic impact of compensation claims (Krause et al., 2001). Therefore, facilitating early and sustained RTW following injury is a target for many Australian compensable injury systems (WorkSafe Victoria, 2015; Transport Accident Commission & WorkSafe Victoria, 2012; WorkCover SA, 2015). The Australasian Faculty of Occupational & Environmental Medicine, The Royal Australian College of Physicians consensus statement (AFOEM, 2011) and the Australian Physiotherapy Association (APA) 2012 Position Statement on 'The physiotherapist's role in occupational rehabilitation' (APA, 2012) all strongly advocate for promotion of early return to work following injury. Identifying factors and processes that contribute to early and sustained RTW are therefore important. As primary care practitioners, physiotherapists are ideally positioned to influence RTW processes and make meaningful contributions to the success of compensation systems that support injured people.

There are 27,360 physiotherapists currently registered with the Australian Health Practitioners Regulation Agency (AHPRA statistics, 2015), with 6,730 (24.6%) of those recording Victoria as their principle place of practice. In the 13 years between 1995 and 2008, the Transport Accident Commission (TAC) paid for 4.5 million healthcare services that were delivered in the 12 months following discharge from acute care (median 19 services per claim). Almost 50% of all claimants accessed paramedical or allied health services, with physiotherapists providing services to 40% with a median of 27 services per claim (Ruseckaite et al., 2012). Seventy percent of injured workers treated by physiotherapists have a musculoskeletal disorder and services for this subgroup are in the order of (median (IQR)) 25 (10-62) sessions per claimant (Berecki-Gisolf et al., 2013). These data, derived from the Victorian compensation systems, indicate a pivotal role for allied health, especially physiotherapists, in appropriate treatment of injured people and certification for timely RTW.

Facilitating a pathway back to work as part of any treatment strategy can be challenging to health care providers. Canadian and UK studies found that general practitioners (GPs) can struggle with managing consultations about RTW (Kosny et al., 2006; Cohen et al. 2010), with many GPs considering employment and RTW outside their health care provider role (Kosny et al. 2006). GP attitudes to recommending RTW appear to be influenced by doctor-patient relationships, beliefs regarding patient advocacy, inadequate consultation time, fears for personal safety, lack of willingness to complete compensation paperwork or interact with stakeholders (possibly due to the time cost), and limited knowledge of occupational health or the care-seeker's workplace (Cohen et al. 2010; Hussey et al., 2004). It is likely that many of these factors also influence the behaviour of physiotherapists.

Health and compensation systems can also be complex for injured workers (Kosny et al., 2011), agents and employers (Baril et al., 2003), and resultant confusion may affect timely RTW. Kosny et al. (2011) reported that injured workers face problems relating to the access to appropriate and timely care, universal confirmation and acceptance of diagnoses, communication between stakeholders along the claims continuum, and the identifying those with decision authority, especially when differing opinions between stakeholders occur. Compensation agent and employer interactions and dynamics with the injured worker and other stakeholders can assist or impede successful RTW (Baril et al., 2003). Understanding the factors influencing each party in facilitating RTW is important for the development of effective stakeholder education and efficient system changes.

Mazza et al. (2013) used a mixed methods approach to study the role of GPs in facilitating injured workers RTW through the appropriate use of medical certificates. Key findings of this report were that both certificate numbers and the period of illness certification increased from 2003 to 2010, with a small proportion of GPs (3.4%) accounting for nearly a quarter (24.8%) of certificates completed. Most initial certificates (71.4%) designated a worker as unfit for all duties. Reasons for the high number of "unfit" certificates were summarised based on analysis of focus group interviews: unclear definition of the role of the GP in RTW; reliance on worker feedback about work capacity; availability of alternative/modified duties; age and social circumstances of the worker; poor communication between stakeholders; high administrative burden; poor GP remuneration for the services provided; system barriers such as poor knowledge of policies and procedures or claim processing delays; and conflicting opinions between independent medical examiners and GPs. As a result, the certificate of capacity used in Victoria was redesigned to promote improved decision making and a complementary training package about the certificate, RTW processes and the Victorian compensation system was launched for GPs. While Mazza et al. (2013) focused on the role of GPs, the report signals the relevance of related work with other health care providers, such as physiotherapists, and the

potential to improve both certification and RTW processes with health professional education.

This project had two complementary components. The initial project focussed on reviewing systems that optimise appropriate certification of injured workers by physiotherapists. Physiotherapists and occupational physiotherapists who certify people for RTW were interviewed about their beliefs and practices, and perceived barriers and facilitators to appropriate certification. We also reviewed the methods that were being used to educate occupational physiotherapists in appropriate certification, evaluating them for elements that could be transferred to a self-directed learning module that included automated assessment of knowledge, beliefs and intended behaviours. During the course of the initial investigation, an agreement was reached between the Australian Physiotherapy Association (APA), TAC and WorkSafe Victoria (WorkSafe) to improve physiotherapy practitioner funding. The result was an expansion of the education material required to support this endeavour and a reduction in time available for completion. Under the agreed strategy, practitioners would be required to complete the education modules to qualify as registered providers for TAC/WorkSafe under a new payment structure. Physiotherapists who opted not to do the EIPF modules and register their completions with the TAC and/or WorkSafe would continue to operate under the existing physiotherapy policies for the respective organisations. This provided us with a comprehensive sample using (and providing feedback on) the education material. It also provided an opportunity to review state-wide metrics describing certification practices to assess the possible influence of the education on certification practices of physiotherapists. The challenge was to develop high quality education resources and to match the education material with the needs of the compensation agencies (TAC and WorkSafe), practitioners and clients.

1.2 Aims

The primary focus of this work was to determine strategies to assist physiotherapists to support timely RTW for injured workers.

1.2.1 Initial Project Aims

1. Evaluate current practices of Victorian physiotherapists in the management of injured workers and certification for return to work (RTW).
2. Review and describe physiotherapy RTW certification training resources and procedures currently used by the TAC and WorkSafe
3. Identify barriers and facilitators to appropriate RTW certification by physiotherapists
4. Gather feedback from physiotherapists who have participated in training regarding the effectiveness of RTW certification training resources and procedures
5. Adapt and pilot resources designed to educate physiotherapists in best practice in RTW certification of injured workers.

1.2.2 Extended Project Aims

1. Develop an on-line training program to meet the objectives of the Early Intervention Physiotherapy Framework (EIPF) program
2. Identify the barriers and facilitators to timely return to work in a group of compensation case managers
3. Report on the costs associated with the development and delivery of an on-line training program for mass distribution
4. Identify the efficacy of an on-line training program about the Victorian compensation system and return to work processes on client focused outcomes, such as return to work and compensation costs.

2. Method Overview

We utilised a mixed methods approach (review of literature, qualitative and quantitative research methods) to answer the key questions associated with our study aims. All recruitment and procedures for this study were approved by the Monash University Human Research Ethics Committee (Approval CF13/2082 – 2013001510).

The initial step in this project was to conduct a review of information on RTW relevant to physiotherapists in Victoria, Australia. This exploration was divided into two stages. In the first stage, we reviewed the published literature to identify modifiable barriers and facilitators to RTW following injury. In the second stage we reviewed information and education accessible to physiotherapists treating people with a compensable injury.

In parallel with the reviews, we planned an investigation into RTW certification practices of Victorian physiotherapists using data extracted from the ISCRR Compensation Research Database (CRD) of workers' compensation administrative claims data. Claims, payments, services and medical certificate data, between January 2003 and December 2012 inclusive, were extracted from the CRD. This step in the project proposed to examine the profile of clients with scheme payments for physiotherapy services, service provision by physiotherapists and patterns of certification of capacity by physiotherapists. TAC data were excluded from this analysis as medical certificates are not currently recorded on the CRD.

To develop our understanding of how physiotherapists interact with compensation system processes and RTW stakeholders, an in-depth qualitative interview study of occupational physiotherapists, non-occupational physiotherapists and compensation scheme case managers was conducted. The interview study data were analysed using thematic coding to identify the perceptions of barriers and facilitators to early RTW within the Victorian compensation system.

The extension of the primary project incorporated the development and assessment of the EIPF training program using an action research approach. Action research uses the process of plan, act, observe and reflect prior to commencing the cycle again (Kemmis et al., 2014). Assessment of the perceived efficacy of the EIPF on-line education on practitioner knowledge, attitudes and beliefs was assessed using a participant questionnaire completed before and after completion of education modules. In addition we analysed free text comments about the education material, answers to quiz questions and calculated the costs of developing and delivering the on-line training. A further interrogation of the CRD was also conducted to review pre and post

changes in practice through the review of service, certification and RTW data, and compare performance indicators for physiotherapists who completed the training to those who did not complete the training.

3. Review of Current Literature

3.1 Introduction

This literature review was conducted to determine what is known about interventions that are effective in facilitating return to work (RTW) following injury. Information sourced from the review was augmented by evidence collected from interviews with physiotherapists and case managers (reported in Section 4). The review also enabled assembly of information relevant to both systems of care for injured workers and the development of appropriate education to support health service providers.

3.2 Aim

This review of literature was designed to 1) identify barriers and facilitators that have been proposed to influence RTW and 2) identify what is known about the potential to influence the RTW trajectory by addressing those barriers or facilitators.

3.3 Method

The review was conducted in two stages: the first sought information on the barriers and facilitators to timely and sustained RTW; the second identified controlled trials that investigated the effect of strategies designed to address the modifiable barriers and facilitators. Interventions had to be compared to alternative strategies and measure the outcomes of work time lost or proportion of people who RTW within specified follow up periods. Strategies had to be suitable for partial or full implementation by a primary health care professional.

3.3.1 Stage 1 Overview: Systematic reviews reporting the barriers and facilitators to RTW

Inclusion exclusion criteria

There were specific criteria for inclusion in Stage 1 of the review:

- systematic reviews of factors affecting RTW including barriers, predictors, or facilitators of RTW
- for an intervention to be considered a facilitator, the primary focus of the intervention had to be on facilitating RTW (rather than addressing a specific health issue)

- published in English in a peer reviewed journal and
- full text was available for review
- reviews that dealt with RTW for populations with specific chronic conditions such as cancer, respiratory disease and HIV related conditions were excluded.

Search strategy

A list of search terms were compiled from previous research into modifiable and non-modifiable barriers and facilitators associated with RTW, and intervention studies assessing RTW outcomes. Suitable MESH terms and free text were developed (Table 3.1). Searches were conducted of MEDLINE, Cochrane Database of Systematic Reviews, CINAHL, PsycINFO, ABI/Inform and EMBASE up to December, 2014. Systematic reviews written in English were filtered from the search yield and abstracts scanned. Duplicates and clearly irrelevant reviews were removed by one researcher (CG).

Table 3.1 Search terms by domains work, injury, return to work.

	Work	Injury or compensation	Return to work
WORDS	occupat*	injur*	return to work
	work*	accident	modified dut*
	job	traffic	part-time employ*
	task	motor vehicle	part-time work
	employ*	TAC	part-time duties
		Worksafe	occupational physiother*
		Work Cover	back to work
		insurance	*re-employ*/
		compens*	modified tasks
		industrial disease	sick leave
			absence
			time off work
			return to employment
			work loss
			work disability
			work resum*
			absenteeism

Terms within each column were combined using OR and columns were combined using AND. Adjacent terms were used to link terms closely associated.

Identification and selection of studies

Potentially relevant abstracts were compiled. Two authors independently reviewed the title and abstract for compliance with inclusion and exclusion criteria. Disagreements on eligibility for inclusion were discussed until consensus was achieved. Two other authors were available for consultation in the event that consensus was not achieved. Reference lists of relevant reviews were checked for other eligible reports. The full texts of potentially eligible studies were read, and inclusion confirmed.

Barriers and facilitators that had been studied for association with RTW were extracted. These barriers and facilitators were coded and summarised under representative headings to facilitate review and reflection. No attempt was made to assess review

quality or the quality of the studies that contributed to the reviewers' conclusions. This stage of the review had the primary purpose of gaining an overview of the field and informing inclusion criteria and search strategy for the second part of the review.

3.3.2 Stage 2 Overview: Empirical studies assessing the effects associated with addressing barriers and facilitators to RTW

Inclusion criteria for the second stage of the review were randomised or clinically controlled trials, published in English, addressed any modifiable barriers or facilitators (identified in the first part of this review) for RTW following a compensable injury, and reported on strategies that were suitable for partial or full implementation by a primary health care professional. Studies that tested effects of interventions for populations with specific conditions such as cancer, respiratory diseases, acute brain injury and HIV were not included.

The search strategy used in stage 1 was rerun with the additional standard Cochrane trial terms included. Reference lists of relevant reports and reviews found in Stage 1 were also scanned for relevant trials.

The methodological quality of included studies was evaluated using the PEDro scale (Verhagen et al., 1998). Data were extracted in the following categories: participant characteristics (number, percentage female, eligibility criteria for study participation, current work status, severity of condition); study design (intervention conditions, control conditions, study duration, outcomes assessed); modifiable risk factors and strategies used to modify or address each factor; baseline and outcomes data on relevant RTW outcomes: for dichotomous data number of participants with a specific outcome and total number of participants for intervention and control groups after the intervention and for continuous data sample size, means and standard deviations of measurements (taken before and after the intervention for intervention and control groups); and outcomes for items 2-11 of the PEDro scale. Meta-analyses were conducted using RevMan software (version 5.3, The Nordic Cochrane Centre, The Cochrane Collaboration, Copenhagen) where

- comparable comparison conditions were tested in independent studies
- and number of participants returning to work or number of sickness/absence days were reported

Outcomes data closest to 6, 12 or greater than 12 months were extracted.

Where more than one intervention group was compared to the same control group, control group numbers were proportionally reduced using standardised data combining rules (Higgins & Green, 2011). Fixed effects modelling was conducted in

the first instance and output statistics examined to determine whether a random effects model was indicated. This was performed when the I^2 statistic was greater than 50%, or the chi square test for heterogeneity was less than 0.1 (Higgins & Green, 2011).

Data Reporting

Risk ratios were reported for dichotomous RTW data and mean differences for days absent/time to RTW. Higher risk ratios and data points that fell to the right of the line of no effect on each forest plot for dichotomous data indicated a higher number of people who returned to work in the intervention compared to the comparison group. Negative mean difference scores and data points on the left of the line of no effect on the forest plots for continuous data indicated fewer absences or earlier RTW for the intervention compared to comparison groups.

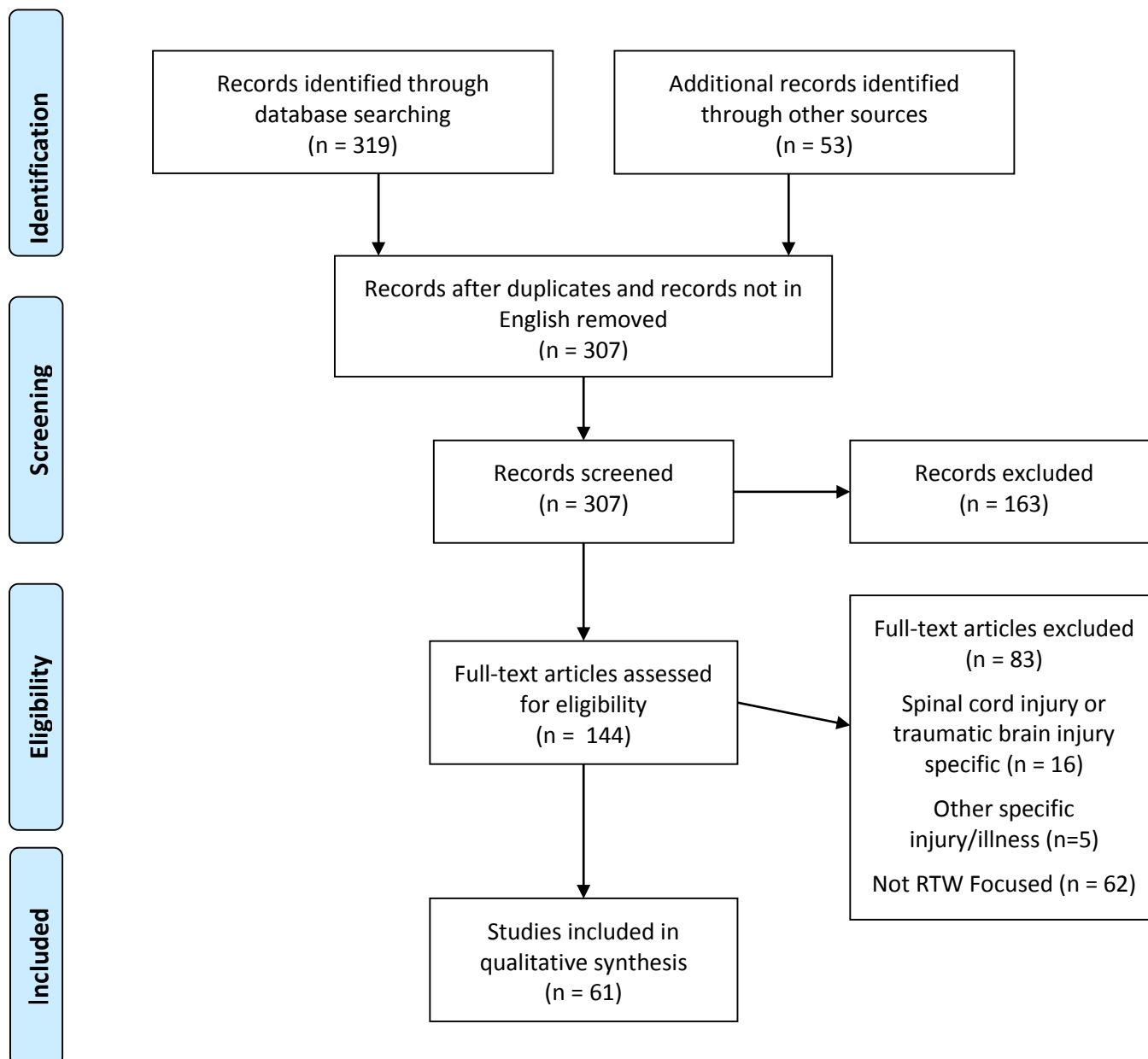
3.4 Results

3.4.1 Stage 1 Systematic review results of barriers and facilitators

The Stage 1 search for barriers and facilitators to RTW identified 372 titles, of which 65 were removed due to duplication and non-English language, leaving 307 reviews for possible inclusion. The first review of title and abstracts resulted in removal of a further 163 reviews, leaving 144 for full text screening. The PRISMA flow chart (Moher, et al. (2009)) is reported in Figure 3.1. Full text review identified 61 systematic reviews that met inclusion criteria. Factors proposed to influence the RTW trajectory in the included reviews were summarised under headings: personal profile; health; symptoms; beliefs, attitudes and psychological state; work; conflicts; provider behaviours; and other facilitators to RTW. Most of the review papers identified in this report focused primarily on either barriers encountered that prevented RTW (n=22) or strategies or programs designed to facilitate timely RTW (n=27). The 61 systematic reviews summarised in the results are listed in Appendix 3.1.

The factors reported to be associated with RTW are summarised below, and factors identified by four or more independent reviews are highlighted in yellow. Where conflicts existed between included studies this is also noted under each category.

Figure 3.1 PRISMA flow diagram for identification of systematic reviews reporting the barriers and facilitators to RTW



Personal profile

Age - older (1, 2, 3, 5, 6, 12, 15, 22, 24, 31, 46, 49, 52, 53, 56), gender - female (1, 2, 5, 6, 9, 10, 11, 12, 15, 22, 24, 31, 46, 49, 52), attorney involvement (49), benefits/wage replacement ratio (2, 3), communication and language barriers (10), company sick pay (3), **compensation (12, 16, 28, 49, 52)**, domestic strain (9), education (6, 11, 53), ethnicity (5) and ethnic minority (11), family patterns (10), family/social support (5, 57, 58), fibre intake (57), health risk behaviours (15), insurance policy terms (2), interpreting insurance rules (47), isolation (49, 55), length & amount of financial incentives (7), life events (49), **life style (2, 3, 31, 18)**, **marital status (3, 11, 15, 52)**, number of children at home (12), physical activity (55, 57, 18), place of residence (1), psychological function (18), quality of life (55), social/behavioural skills (18), **socio-economic status/demographics (2, 5, 11, 31, 53, 55)**, substance/alcohol use (24, 55, 57), thinking/problem solving (18), transport access (57).

Health

Amputation level factors (5), claim duration (49), clinical test outcomes (51), compassionate leave (57), diagnosis (52), **disability or functional impairment (12, 22, 31, 44, 47, 49, 52, 57)**, fatigue (49, 57), health service utilisation (55), injury severity (6), LBP cause (49), longer employment (22, 49), medical history (31), medication use (2, 15), musculoskeletal capacity (53), no attempt at RTW (3), no RTW (within first 505 days of claim) (3), number of surgeries (6), physical examination (49), poor general health (49, 57), posture factors (49), previous history LBP (51, 56), previous hospitalisation (12), previous injury/illness (2, 12, 44), previous sick leave (22), prior health and sick leave (5), psychological illness (3, 15, 24), self-reported health (55), sick certificate length (47, 56, 57), sleep difficulties (57), somatic complaints (46), walking distance/mobility issues (5), X-ray/MRI (56). **Conflicts:** BMI not related to RTW (49), overweight related to RTW (53).

Symptoms

Long-term pain severity (51), **pain (22, 31, 44, 49, 57)**, pain catastrophizing (17), pain on standing (12), radiating/radicular pain (12, 44, 49), symptom severity/duration (8).

Beliefs, attitudes and psychological state

Absenteeism tolerance (58), amplified health concerns (57), burnout (15), **depression (12, 34, 49, 57)**, distrust (9), emotions (31), emotional distress (57), fear avoidance (12, 17, 28), health beliefs (31), hysteria (49), injury perception on RTW (17), lack of motivation to RTW (57), locus of control (28, 49), mal-adapted coping (11), negative enduring psych/personality factors (57), negative health/disability perception (57), norms and values (10), perceived ability to work (51), physical and psychological illness link (13), psychosocial factors (24, 56), psychosocial risk situations (24),

psychosomatic concerns (15, 57), religious beliefs (10), RTW expectation (17, 28, 52, 57), self-identity (9), social expectations (10), suicidation (55).

Work

Bend/twist work position (22), career opportunities (55), delayed reporting (44), heavy work/physical demands/work demands (1, 3, 8, 13, 20, 22, 23, 31, 44, 49, 53, 56, 58), injury at work (3, 57), job problems (12), job satisfaction/ dissatisfaction related to RTW (12, 22, 51, 56, 58), lack of autonomy (15, 49, 53), lack of fairness (15, 58), lack of managerial involvement (58), light duties availability (49, 57), limited work support (20), low job control (1, 15, 49, 58), not full-time work (58), occupational class (2, 52), poor quality leadership (58), previous job type (5), problems with colleagues (12), reorganizational stress (58), shorter job tenure (44, 57), unemployment risk (3), vibration (49), violence (20), work flexibility, variation, participation, work related life events (49), work psychosocial factors (31, 56, 58), work unit separation (57). **Conflicts:** blue collar/manual occupation related to RTW (6), company size related to RTW (52), industry/company size not related to RTW (49), occupation not related to RTW (49).

Provider behaviours

Case managers accept doctors recommendations rather than rely on own decision (48), case manager uncertainty managing clients/contacts (48), certificate opinion differences between doctor and patient (47), difficulties deciding on certificate length (47), longer time to treatment (58), no standard measure to inform vocational rehabilitation and target treatment (18), quality of process of care (49), RTW co-ordinator skills (work assessment, clinical interviewing, problem solving, workplace mediation, knowledge of business, legal aspects, medical knowledge) (45), traditional biomedical education based on injury model (56).

Facilitators of RTW

Access to treatment (41), claims registration, RTW coordination, workplace assessment, job analysis, job replacement within organisation (21), clinic-based therapy (34), communication between GP and injured workers (38), communication, cooperation and common agreed goals between work, occupational health team, supervisors, management, primary health care provider considered important (56), contact between stakeholders (4), continuing ordinary activities of daily life (56), doctor/patient agreement (47), early contact between worker & employer (19, 50), early intervention and multidisciplinary team (26), early rehabilitation (32), early RTW (59, 60), education (34, 56), education, counselling, exercise, medical therapy and ergonomics to increase work ability (32), education, physiotherapy component or vocational or work rehabilitation (50), elimination of risks in workplace (38), flexible

time schedule (13), ergonomic evaluation/intervention (19, 50, 59, 60), exercise and worksite visit (60), formal psychological & occupational interventions (4), greater than 2 years on the job (12), health promotion (1), **higher expected recovery/RTW expectations (6, 31, 40, 61)**, higher job involvement (5), interventions to foster concerted action (4), less than 30 days to treatment (12), light mobilization (12), light/sedentary job (46), **modified duties (12, 38, 56, 59)**, multidisciplinary rehabilitation (39, 61), multi-factorial, multidiscipline (50, 54), mutual trust with case management (7), navigation through disability management (41), occupational and clinical interventions combined (32, 41, 60), occupational physicians certifying shorter leave (47), ongoing coordination with insurance party, healthcare system and compensation case managers (21), OT as part of multidisciplinary treatment (14), OT specific interventions (14, 29), personal advisors & individual case management (7), physical conditioning programs including a cognitive-behavioural approach (43, 50), physician management (34), positive role models (57), psychological interventions (34), referral to occupational medicine clinic (12), **RTW coordination (4, 21, 42, 50)**, **RTW plan/goals/interventions (19, 25, 30, 32, 38)**, specific exercise for acute LBP (43), strategies assisting migrant/minority groups and cultural competency (10), **supervisor/co-worker support (3, 11, 44, 49, 58)**, **support of employer (employer/employee decisions (26), employer support (5), supervisor involvement (60), good work leadership (33))**, time based interventions - graduated RTW (26), timeliness, intensity and proactive nature of rehabilitation interventions (38), treatment targeting work function e.g. **work hardening (27, 32, 40, 41)**, work accommodation & health professional contact with employer (19, 50), **work environment interventions (4, 21, 34, 38, 59)**, workplace low intensity psychological rehabilitation (41), workplace visit (29).

3.4.2 Stage 2 Results of the effects of interventions addressing barriers and facilitators to RTW

A total of 162 unique reports meeting inclusion criteria were identified through the search (Figure 3.2). 119 reports were removed based on title and abstract leaving 43 full-text articles for review. As 13 reports were subsequently considered ineligible for inclusion, data were extracted from 30 papers (Appendix 3.2). Extracted data are summarised in Table 3.2. Interventions were categorised as multidisciplinary (MD), workplace (WP), education (Ed), cognitive behavioural therapy (CBT), graded activity (GA) or combinations of these. Most studies provided usual care (UC) for the comparison group, although complete bed rest, physical training, and alternative combinations of interventions were also reported. Studies comparing comparable conditions were pooled in meta-analysis.

Figure 3.2 PRISMA flow diagram for identification of empirical studies assessing the effects associated with addressing barriers and facilitators to RTW

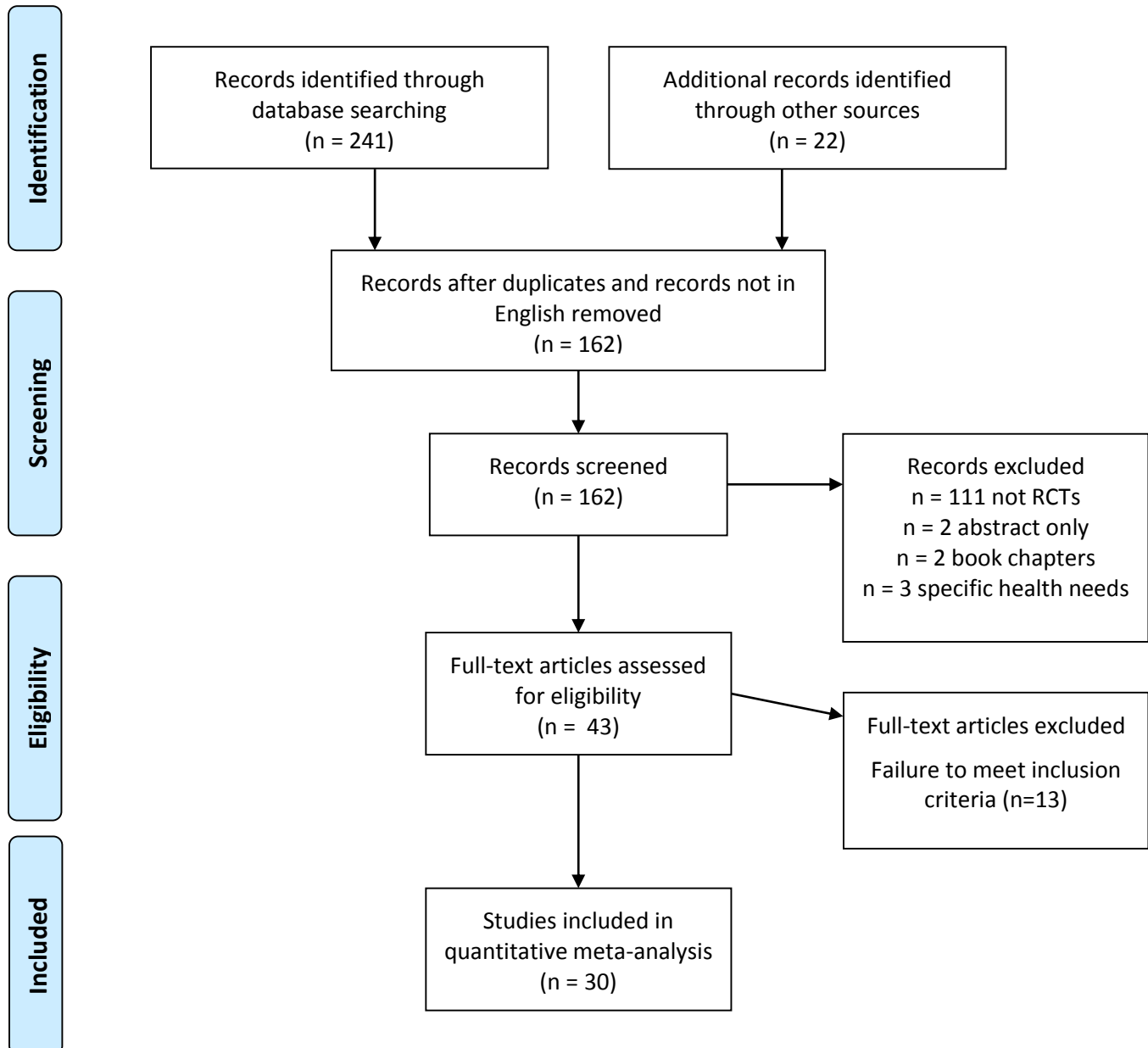


Table 3.2 – Characteristics of included studies

Interventions: WP: Workplace, MD: Multidisciplinary, GA: Graded Activity, CBT: Cognitive Behavioural Therapy, Ed: Education, UC: Usual Care; Int: Intervention, Com: Comparison.

Other abbreviations: 6m: 6 months, 12m: 12 months, FT: full-time, RTW: return to work

First author (year) PEDro QA Score(0-10)	Baseline injury/sick leave duration (weeks)	Intervention (Int)	Comparison (Com)	Outcome (follow-up period)	Int (n)	Int: n(%), mean(sd), median(IQR)	Com (n)	Com: n(%), mean(sd), median(IQR)	Result
Anema (2007) 7/10	Phase 1: 2-6	WP, MD	Ed, UC	RTW 2m	96	43(45%)	100	41 (41%)	P >.05
				Sick days 12m		Median:77 days (IRQ, 56–126 days)		Median:104 days (IRQ, 56–166 days)	P =.02
	Phase 2: >8	GA	Ed, UC	Sick days 12m	55	Median:144 days (IQR, 113–233 days)	57	Median:111 days (IQR, 74–153 days)	P = 0.03, favours those without graded activity intervention
	Phase 1: 2-6 and Phase 2: >8	WP, MD +/- GA	ED, UC +/- GA	RTW 12m	96	87(90.6%)	100	83(83%)	P >.05
				Sick days 12m	96	Median:143 days (IQR, 108–250 days)	100	Median:126 days (IQR, 83–171 days)	P >.05
Arnetz (2003)	< 12	WP, MD (including	UC	Sick days 6m	65	6m:110 (52.4)*	72	6m:131.1 (50.1)*	P <.05

2/10		case managers)							
				Sick days 12 m		144.9 (95.1)		197.9(118.8)*	P<0.01
Bendix (2000) 4/10	> 17	Functional restoration (3 week whole day program)	One hour daily physical exercise	Work capable	48	36 (75%)	51	35 (68.6%)	P>.05
				Sick days 12m		5.5 (IQR:0-113)		2.5 (IQR:0-301)	P>.05
Blonk (2006) 6/10	3	Grp 1.CBT, WP	UC	Time to FT RTW (days)	36	256(126)	34	252(123)	P>.05
		Grp 2. CBT,WP,MD + Ed (fosters work resumption)	UC	Time to FT RTW (days)	35	177(119)	34	252(123)	P < .01
Bültmann (2009) 7/10	4-12	WP, MD	UC	Sick days 6m	66	19.4(13.3)	47	24.4(13.4)	P = .034
				Sick days 12m		27.4(23.6)		41.6(27.9)	P = .006
Fleten (2006) 5/10	2	Ed	UC	Sick days 12m	495	97	495	105.3	P>.05
Godges (2009) 5/10	< 12	Ed	UC	RTW 3m	16	16(100%)	18	16(83.3%)	P = 0.27
				Days to RTW 6m		22.8(12.5)^		47.1(43.2)^	P=.04
Greenwood (1990) 3/10	< 12	MD (early intervention within 2	UC	Sick days 18m	121	109.7(148.7)	163	102.6(147.9)	P>.05

		weeks of injury)							
Hagen (2000) 5/10	8-12	MD, Ed (stay active)	UC	Sick days 12m	237	95.5(104.5)	220	133.7(112)	P <.05
				FT RTW 6m		145(61.2%)		99(45%)	P <.05
				FT RTW 12m		162(68.4%)		124(56.4%)	P <.05
Hagen (2003) 6/10	8-12	MD, Ed (stay active)	UC	Sick days	237	125.7(116.6)	220	169.6(133.9)	P<.05
				FT RTW 12 m		163(68.4%)		126(57.3%)	P >.05
				FT RTW 24m		145(61.2%)		144(66.1%)	P >.05
				FT RTW 36 m		150(63.8%)		134(61.8%)	P >.05
Haldorsen (1998) 6/10	8	MD, CBT, Ed	UC (GP)	RTW 12m	312	163(52%)	157	84(53%)	P <.05
Haldorsen (2002) 6/10	8	Grp 1 Extensive CBT, MD, ED	UC	RTW 14m	169	59%	263	51%	P <0.04
		Grp 2 Light MD, Ed			222	57%	263	51%	P=.05
Indahl (1995) 4/10	8	Ed	UC	RTW 6.2m	463	324(70%)	512	205(40%)	P <0.001
Indahl (1998) 7/10	8	Ed	UC	RTW 60m	245	198(80.8%)	244	160(65.6%)	P<.05
Jensen (2011)	3-16	MD, including case	advice	RTW 12m	176	125(71.0%)	175	133(76.0%)	P>.05

8/10		manager and rehab plan, advice							
				Days to RTW 12m		18		14	P=0.14
Lambeek (2010) 7/10	> 12	CBT, WP, MD, graded activity	UC	Sick absence days 12m	68	Median: 82(IQR:51-164)	66	Median: 175(IQR:91-365)	P =0.003
Leclaire (1996) 6/10	< 12	Ed	UC	RTW	82	80(98%)	86	85(99%)	P<.05
				Days to RTW 12m		Median:33		Median:33	P>.05
Lindström (1992) 5/10	6	MD, Ed, WP, GA	UC	RTW 12m	51	41(80%)	52	30(58%)	P<.05
				Days to RTW 12m		70(88.9)		105.7(109.2)	P>.05
Loisel (1997) 6/10	4-12	WP	UC	Sick days 12m	22	Median:67	26	120.5	P >.05
	4-12	MD, Ed	UC	Sick days 12m	31	Median:131	26	120.5	P >.05
	4-12	MD, Ed, WP	UC	Sick days 12m	25	Median:60	26	120.5	P =0.01
Marhold (2001) 5/10	8-26	CBT	UC	Sick days 6m	18	21.0(25.1)	18	39.7(25.3)	P <.05
	>52	CBT	UC	Sick days 6m	18	49.4(17.4)	18	53.7(10.5)	P >.05
Mitchell (1994) 5/10	13	MD	UC	RTW 12m	271	214(79%)	271	211(78%)	P >.05
Mortelman s (2006) 4/10	> 4	Other: Enhanced communicati on between	UC	RTW 12m	505	372(89.6%)	1059	728(87.4%)	P >.05

		health professionals							
				No Sickness benefit 12m	505	434 (86%)	1059	890 (84%)	P >.05
Nystuen (2006) 6/10	> 7	WP, Ed (solution focussed)	UC	RTW 6m	46	18(39.1%)	37	9(24.3%)	P >.05
				Sick days 12m	41	Mean:87	34	Mean:90.7	P >.05
Rossignol (2000) 8/10	4-8	MD (follow CPG)	UC	RTW 6m	45	35(77.8%)	45	33(73.2%)	P >.05
Rozenberg (2002) 7/10	< 3/7	Ed	Bed rest	Sick leave taken 3m	83	45(54.2%)	88	77(87.5%)	P <0.0001
Scheel (2002) 8/10	> 2	Gr1 MD, Ed	UC	Sick days 12m	2232	127.7(122.8)*	1902	128.5(122.1)*	P >0.05
				RTW <50 weeks	2232	1986(89%)	1902	1695(89.1%)	P >.05
		Gr2 Ed	UC	Sick days 12m	2045	124.8(122.1)*	1902	128.5(122.1)*	P >.05
				RTW <50 weeks	2045	1841(90%)	1902	1695(89.1%)	P >.05
Schultz (2008) 4/10	4-10	WP, MD, Ed	UC	RTW 6m	35	25(71.4%)	37	21(56.8%)	P >.05
Schultz (2013) 3/10	4-10	WP, MD, Ed (flexible)	WP, MD, Ed (fixed)	RTW 6m	34	22(64.7%)	29	23(79.3%)	P >.05
				RTW 12m	34	29(85.3%)	29	27(93.1%)	P >.05

		WP, MD, Ed (flexible)	WP, MD, Ed (fixed)	Sick days 6m	34	79(38)	29	94(43)	P >.05
				Sick days 12m	34	86(48)	29	108(68)	P >.05
van den Hout (2003) 6/10	> 6	GA, MD, Ed (graded behaviour and problem solving)	GA, Ed (graded behaviour and education)	FT RTW 6m	44	33(75%)	37	26(70.3%)	P >.05
				FT RTW 12m	41	35(85.4%)	35	22(62.9%)	P <.05
				Sick days 6m	44	24.5(31.3)	37	34.2(44.3)	P >.05
				Sick days 12m	41	18.5(36.4)	35	37.9(50.1)	P <.05
Verbeek (2002) 8/10	≥ 2	Early Intervention by occupational physician	Early Intervention by work supervisor	Time to RTW	61	51(IQR:22-110)	59	62(IQR:22-174)	P >.05
				Sick days	61	125(110)	59	145(124)	P >.05
				RTW 3m	61	42(69%)	59	37(63%)	P >.05
				RTW 12m	61	57(93%)	59	51(86%)	P >.05

* SD calculated from SEM

^ Mean (SD) calculated from data presented in the report by Godges et al. (2009)

Data for meta-analysis were available for 26 studies. A further 4 studies were excluded from the meta-analysis as they did not use usual care as the comparison. Four comparisons were conducted for RTW and four comparisons were conducted for days absent/time to return to work. For each comparison, 3 sub-group analyses (6, 12 and greater than 12 months) were conducted. Comparisons included multidisciplinary interventions versus usual care, workplace interventions versus usual care, education interventions versus usual care and any intervention versus usual care. A sub-group comparison of early (<12 weeks) and late (> 12 weeks) interventions was planned, however only three studies were identified that clearly reported an eligibility criteria of being injured for longer than 12 weeks. Two of these studies could not be pooled due to different comparison groups or data not suitable for meta-analysis. A detailed description of the interventions and comparison groups in each study and associated meta-analyses or exclusion reasons are provided in Appendix 3.3.

3.4.3 Stage 2 Meta-Analysis and Results

Given the complex variations in included studies, the results of each meta-analysis are presented with discussion of these results, in addition to a formal discussion section that reviews the overall findings.

3.4.4 Meta-analysis for multidisciplinary interventions versus usual care

RTW outcomes (n = 9 studies)

Figure 3.3 shows the studies and participants at each of the follow-up time periods that reported RTW data.

The pooled risk ratio for RTW was

6 months: 1.23 [95%CI 1.04, 1.46], favours intervention, **significant (Z=2.44, p=0.01)**

12 months: 1.08 [95%CI 1.00, 1.18], not significant

>12 months: 1.04 [95%CI 0.90, 1.20], not significant

Lost time outcomes (n = 7 studies)

Figure 3.4 shows the studies and participants at each of the follow-up time periods that reported days absent/time to RTW.

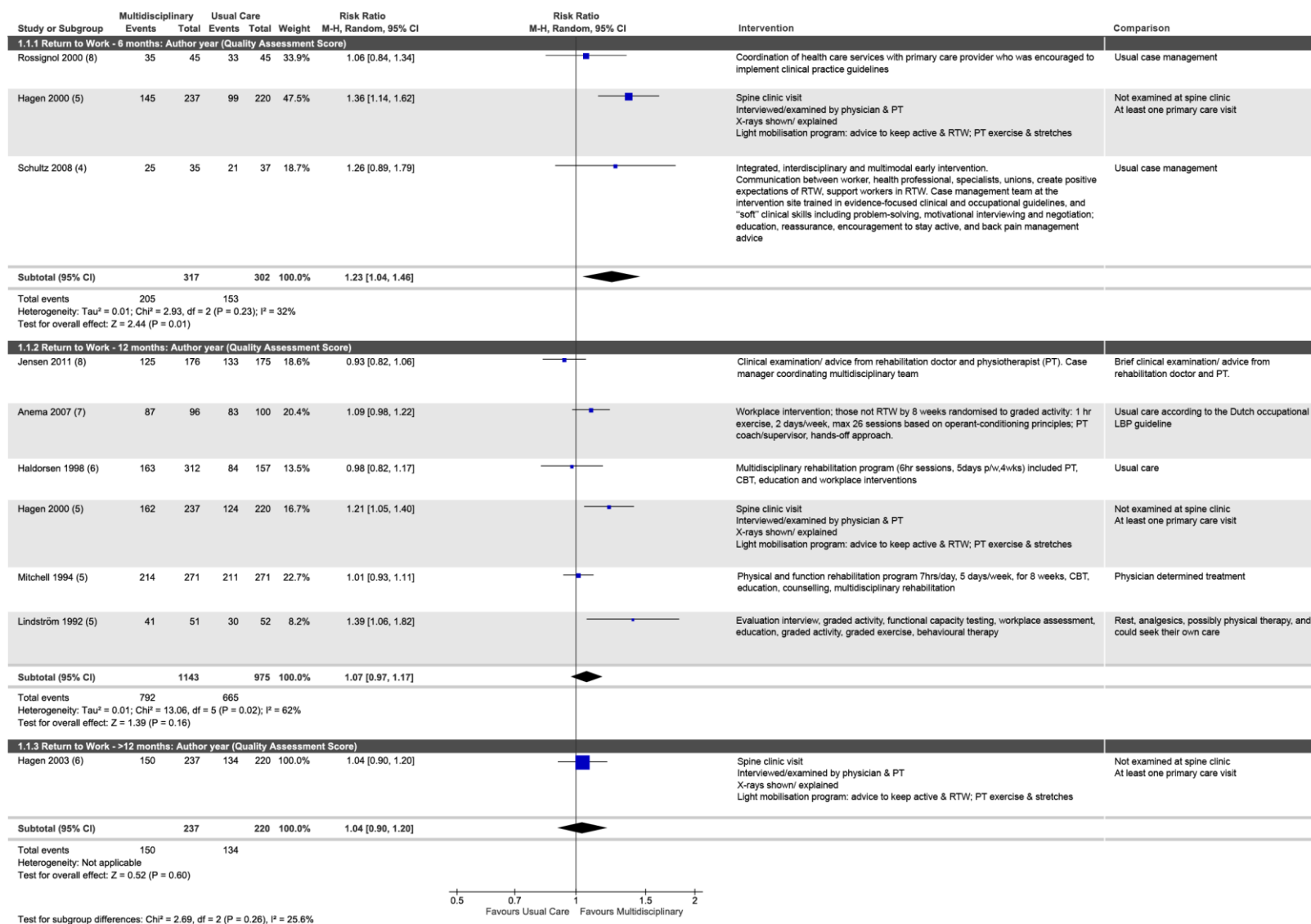
The mean difference between absence days/time to RTW for multidisciplinary interventions versus usual care was

6 months: 11 fewer days for intervention (95%CI -26.04, 4.32) not significant

12 months: 19 fewer (95%CI -34.53, -3.91), **significant (Z=2.46, p=0.01)**

>12 months: 44 fewer (95%CI -67.00, -20.80), **significant (Z=3.73, P<0.001).**

Figure 3.3 Multidisciplinary interventions versus usual care for return to work outcomes (did/did not return to full-time work) at 6, 12 and greater than 12 months. Each study is ranked by quality assessment score (highest to lowest)



The multidisciplinary interventions followed no standardised format and were, in most studies, compared to usual care (Figure 3.3, Appendix 3.2). Most encouraged activity. Most removed or limited passive therapies. Many included cognition or behaviour modification programs.

RTW outcomes at 6 months

Rossignol et al. (2000) found no effects attributable to improving acute care/primary care communication processes. Hagen et al. (2000) found a modest effect at 6 months for program personalisation, explanation of care and a light activity program compared to at least one primary care visit. Schultz et al. (2008) appeared to provide a complex number of supportive elements creating positive expectations around RTW, improving communication between providers, undertaking a light activity program and training the case management team in communication and negotiation with injured workers. The sample size was small and the study quality was not strong. The effects associated with multidisciplinary approaches (high quality study RR 1.06, pooled RR 1.23, for greater proportion of injured workers returning to work within 6 months compared to usual care) might be cost effective if a larger, high quality study confirmed the estimate of the pooled effect.

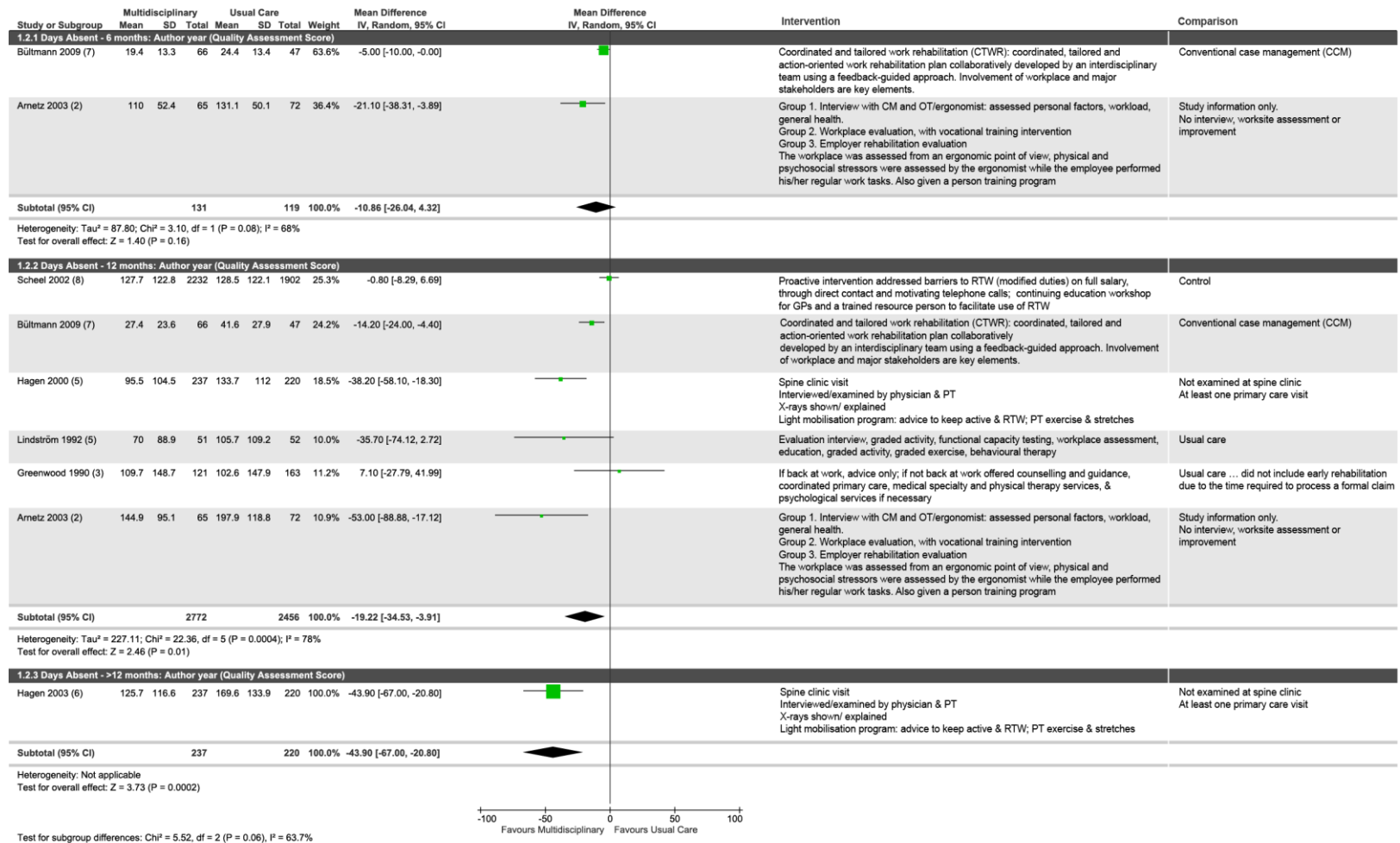
RTW outcomes at 12 months

Pooled outcomes indicated no difference in RTW rates at 12 months when multidisciplinary interventions were compared to usual care. Both Mitchell et al. (1994) and Haldorsen et al. (1998) compared a rehabilitation program to usual care and found no difference in RTW rates at 12 months. Hagen found a small sustained effect at 12 months for personalisation, explanation of care and a light activity program (RR 1.21). Lindström et al. (1992) found moderate effects for graded activity but the comparison group were given rest and analgesia and it does not appear that they were educated to stay active, so it is unlikely the observed effects would be found compared to standard care today. It is also possible that the usual care provided by physiotherapists was passive therapy, with the potential for adverse effects amplifying the apparent intervention group outcomes. Jensen found no significant difference between groups but effects favoured the group who had a case manager in addition to the support of a doctor and physiotherapist, signalling a possible effect attributable to education of case managers.

RTW outcomes at >12 months

Only Hagen et al. (2003) provided data on outcomes beyond 12 months, where effects observed earlier were no longer present.

Figure 3.4 Multidisciplinary interventions versus usual care for days absent/time to return to work outcomes at 6, 12 and greater than 12 months. Each study is ranked by quality assessment score (highest to lowest)



Lost time at 6 months

The study by Arnetz et al. (2003) indicated the potential for large differences in days lost (21 days) over a 6 month follow up period when an interview to determine individual worker needs was combined with a tailored work duties evaluation/improvement, and a personal training program. The large effect needs to be considered in the light of the weak quality in the study design where there were many opportunities for bias to affect results. A smaller effect for a program with similar intentions was identified in the higher quality design study by Bültmann et al. (2009) (5 days reduction in time to RTW). The large variance between the studies triggered a random effects meta-analysis, under which no significant difference between groups was found. The conservative view of the data (5 days reduction in RTW) warrants assessment of the cost of implementing the complex intervention. It appears unlikely (even if the intervention was rolled out on a large scale) that the investment would return significant financial gain to insurers, given the costs associated with developing and monitoring individualised programs.

Lost time at 12 months

The study by Scheel et al. (2002) found no effect associated with encouraging GPs to refer people back to modified duties. Effects associated with Bültmann's (2009) program of coordinated RTW were still apparent at 12 months, with a difference between groups of around 14 days. Hagen et al. (2000) (light graded activity) and Lindström et al. (1992) (coordinated RTW and graded physical activity program) found similar 12 month outcomes in favour of the group advised to stay active or undertake physical activity; this raises the question regarding whether it was the physical activity component in the more complex RTW intervention by Lindström et al. (1992) that might be responsible for the observed effect. Both studies had flaws and were vulnerable to bias that may have inflated the magnitude of the effect (a reduction in around 36-38 days over a 12 months period for those advised to stay active). Greenwood et al. (1990) found no effect attributable to an early intervention that supported RTW. Arnetz et al. (2003) (QA score 2/10) found much greater effects than any other study for the combination of personalised assessment, work duties modification (with employer engagement) and a personal training program. The intervention might be cost effective, if the results could be replicated in a high quality study, but could not be assumed when so many sources of bias may have affected these outcomes. Only Hagen et al. (2003) assessed participants at two and three years, and reported ongoing benefits in work days lost for those in the intervention group. The overall pooled effect indicating around 19 days reduction in lost work time includes data from very low quality studies. Higher quality studies indicate potential gains between 1 day and 14 days

Lost time at >12 months

Only one study (Hagen, 2003) reported data for follow up beyond 12 months. The reported days lost saving of 44 days requires verification in an independent study.

3.4.5 Meta-analysis for generalised workplace interventions compared to usual care

RTW outcomes (n = 4)

Figure 3.5 shows the studies and participants at each of the follow-up time periods that reported RTW data.

Non-significant risk ratios for RTW were reported for 6 and 12 months respectively.

6 months: 1.33 [95%CI 0.97, 1.81], not significant

12 months: 1.20 [95%CI 0.93, 1.54], not significant

Lost time outcomes (n = 3)

Figure 3.6 shows the studies and participants at each of the follow-up time periods that reported days absent/time to RTW.

6 months: 5 fewer days [95%CI -10.00, 0.00], not significant $p = .05$

12 months: 32 fewer days for intervention [95%CI -62.78, -1.28], **significant**
($Z=2.89$, $p=0.04$)

RTW outcomes at 6 months

Only two studies (Nyusten (2006) and Schultz (2008)) provided data for analysis. Nyusten focused on coping strategies relevant to RTW, and Schultz focused on coping strategies in addition to integrated case management. Neither were high quality studies and neither appeared to focus on workplace or work activity modification. The effect of workplace interventions is an area that appears to warrant additional research.

RTW outcomes at 12 months

The coordinated RTW implemented by Lindström et al. (1992) resulted in better outcomes at 12 months than the study by Anema et al. (2007) for apparently similar styles of workplace interventions and controls. While both studies omitted blinding of subjects, therapists and assessors, Lindström et al. also omitted to conceal allocation or analyse data using “intention to treat” analysis. Per protocol analysis and other sources of bias may account for the differences seen in these two studies and indicate the need for confirmatory studies.

Days lost outcomes at 6 and 12 months

The greatest impact on days to RTW was demonstrated by Blonk et al. (2006) who applied specific RTW and workplace strategies by labour experts and compared this to a minimal medical care model (mean difference 75 days in favour of the intervention group). However, the large standard deviations within groups and the wide 95% confidence intervals around the mean difference indicate a highly variable response by individual participants. Bültmann et al. (2009) recruited participants with 4 to 12 weeks of work absence and also provided coordinated and tailored work rehabilitation intervention for up to 3 months; they found a substantially smaller difference between groups (mean difference 14 days in favour of the intervention group). The pooled estimate of effect (32 days) is likely to be an overestimate given the influence of a single study with uncharacteristically large effects. The highest quality study identified an effect of 14 days reduction in time lost.

Figure 3.5 Workplace interventions versus usual care for return to work outcomes (did/did not return to full-time work) at 6, 12 and greater than 12 months. Each study is ranked by quality assessment score (highest to lowest).

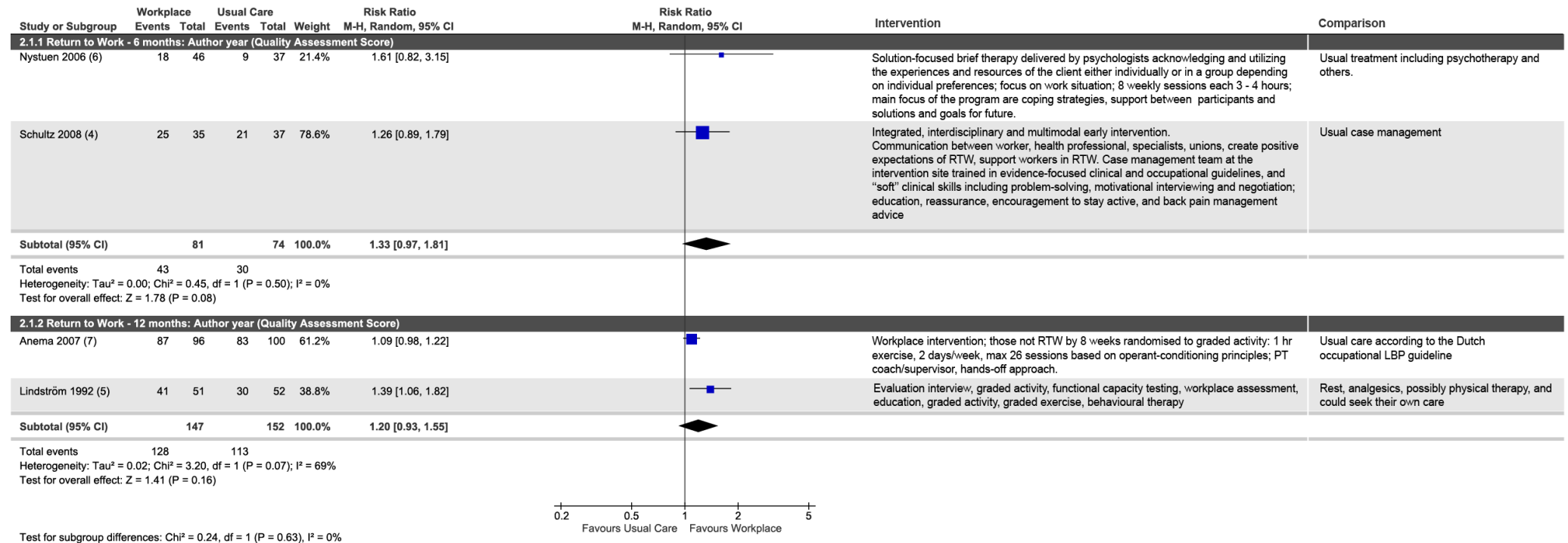
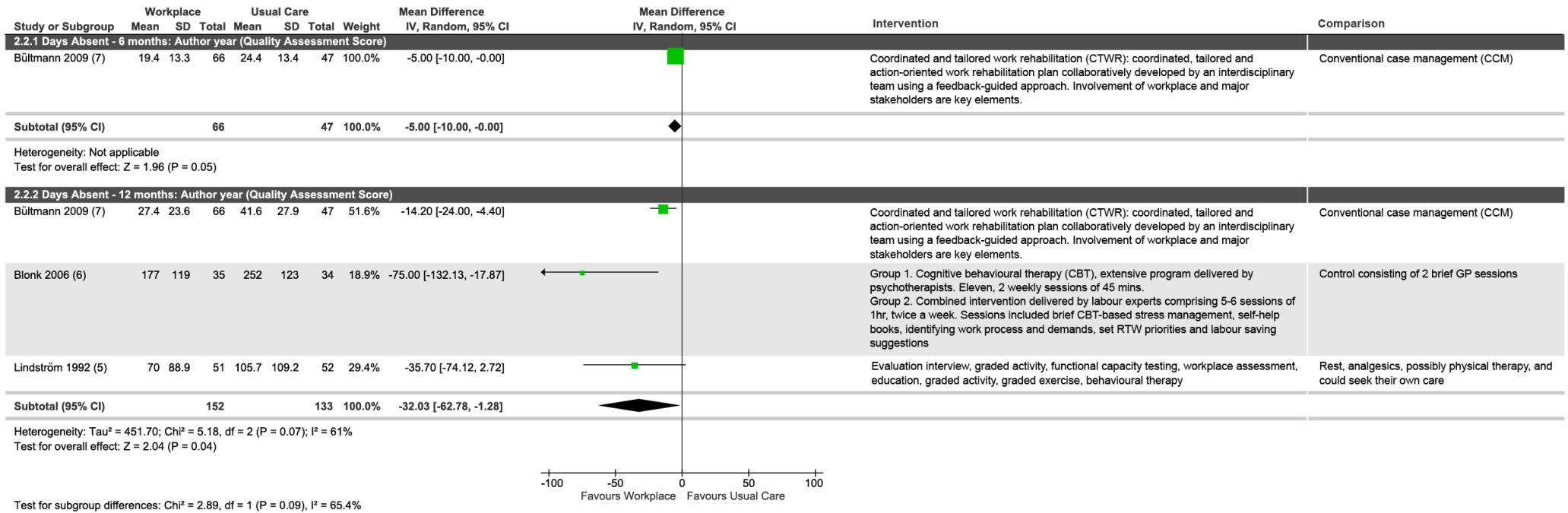


Figure 3.6 Workplace interventions versus usual care for days absent/time to return to work outcomes at 6, 12 and greater than 12 months. Each study is ranked by quality assessment score (highest to lowest).



3.4.6 Meta-analysis for patient education interventions versus usual care

RTW outcomes (n = 8 studies)

Figure 3.7 shows the studies and participants at each of the follow-up time periods that reported RTW data.

The pooled risk ratio for RTW was

6 months: 1.42 [95%CI 1.10, 1.83], favours intervention, **significant (Z=2.67, p=0.008)**

12 months: 1.08 [95%CI 0.89, 1.32], not significant

>12 months: 1.14 [95%CI 0.96, 1.35], not significant

Lost time outcomes (n = 6 studies)

Figure 3.8 shows the studies and participants at each of the follow-up time periods that reported days absent/time to RTW.

The mean difference between absence days/time to RTW for patient education interventions versus usual care was

6 months: 13 fewer days for intervention (95%CI -26.03, -0.61) **significant, (Z=2.05, p=0.04)**

12 months: 31 fewer (95%CI -66.01, 4.78), not significant

>12 months: 44 fewer (95%CI -67.00, -20.80), **significant (Z=3.73, P<0.001).**

Education is an intervention that is commonly provided as one element in a suite of interventions (Nystuen et al. 2006, Godges et al. 2008, Hagen et al. 2000, Indahl et al. 1995, Haldorsen et al. 1998, Leclaire et al. 1996, Indahl et al. 1998, Hagen et al. 2003). Meta-analysis indicates short term effects (6 months) on RTW rates, and short and long term effects on days lost.

The quality or content of education provided is not able to be evaluated in published reports. The unique effects of education cannot be evaluated as no studies investigated the effects of education in isolation.

Figure 3.7 Education interventions versus usual care for return to work outcomes (did/did not return to full-time work) at 6, 12 and greater than 12 months. Each study is ranked by quality assessment score (highest to lowest).

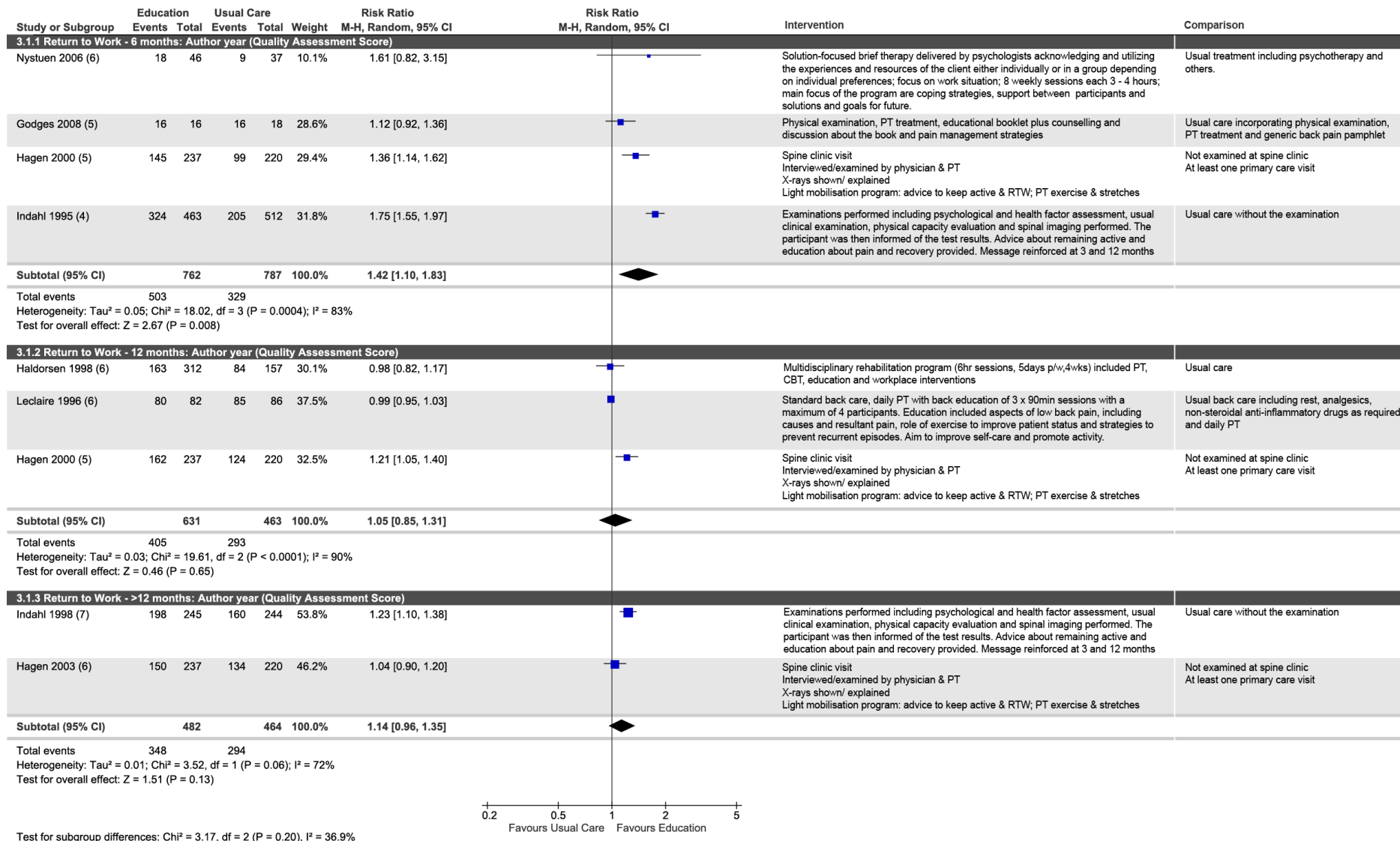
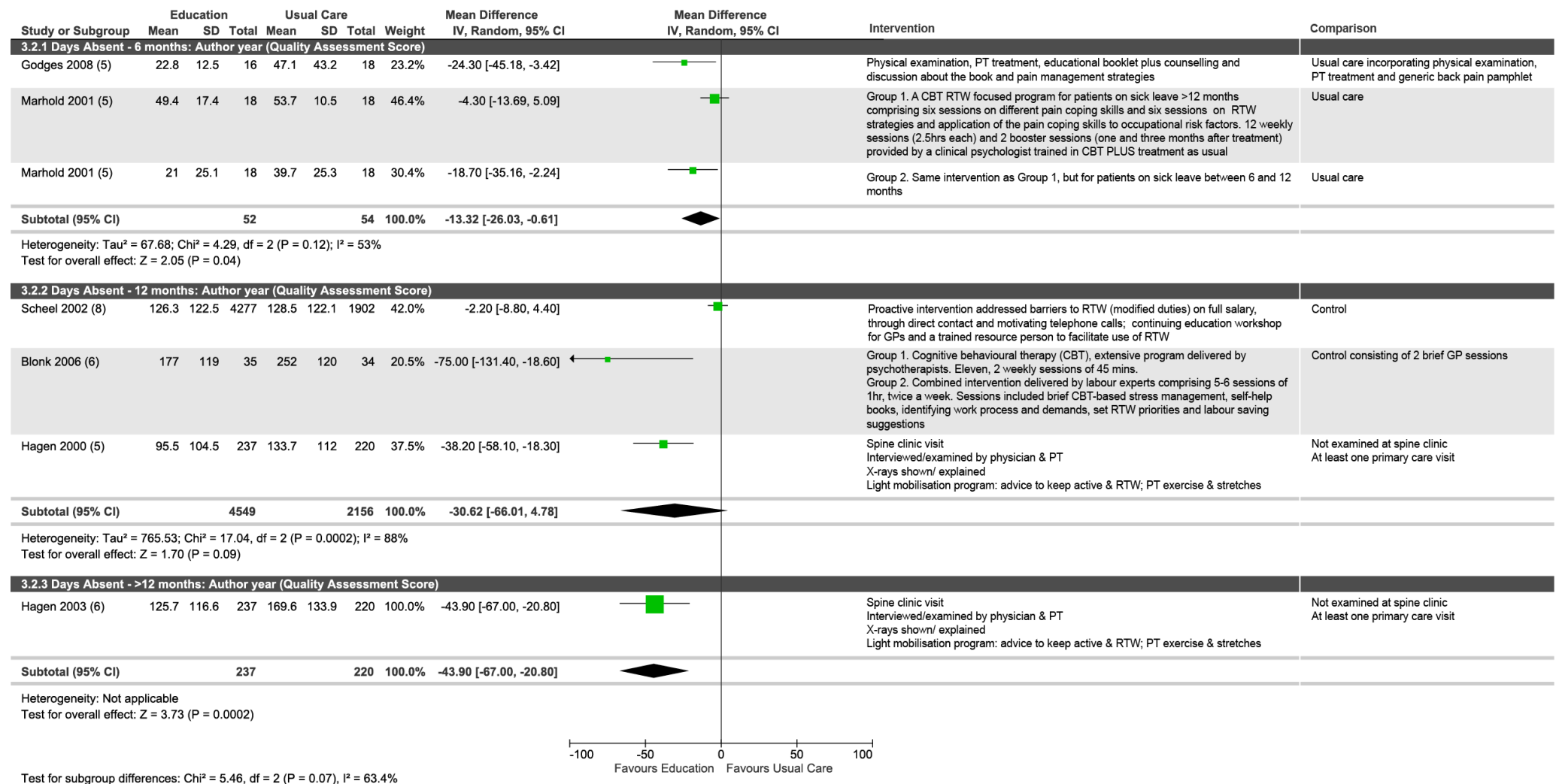


Figure 3.8 Education interventions versus usual care for days absent/time to return to work outcomes at 6, 12 and greater than 12 months. Each study is ranked by quality assessment score (highest to lowest).



3.4.7 Meta-analysis for any intervention compared to usual care

As most RCTs compared multidisciplinary and multimodal interventions to usual care, we also compared any intervention to usual care.

RTW outcomes (n = 15)

Figure 3.9 shows the studies and participants at each of the follow-up time periods that reported RTW data.

Non-significant risk ratios for RTW were reported for 6 and 12 months respectively.

6 months: 1.33 [95%CI 1.09, 1.63], favours intervention, **significant (Z=2.77, p=0.008)**

12 months: 1.07 [95%CI 1.00, 1.13], **significant (Z=2.04, p=0.04)**

>12 months: 1.14 [95%CI 0.96, 1.35], not significant

Lost time outcomes (n = 11)

Figure 3.10 shows the studies and participants at each of the follow-up time periods that reported days absent/time to RTW.

6 months: 11 fewer days for intervention [95%CI -18.30, -3.31] **significant, (Z= 2.82, p = 0.005)**

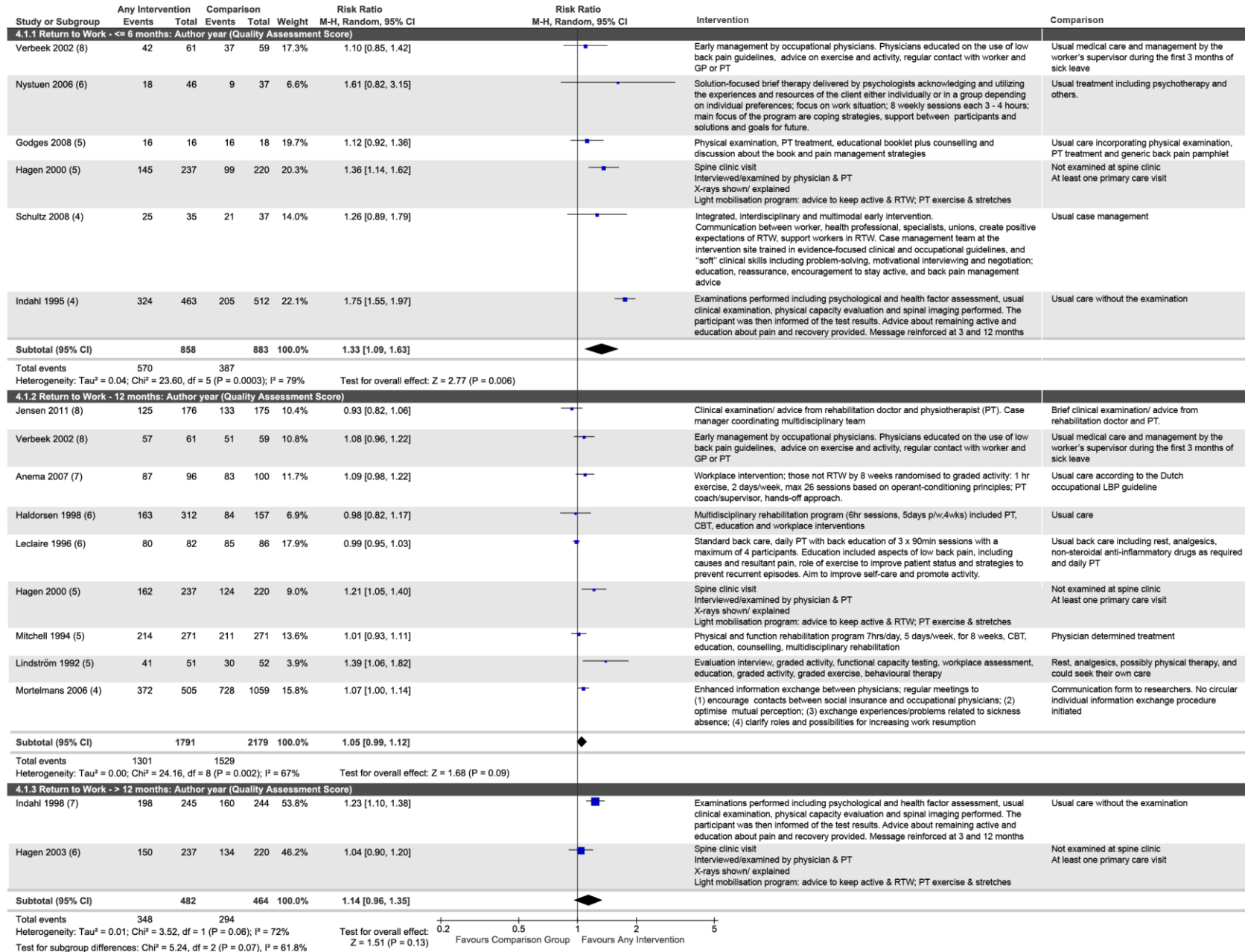
12 months: 23 fewer [95%CI -37.11, -8.67], **significant, (Z =3.16, p = 0.002)**

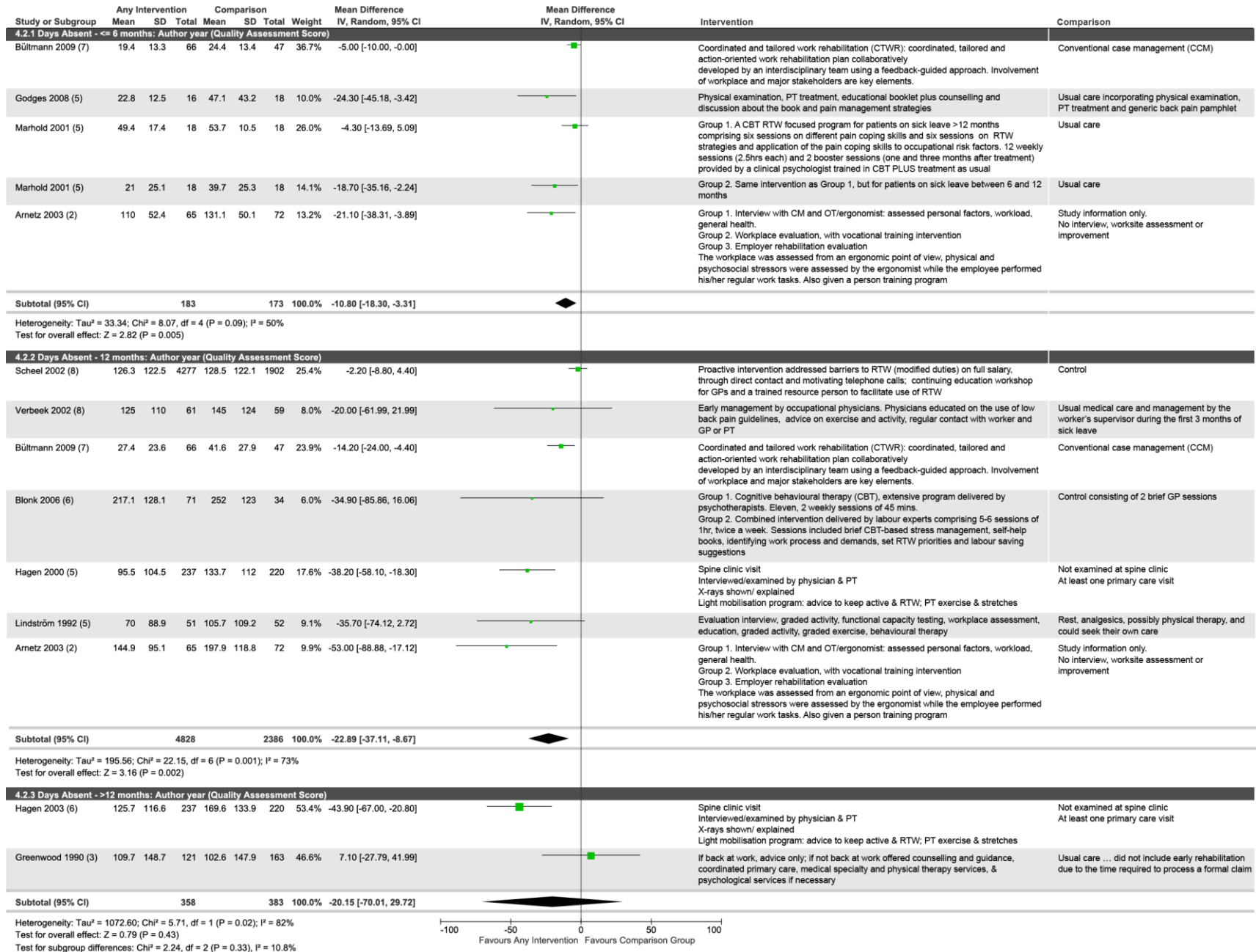
>12 months: 20 fewer [95%CI -70.01, 29.72], not significant

There were four studies (Bendix et al. 2000, Rozenberg et al. 2002, Schultz et al. 2013, van den Hout et al. 2003) not included in the 'any intervention versus usual care' meta-analysis due to their use of non-usual care comparison groups. Of the studies included in the any intervention comparisons, only Mortelmans et al. (2006) and Verbeek et al. (2002) were not included in any of the other analysis groups. The high quality study by Verbeek et al. reported no significant improvement in the proportion of workers returning to work nor a reduction in the time to RTW when an early intervention was coordinated by occupational physicians compared with the usual coordination by work supervisors. The Mortelmans et al. (2006) compared enhanced communication exchanges between stakeholders to no enhanced communication exchange procedures. However, this study suffered from design problems including group allocation issues, initial group differences and bias problems.

Figure 3.9 (Page 42) Any intervention versus usual care for return to work outcomes (did/did not return to full-time work) at 6, 12 and greater than 12 months. Each study is ranked by quality assessment score (highest to lowest).

Figure 3.10 (Page 43) Any intervention versus usual care for days absent/time to return to work outcomes at 6, 12 and greater than 12 months. Each study is ranked in order by quality assessment score (highest to lowest).





3.5 Discussion

3.5.1 Key review findings

The first stage in this review identified 61 systematic reviews investigating modifiable barriers and facilitators that injured people face in achieving timely and sustained return to work. The exceptionally large number of reviews in this field of enquiry provide evidence of the social and personal cost of workplace injuries, and the widespread belief in the importance of facilitating early return to work.

These reviews reported more than 200 factors identified as associated with RTW outcomes. Of these, only 54 factors have been identified by more than one review: 21 by two reviews, 12 by three reviews and 21 by 4 or more reviews (see Appendix 3.4 'Validation of conclusions across reviews'). The reviews reported findings of studies where large numbers of variables were tested for a relationship with RTW outcomes. The potential for chance relationships between variables and outcomes increases with the number of variables investigated, and many of the reported factors are likely to be spurious.

In contrast relatively few factors have been tested for effect on RTW metrics in quality randomized controlled trials; when they have been tested this has most frequently been in combination with a range of other factors, obscuring the unique merit of individual factors.

Considering the 21 factors reported in 4 or more reviews, a number can be accepted without re-evaluation as predictors. These include the non-modifiable factors i.e. being older, female, marital status, socio-economic status/demographics, and being in receipt of compensation. Factors that might be isolated for further investigation include the impact of specific RTW plan/goals/interventions, strategies that enhance RTW expectations, modified duties based on workplace ergonomic evaluations/interventions, interventions that occur in the work environment and target work function, and features of effective RTW coordination. Interventions with unknown effect would be those that garner the support and engagement of employers, that facilitate the development of leadership in employers, that promote (through company rhetoric) the importance of support for co-workers, that involve injured employees as active partners in RTW decisions, and that include workers in developing ways to improve job satisfaction. Technology may also assist in investigations into ways to reduce heavy physical demands. It is not surprising, but should not be overlooked, that injuries resulting in greater pain and loss of function have been associated with poorer RTW outcomes. Natural recovery must take its course in all injuries and will usually take a longer course in more severe injuries. There is almost certainly a floor effect in outcomes of interventions designed to improve RTW outcomes, but no studies

cross referenced return to work data against any standardised expectations. Depression is also implicated as a factor that affects RTW, though it is not clear whether this is depression that arises as a consequence of injury (potentially modifiable) or depression that precedes injury, although the former is biologically plausible.

Meta-analyses were structured such that higher quality studies were reported at the top of forest plots with study quality decreasing down the plot. Few studies were conducted with the rigour required for confidence in outcomes. Effect sizes tended to increase as study quality decreased. The pooled effects included outcome of studies of all quality. Pooled effect sizes (e.g. numbers of days in reduced time to RTW) should be interpreted very cautiously given the potential bias incurred by study designs. In addition, we are concerned that publication bias, with the result of reducing published work showing no effects of an intervention, may be further biasing the pooled estimates of effects. Modelling of the likely cost benefit of interventions should consider the worst case (higher quality studies) as well as the most optimistic outcomes. Included studies did not typically include cost benefit evaluations where the reduction in costs to the insurer associated with improved RTW outcomes were weighed up against the cost of delivering programs. These data are required to determine the true cost benefits of investing in programs designed to accelerate rehabilitation and RTW.

Of those barriers and facilitators for RTW identified by three or more reviews, few were concerned with the behaviour of the injured worker (e.g. fear avoidance, physical activity, education) while many identified the influence of work conditions. Only two trials, Bültmann (2009) and Scheel (2002), focussed on work conditions rather than worker behaviours and both found in favour of the intervention. Almost all other studies focused in part or in full on treatments of the individual. More research that identifies the relative effect of interventions that target individual compared to environmental factors on RTW rates and work days lost is warranted. Research of this nature led to very important reductions in injury rates for nurses (Martin et al, 2009) and a shift from a culture of manual handling to device assisted methods for moving people safely. Prior to the nurses back injury prevention study, nurses, like the injured workers in the trials included in this review, were targeted for therapy and training in an effort to reduce lost time due to injury. Despite complex interventions, injury rates continued to rise across time until manual handling was identified as the culprit and addressed.

The second stage of the review sought empirical data into the effect of modifying any barrier or facilitator on RTW rates or number of lost work days. The high costs incurred in conducting these studies have not led to a wealth of information regarding best

practice. It is time to consider whether the ongoing search for predictor variables needs to be suspended while known influences are specifically isolated and targeted for research attention.

No trials included in this review reported qualitative evaluation of the perspective of the injured person on the intervention. Despite claiming to be patient focussed there is little evidence provided that this is addressed. The body of literature does not convey confidence that we have evolved a sophisticated and trustworthy system for supporting injured workers.

3.6 Conclusion

More than 200 barriers and facilitators that influence RTW have been reported in 61 reviews, but only 21 of these have been repeatedly identified by 4 or more reviews. The majority focus on workplace factors. In contrast, most trials into the effects of interventions to enhance RTW outcomes focus on knowledge, skills and behaviours of the injured worker. Opportunities to advance this field of research include identifying the unique effects of recognised barriers and facilitators on RTW outcomes, and increasing research into strategies to enhance workplace conditions.

4. Physiotherapy utilisation by injured workers

4.1 Aims

The primary aim of the review of workplace injury administrative data was to evaluate current practices of Victorian physiotherapists in the management and Return to Work (RTW) certification of injured workers covered by the Victorian WorkCover Authority. Secondary aims were to

- describe the profile of claimants who had received scheme payment for physiotherapy services
- summarise the certification practices of physiotherapists
- review the pattern of physiotherapy service utilisation by injured workers comparing regular physiotherapists (RPs) and occupational physiotherapists (OPs)

4.2 Victorian WorkCover Authority administrative dataset

The Victorian WorkCover Authority (VWA) oversees workplace safety and return to work following injury or illness. All employers are required to maintain workers' compensation insurance through the VWA unless they are sole traders, accredited self-insurers or covered under a national compensation scheme. Workplaces are required to keep a registry of injuries/illnesses, submit the claim to their insurer within 10 days of receipt and are liable for the first 10 days of workplace absence and/or the medical and like services excess. Claims that meet these thresholds are registered and tracked on the claims administration database. The Compensation Research Database (CRD) is managed by the Institute for Safety, Compensation and Recovery Research (ISCRR) and holds administrative data for claims lodged with the TAC and VWA. In Victoria, a certificate of capacity completed by a medical practitioner or a hospital is required before a VWA claim for weekly payments can be accepted. The maximum duration of the initial certificate of capacity is 14 days. Subsequent certificates are for a maximum of 28 days and can be completed by medical practitioners, physiotherapists, chiropractors or osteopaths.

Information about service provision is collected in the services dataset. All services billed for reimbursement are recorded with a unique service code. The unique nature of these codes allows for the differentiation between the provisions of treatments by different practitioners. A limitation to the use of this data is that claims must reach a designated medical services payment threshold before the claimant can receive scheme payment of medical services. Any physiotherapy treatment received before

this threshold is reached is covered in most instances by the employer. In 2008 the nature of physiotherapy services changed with the introduction of the Occupational Physiotherapy (OP) program by TAC and WorkSafe aimed at facilitating timely RTW for workers compensation clients (Pizzari & Davidson, 2013). Using unique service codes and claims level information, this interrogation of the CRD offers a unique perspective into the role trained physiotherapists play in assisting early RTW.

4.3 Methods

In preparation for the evaluation of certification practices by physiotherapists, work injury data for 2003 to 2012 inclusive were extracted from the CRD in 2013.

4.3.1 Inclusion and exclusion of cases – Certificate Analysis

All data for claims between January 1, 2003 and December 31, 2012 where payment was made for physiotherapy services lodged by people of working age (15-65 years) were extracted from the CRD. Prior to 2003 medical certificate data were not routinely captured by WorkSafe. All claimant data were excluded if it contained errors in logic (e.g. certificate date preceded injury date) or the first certificate was not completed by a medical practitioner or hospital in cases where the claim included reimbursement for lost wages. Claimant data were also excluded if any certificates submitted were not valid, i.e. the duration of the certified unfit and/or alternative/modified duties time was longer than the valid duration of the certificate.

4.3.2 Inclusion and exclusion of cases – Services Analysis

All data for claims with a valid medical certificate, regardless of services received, between January 1, 2010 and December 31, 2012 were included to enable comparison of services provided to clients who were treated by regular physiotherapists (RP), occupational physiotherapists (OP) and those who did not have treatment by a physiotherapist. Data were excluded from analysis if claimants received any concurrent manual therapy from another health professional (e.g. chiropractor) or did not receive any scheme payment reimbursements.

4.3.3 Data collection and collation

Data were extracted from the CRD as four discrete datasets. These included information on the claims profile and costs, the healthcare and other services provided, the payments made for healthcare and other services, and certificate of capacity information. Data were cleaned and checked against the inclusion and exclusion criteria. Certificates of capacity have four possible designations: unfit for work, fit for modified duties, fit for alternative duties, and fit to RTW. Due to the similar definitions

of modified and alternate duties these categories were combined for further analysis, leaving three distinct certificate categories. The VWA uses the national Type of Occurrence Classification System (TOOCS) Third Edition to code injury and disease types (National Occupational Health and Safety Commission, 2004). Using the TOOCS classification, Collie et al. (2013) and Mazza et al. (2013) designated injuries and illness into six categories based on discussions with medical practitioners about commonly seen work injury conditions. These categories were amended in the present study to include more detail in the categorisation of back pain and are reported in Table 4.1.

Table 4.1 Categories of injury and illness used in the CRD analysis

Group	Injury/Illness category	TOOCS V3 Codes
1	Fractures	B – Fractures
2	Musculoskeletal injury and diseases	F – Traumatic joint/ligament and muscle/tendon injury H – Musculoskeletal and connective tissue diseases (except H2)
3	Back/neck pain and strain	H2 – Spinal vertebrae and intervertebral disc diseases - dorsopathies
4	Other traumatic injuries	A – intracranial injuries C – Wounds, lacerations, amputations and internal organ damages D – Burns E – Injury to nerves and spinal cord G – Other injuries
5	Mental health conditions	I – Mental diseases
6	Other diseases	J – Digestive system diseases K – Skin and subcutaneous tissue diseases L – Nervous system and sense organ diseases M – Respiratory system diseases N – Circulatory system diseases O – Infectious system diseases P – Neoplasms (cancer) Q – Other diseases R – Other claims

Services data determinants were collated using service codes used by health care practitioners to claim reimbursement from WorkSafe insurers. Data were tallied and totalled for any service, and RP and OP services.

4.3.4 Data Analysis

Summary statistics were used to describe the profile of claims, services and certificate data. The relationship between injury/illness (Table 4.1) and certificate type (unfit, fit

for modified/ alternative duties, fit to RTW) was assessed using χ^2 test. Kruskal-Wallis or Mann-Whitney U tests were used to determine differences in certificate of capacity durations. The alpha level for concluding significance was 0.05.

Service data were described using summary statistics to provide information about included claims. Differences in demographic profiles between practitioner types were determined using ANOVA or χ^2 tests. The relationship between service provisions by practitioner type was determined using multivariate linear modelling. The model was adjusted for sex, age at the time of injury, injury type, claimant occupation, pre-injury income, hospital costs and claim legal costs.

4.4 Results

4.4.1 Profile of physiotherapy claims and certificates of capacity

A total of 88,061 claims had a scheme payment code indicating that physiotherapy services had been provided. The demographic profile of physiotherapy service recipients with valid certificates and stratified by illness/injury category is presented in Table 4.2. The claimants were predominantly male (62%) with a mean age of 42.3 years working as labourers (22%), technicians and trade (20%) or machinery operators and drivers (18%). Most claimants sought physiotherapy services for musculoskeletal (49%) or back/neck pain or strain (31%) injuries. The median (IQR) incapacity time was 72 (28-193) days, but ranged from 58 (23-157) for other trauma claims to 286 (82-688). While only 363 mental health conditions (MHC) were treated by physiotherapists, the profile of these claims was different to the other injury/illness categories. MHC claims were female (63%), working in community and personal services (25%) or as professionals (22%). MHC claims also recorded the highest median total claim costs, weekly payments, medical and like payments and incapacity days, but the lowest costs associated with physiotherapy services.

A total of 1,163,353 certificates were submitted for these claims with a median (IQR) of 8 (4-16) certificates per claim. Physiotherapists completed 50,625 (4.4%) valid certificates for these claims, comprising 2,396 initial certificates and 48,229 subsequent certificates. All initial certificates issued by physiotherapists were completed for claims that did not receive compensation for daily earnings. All other certificates were provided by medical practitioners or hospitals. Table 4.3 presents information about the certificate types (fit, modified/alternative duties/unfit) issued by physiotherapists stratified by injury/illness group.

55.1% for all certificates issued by physiotherapists recommended RTW with alternative or modified duties, and 7.1% recommended full RTW. For other certificates

(unfit to RTW) the median (IQR) duration specified on the certificate was 19 (7-28) days. This was a significantly shorter certification period than for certificates for alternative/modified duties (27 (14-28) days) ($P=0.0001$). This was consistent across the musculoskeletal, back/neck pain and other trauma groups. For all other injury groups (such as mental health) the median certificate durations for unfit compared to RTW recommendations were not significantly different.

Table 4.2 Profile of claims treated by a physiotherapist stratified by injury/illness category.

	Fractures (n=6,596, 7.5%)	MSK (n=43,309, 49.2%)	Back & Neck Pain or Strain (n=27,027, 30.7%)	Other Trauma (n=9,160, 10.4%)	MHC (n=363, <1%)	Other Diseases (n=1,606, 1.8%)	Total (N=88,061)
Age: mean (sd) yrs	42.7 (12.8)	43.3 (11.4)	40.9 (11.4)	41.4 (12.4)	44.7 (10.3)	43.7 (10.8)	42.3 (11.6)
Sex: Male n(%)	4,297 (65.2%)	26,482 (61.2%)	16,627 (61.5%)	5,902 (64.4%)	133 (36.6%)	895 (55.7%)	54,336 (61.7%)
Occupation: n (%)							
- Managers	495 (7.5%)	2,488 (5.7%)	1,499 (5.6%)	511 (5.6%)	43 (11.9%)	79 (4.9%)	5,115 (5.8%)
- Professionals	821 (12.5%)	4,906 (11.3%)	3,422 (12.7%)	1,030 (11.2%)	79 (21.8%)	165 (10.3%)	10,423 (11.8%)
- Technicians & Trade	1,420 (21.5%)	8,467 (19.6%)	5,044 (18.7%)	2,032 (22.2%)	20 (5.5%)	337 (21.0%)	17,320 (19.7%)
- Community	743 (11.3%)	6,489 (15.0%)	4,193 (15.5%)	1,134 (12.4%)	92 (25.3%)	129 (8.0%)	12,780 (14.5%)
- Clerical & Admin	340 (5.2%)	2,073 (4.8%)	932 (3.5%)	353 (3.9%)	39 (10.7%)	99 (6.2%)	3,836 (4.4%)
- Sales Workers	252 (3.8%)	1,402 (3.2%)	989 (3.7%)	315 (3.4%)	19 (5.2%)	56 (3.5%)	3,033 (3.4%)
- Machinery Operators	1,168 (17.7%)	7,764 (17.9%)	5,174 (19.1%)	1,768 (19.3%)	35 (9.6%)	268 (16.7%)	16,177 (18.4%)
- Labourers	1,357 (20.6%)	9,720 (22.4%)	5,774 (21.4%)	2,017 (22.0%)	36 (9.9%)	473 (29.5%)	19,377 (22.0%)
Weekly payments (\$)	6,037 (1,934- 14,879)	2,494 (0-10,516)	2,139 (0-11,946)	2,537 (0-9,988)	19,984 (5,546- 78,867)	4,260 (168- 14,382)	2,727 (0-11,370)
Medical & like payments (\$)	6,349 (1,807- 15,520)	3,747 (1,030- 9,519)	2,397 (760- 8,465)	3,941 (1,222- 9,908)	10,300 (2,834- 24,992)	4,462 (2,049- 9,711)	3,475 (988- 9,843)
Physiotherapy payments (\$)	653 (265- 1,484)	638 (253-1,516)	660 (256-1,630)	503 (210-1,266)	329 (130-866)	444 (188- 1,028)	625 (246-1,513)
Total payments (\$)	14,113 (5,549- 36,972)	7,616 (2,013- 23,531)	5,872 (1,655- 27,731)	7,768 (2,400- 25,301)	42,473 (13,275- 129,579)	10,536 (4,128- 30,290)	7,655 (2,095- 25,978)
Incapacity days	80 (44-172)	74 (27-186)	70 (25-218)	58 (23-157)	286 (82-688)	99 (43-258)	72 (28-193)
Scheme payment days	50 (18-119)	22 (0-95)	23 (0-121)	23 (0-89)	188 (43-585)	38 (2-133)	26 (0-106)

All data are presented as median (IQR - interquartile range) unless otherwise stated. MSK – musculoskeletal, MHC – mental health condition

Table 4.3 Numbers and durations of certificates of capacity issued by physiotherapists to workers compensation clients.

Injury and illness category	Total number of certificates n (%)	Unfit for work		Alternative/Modified duties		Fit for work
		n (% within injury category)	Median (IQR) duration	n (% within injury category)	Median (IQR) duration	n (% within injury category)
Fractures	3,979 (7.9%)	1,368 (34.4%)	28 (14-28)	2,229 (56.0%)	28 (19-28)	306 (7.7%)
MSK	25,012 (49.4%)	8,044 (32.2%)	21 (7-28)	14,273 (57.1%)	27 (14-28)	1,821 (7.3%)
Back & Neck Pain	16,158 (31.9%)	5,873 (36.4%)	14 (5-28)	8,578 (53.1%)	27 (14-28)	1,092 (6.8%)
Other Trauma	4,518 (8.9%)	1,662 (36.8%)	17 (6-28)	2,377 (52.6%)	27 (14-28)	331 (7.3%)
MHC	184 (0.4%)	116 (63.0%)	27 (14-28)	58 (31.5%)	28 (27-28)	10 (5.4%)
Other Diseases	774 (1.5%)	320 (41.3%)	27 (13-28)	381 (49.2%)	28 (14-28)	41 (5.3%)
Total	50,625 (100%)	17,383 (34.3%)	19 (7-28)	27,896 (55.1%)	27 (14-28)	3,601 (7.1%)

MSK – musculoskeletal, MHC – mental health condition

4.4.2 Summary of service practices by physiotherapists

A total of 220,056 claims from January 1, 2010 were extracted from the CRD for the physiotherapy service analysis. After applying exclusion criteria, 126,377 were included for analysis. The details of the included claims are presented in Table 4.4. Claimant age and sex were similar across categories of physiotherapy service providers (no physiotherapy, regular physiotherapy (RP), occupational physiotherapy (OP) or combinations of these categories), however there were a greater proportion of musculoskeletal and back/neck condition claimants who received physiotherapy treatment than those that received no physiotherapy treatment ($P < 0.001$). The total number of services provided differed across categories of physiotherapy service providers ($F=145.8$, $P < 0.001$), with the median (IQR) number of physiotherapy services of 11 (5-21), 18 (7-45) and 43 (20-85) for OP, RP and RP & OP groups respectively. A regression model was developed for effects of categories of physiotherapy service providers on incapacity days adjusting for claimant sex, age at the time of injury, injury type, occupation, pre-injury income, hospital costs and legal costs. The regression coefficients of the adjusted model are presented in Table 4.5. The model accounted for 31% of the variance in incapacity days ($F_{(20, 126\ 356)} = 2842.8$, $P < 0.001$, $\text{Adj-R}^2 = 0.31$). Compared to claims where no physiotherapy services were provided where median (IQR) incapacity days were 40 (21-81), each of physiotherapy service provider groups were associated with claims that had significantly more days of incapacity (RP 107 (52-269), OPs: 78 (40-153); combined RP & OP: 266 (116-597)). These data suggest that claimants treated by physiotherapists either have greater needs than those who do not seek physiotherapy, and that OPs see fewer claimants with protracted time off work.

4.4 Claim characteristics by physiotherapist treatment type for claims included in the regression analysis of service provision

	No Physiotherapy (n=67,576)	Regular Physiotherapy (n=56,668)	Occupational Physiotherapy (n=565)	Regular & Occupational Physiotherapy (n=1,553)
Age at time of injury: mean (SD)	40.5 (12.6)	42.5 (11.8)	43.0 (11.8)	43.6 (11.5)
Sex: Female – n (%)	20,163 (29.8%)	20,925 (36.9%)	177 (31.3%)	610 (39.3%)
Injury type: n (%)				
- Fracture	7,523 (11.1%)	5,677 (10.0%)	61 (10.8%)	106 (6.8%)
- Musculoskeletal	14,177 (21.0%)	27,224 (48.0%)	275 (48.7%)	759 (48.9%)
- Back/neck pain or strain	7,921 (11.7%)	15,921 (28.1%)	157 (27.8%)	523 (33.7%)
- Other traumatic injury	16,812 (24.9%)	6,389 (11.3%)	59 (10.4%)	144 (9.3%)
- Mental health	12,345 (18.3%)	309 (0.6%)	3 (0.5%)	1 (0.6%)
- Other diseases	8,798 (13.0%)	1,163 (2.1%)	10 (1.8%)	20 (1.3%)
Occupation: n (%)				
- Managers	3,674 (5.4%)	2,984 (5.2%)	33 (5.8%)	87 (5.6%)
- Professionals	6,263 (9.3%)	5,961 (10.5%)	33 (5.8%)	128 (8.2%)
- Technicians and trades	16,665 (24.7%)	11,668 (20.6%)	96 (17.0%)	287 (18.5%)
- Community and personal services	8,802 (13.0%)	8,127 (14.3%)	95 (16.8%)	258 (16.6%)
- Clerical and administrative	2,590 (3.8%)	1,957 (3.5%)	15 (2.7%)	44 (2.8%)
- Sales workers	2,056 (3.0%)	1,799 (3.2%)	17 (3.0%)	56 (3.6%)
- Machinery operators and drivers	11,016 (16.3%)	10,641 (18.8%)	144 (25.5%)	307 (19.8%)

- Labourers	16,510 (24.4%)	13,582 (24.0%)	132 (23.4%)	386 (24.9%)
Incapacity days	40 (21-81)	107 (52-269)	78 (40-153)	266 (116-597)
Scheme compensation days	20 (8-50)	58 (22-168)	44 (16-102)	153 (51-496)
Medical and like costs (\$)	1,085 (0-3,906)	5,605 (1,918-13,354)	3,791 (1,058-9,294)	14,380 (6,811-28,678)
Physiotherapy scheme payment (\$)	0	727 (278-1,747)	641 (303-1,186)	2,078 (1,098-3,749)
Hospital costs (\$)	0 (0-1,112)	282.3 (0-2,437)	0 (0-1,232)	0 (0-5,546)
Legal costs (\$)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-761)
Weekly compensation amount (\$)	2,544 (926-6,763)	6,387 (2,310-18,165)	5,341 (2,096-14,381)	17,776 (6,022-60,396)
Total claim amount (\$)	5,241 (1,965-12,242)	14,325 (5,793-41,836)	10,483 (4,573-24,622)	41,365 (16,108-121,911)
Total Services	11 (2-27)	62 (27-155)	36 (17-76)	147 (70-328)
Physiotherapy Services	0	18 (7-45)	11 (5-21)	43 (20-85)

All data is reported as median (IQR)

4.5 Table reporting the adjusted regression coefficients for claims by physiotherapy service provider groups

	Adjusted Co-efficient (95 % Confidence Interval)	P value
Treatment group:		
- No physiotherapy	1.0 – reference	
- Regular physiotherapy (RP)	112.5 (109.6 to 115.4)	< 0.001
- Occupational physiotherapy (OP)	66.0 (47.4 to 84.5)	< 0.001
- RP and OP	226.7 (215.3 to 238.1)	< 0.001
Sex:		
- Male	1.0 – reference	
- Female	33.5 (30.4 to 36.7)	< 0.001
Age at time of injury	1.9 (1.8 to 2.0)	< 0.001
Injury type:		
- Fracture	1.0 – reference	
- Musculoskeletal	36.9 (32.5 to 41.3)	< 0.001
- Back/neck pain or strain	57.0 (52.2 to 61.8)	< 0.001
- Other traumatic injury	8.7 (3.9 to 13.4)	< 0.001
- Mental health	171.7 (165.9 to 177.4)	< 0.001
- Other diseases	34.8 (28.9 to 40.7)	< 0.001
Occupation:		
- Managers	1.0 – reference	
- Professionals	-16.4 (-23.1 to -9.7)	< 0.001
- Technicians and trades	13.0 (6.8 to 19.1)	< 0.001
- Community and personal services	-13.0 (-19.4 to -6.7)	< 0.001
- Clerical and administrative	-2.3 (-10.7 to 6.2)	0.595
- Sales workers	-1.6 (-10.4 to 7.3)	0.728
- Machinery operators and drivers	9.8 (3.5 to 16.1)	0.002
- Labourers	22.4 (16.3 to 28.5)	< 0.001
Pre-injury income amount	-0.01 (-0.01 to -0.003)	< 0.001
Scheme paid hospital amount	0.008 (0.008 to 0.009)	< 0.001
Scheme paid legal amount	0.005 (0.005 to 0.005)	< 0.001
Constant	-69.0 (-78.4 to -59.6)	< 0.001

4.5 Discussion of key results

4.5.1 Certificates of capacity issued by physiotherapists

Physiotherapists certify a greater proportion of injured workers with alternative or modified duties than unfit for any work related activities. With less than 5% of the total number of certificates written by physiotherapy practitioners, there is the potential for RTW pathways to be predominantly influenced by medical practitioners. Collie et al. (2013) and Mazza et al. (2013), using CRD claims data, reported that most initial and subsequent certifications by medical practitioners are 'unfit' for work. In contrast physiotherapists appear more ready to recommend a return to modified or alternative duties. In a comparison to the Collie and Mazza data analysis across a similar time frame, physiotherapists appear to provide encourage shorter median durations of total incapacity than the previously reported data from general practitioners. This could be related to physiotherapists' approach of using RTW as an important component of rehabilitation, it could reflect the nature and stage of conditions at the time when claimants seek physiotherapy e.g. it may be that workers have significantly recovered from the acute stage of injury.

4.5.2 Service provision by physiotherapists

The Occupational Physiotherapy (OP) program was trialled and rolled out by HDSG during 2008 and 2009, and ran as a focused RTW training initiative for physiotherapists until mid-2014. It utilised a framework based on the Clinical Framework and targeted early RTW for physiotherapy clients with a compensable injury. OP practitioners were remunerated at a higher rate but were expected to perform under more scrutiny, with their treatment and RTW figures monitored by designated Clinical Panel members. The data presented in this report demonstrates that when a claimant receives OP treatment alone their RTW trajectory is significantly better than if they received RP treatment alone or combined OP & RP treatment. The significant increase in incapacity time for the combined RP and OP group could be indicative of long duration claims or more complex cases. Further work is required into the influencing factors that contribute to this extended time to RTW before conclusions can be made.

4.6 Conclusion

The data presented in this section has identified that while physiotherapists play an important role in aiding a worker back to their usual duties, they play a small role in the provision of certificates of capacity. When physiotherapists do provide certificates of capacity, they are primarily for RTW either back to full duties or with some

modifications. We have also identified, that from a larger claims data set it is possible to demonstrate the effect of changes in practitioner behaviour as demonstrated by a reduction in service numbers per claim by OP practitioners.

5. Stakeholder perception of barriers and facilitators to RTW

5.1 Background

Under Victorian legislation, physiotherapists have the capacity to complete medical certificates (certificates of capacity) for injured workers, with the exception of the initial certificate for workplace injuries requiring time off work. A combined initiative of the TAC and WorkSafe provided targeted professional development to enable best practice in supporting compensable clients and injured workers (Pizzari & Davidson, 2013). This program combined seminars with individualised support to engage Victorian physiotherapists in facilitating early and sustained RTW. The training for those who entered the program (subsequently referred to as Occupational Physiotherapists (OPs)) included education in the compensable system, certification of capacity (or 'fitness to return to work in any capacity'), return to work strategies and strategies to support people with complex injuries or conditions. OPs were remunerated at a higher level than non-OPs when treating compensable clients. The number of OPs in Victoria was limited as the title was only conferred to a relatively small number of practitioners who completed the prescribed training through the TAC/WorkSafe. This component of our study investigated barriers and facilitators to RTW and certification of capacity encountered by OPs and non-OPs. We also interviewed case managers from the two compensation schemes who had regular contact with physiotherapists.

5.2 Aims

The primary aim was to identify barriers and facilitators to appropriate RTW certification by physiotherapists and compensation case managers.

5.3 Methods

A qualitative in-depth interview study of OP, non-OP and compensation case managers was conducted. A copy of the journal article submitted for review is available in Appendix 5.2.

5.3.1 Recruitment of participants

Purposive sampling (Ritchie et al., 2014), in order of practitioner location, experience and gender, was used to facilitate population representation of private practice physiotherapists in Victoria, Australia. Practice locations were divided into categories. These were metropolitan (north, south, east and west) and rural. Practice experience was categorised as ≤ 5 or > 5 years since initial physiotherapy registration. Equal representation of males and females was targeted. Based on the goal of achieving equal representation across these categories, OPs and non-OPs, identified through publically available information, were approached via email or mail to participate in individual interviews about RTW and certification practices. From those who consented to an interview, equal numbers of OPs and non-OPs were selected in order of presentation to represent location, gender and experience level. Non-responders were followed up using publically registered practice telephone numbers. Any physiotherapist contacted who either declined to participate or failed to respond to contact attempts was replaced in the sampling pool with another practitioner with matching selection criteria. Based on time available to complete interviews, we planned to recruit up to 20 participants from each OP and non-OP group. The case managers (CM) were recruited using a snowballing technique. An initial group of five participants were sourced from TAC and WorkSafe agents by a HDSG staff member. We used these initial recruits to source further potential participants. Participants provided written informed consent where interviews were conducted face-to-face or verbal informed consent for telephone interviews. Telephone interviewees self-selected to provide verbal consent at the start of the interview or written consent prior to their interview. Where verbal consent was provided, it was recorded on the audio master, in the interview transcript and on a separate verbal consent form. All consent and methodological procedures were approved by the Monash University Human Research Ethics Committee (Approval CF13/2082 – 2013001510).

5.3.2 Data Collection and Analysis

Participants completed a demographic survey that included questions about age, gender, physiotherapy experience, average number of compensable patient consultations per week and an estimate of the number of certificates of capacity completed in the six months prior to the interview. Semi-structured interviews were conducted by an experienced interviewer, either by telephone or face-to-face, at a location and time that suited consenting participants. Interviews were scheduled for sixty minutes but were flexible based on participant availability. An interview guide was developed to provide prompts to explore key topics related to the participants' experiences of working within Victorian compensation systems (Appendix 5.1). Topic areas included barriers and facilitators to RTW for injured compensable patients, development of skills supporting RTW processes, and levels of training regarding the Victorian compensation system and procedures.

Interviews were audio recorded and transcribed verbatim by an external professional service. These transcripts were then cross-matched with interviewer notes for any additional non-verbal cues. Open coding of the content of the discussion provided the basis for the development of themes that emerged from the data (Spencer et al. 2014a; Spencer et al. 2014b). Transcripts were coded independently by two researchers (CG, RI) to minimise individual bias in the analysis. Themes were also identified independently and discussed before reaching consensus regarding the final set of themes. An interim analysis occurred after interviews with twenty participants (10 OPs and 10 non-OPs) to assess for saturation in key themes arising from the data and determine the likely merit of conducting additional interviews. Coding and theme analysis were completed for 9 CMs after the rescinding of consent by one participant. The coding of themes was then repeated for the data from CM interviews. Participant characteristics were analysed using descriptive statistics and presented as mean (standard deviation), median (interquartile range) or count (percentage), dependent on data type and distribution. Independent t, Mann-Whitney U or χ^2 were used to test for differences between OP and non-OP participants. One-way ANOVA, Kruskal-Wallis or χ^2 tests were used to test for differences between all three groups. The alpha level for concluding significance was 0.05.

5.4 Results: Barriers and Facilitators to Timely Return to Work

5.4.1 Demographic Profile of Participants

Fifty seven clinicians (25 OPs and 32 non-OPs) were approached to participate, with eight (4 OPs and 4 non-OPs) declining the invitation to participate and 25 (11 OPs and 18 non-OPs) failing to respond to follow-up contact. Ten consenting non-OPs and 10 OPs were recruited and interviewed before the interim analysis was conducted. Saturation of the data was considered likely at this point as no new themes had emerged in the analysis of the last three participants from either group. The profile of the physiotherapists interviewed is presented in Table 5.1.

Table 5.1. Participant demographics and comparison of characteristics between the OP and non-OP groups.

Characteristic	All Participants (n=20)	Occupational Physiotherapists (n=10)	Non-Occupational Physiotherapists (n=10)	OP vs Non-OP p value
Sex – n (%) Female	9 (45%)	6 (60%)	3 (30%)	0.18
Age (yrs) – Mean (SD)	37.8 (11)	32.8 (9.6)	42.7 (10.4)	0.04*
Years in practice – Median (IQR)	15 (5-21)	5.5 (5-15)	16.5 (15-30)	0.09
Metropolitan location – n (%)	13 (65%)	6 (60%)	7 (70%)	0.64
Compensable patients per week – Median (IQR)	7 (4-12.5)	11.5 (6-15)	5.5 (2-8)	0.04*
Medical certificates issued in last 6 months – Median (IQR)	6 (3.5-20)	15 (5-30)	4.5 (0-6)	0.02*

* indicates significant difference between OPs and Non OPs

Nine claims managers from TAC (n=5) and a WorkSafe insurance agency (n=4) were interviewed. The CMs interviewed were mainly female (n=7) and had a mean (sd) age of 37.7 (10.1) years. The mean (SD) interview time was 39.5 (SD 9.4) minutes and there was no difference in mean (SD) interview time between the groups (OPs: 39.9 (11), non-OPs: 40.3 (9.4), CMs: 38.4 (8.6), $p=0.9$).

5.4.2 Themes identified from the physiotherapist interviews

Themes arising from the data were consistent across interviews with both the OPs and non-OPs and data were therefore pooled for further analysis and reporting. The key themes emerging from the data included patient attitudes towards recovery and RTW, the clients' workplace, a unified positive approach to facilitating recovery by all stakeholders, the clients' psycho-social profile, delays in the system, issues affecting certification of capacity, practitioner communication skills, and knowledge of the Victorian compensation system. A number of these themes reflected factors that could act as a barrier or a facilitator to RTW.

Patient attitudes

Three quarters of the participants considered that both positive (n = 16) and negative (n = 15) patient attitudes affected RTW. Positive attitudes, including a desire to return to pre-injury status, were commonly reported as the most important facilitator in the RTW process.

“... they just want to get better, I think, didn’t want to be injured in the first place, and they just want to get better and get back to normal.” (OP10, Male, 25 yrs)

On the other hand negative attitudes or poor motivation were identified as the most influential barrier to RTW.

“... if they don’t want to go back to work their ... motivation is a big key. If they’re not motivated to return to work, not motivated to do their exercises, then it’s obviously going to limit or slow the progress down of returning to full duties...” (OP7, Female, 29 yrs)

The engagement of the injured person in the recovery process is important in shaping their recovery, and may lead to frustration and poor recovery outcomes.

“... if they’re passive throughout the situation, ... things drag ... they get frustrated and the process falls apart.” (non-OP5, Male, 42 yrs)

Workplace

Participants considered that the clients’ workplace played an important role in the return to work process, with the potential to act as either a barrier or a facilitator. Employers were seen as important facilitators of the RTW process and participants very commonly (n = 17) described instances where the availability of alternative duties, and a positive workplace approach to getting the injured person back to work, had positively influenced outcomes.

“I think that the strategies that were already in place ... getting them to do modified activities and getting them to do altered hours, was great, and a lot of employers, most employers, I dealt with were fantastic. They’d take people on two days a week, a three hour shift, and it would be what the person could tolerate, with obviously a plan in place to increase that progressively. And that works well.” (non-OP7, Female, 28 yrs)

However, inflexible workplaces with little willingness or ability to consider modified duties, modified hours of work or alternative tasks were reported by over half the cohort as a factor in failure to achieve timely RTW.

“... workplace .. saying there’s no work for them unless they can do all their normal duties, and you’re saying, “Well, that might be, that’s going to be a long, long time away.”” (non-OP3, Male, 43 yrs)

Another workplace barrier was conflict, bullying or animosity in the workplace, either unrelated to, or as a consequence of, the injury. Conflict could occur with employers or work colleagues.

“... where there’s been a disagreement, animosity and a resentment in relation to the patient’s injury ... [and the injury is] not seen as being legitimate by the employer.” (non-OP6, Male, 60 yrs)

“If there’s ... bullying ... at work, if they generally don’t like their job or their employer ...” (OP7, Female, 29 yrs)

Employee dissatisfaction with their work was also raised by some participants in the context of workplace barriers.

“the worker’s ... over it, he’s sick of his work, ... it makes it, ... hard, he’s depressed, and it makes it just so much harder, to ... get them back to work.” (non-OP4, Male, 41 yrs)

Unified positive approach

Over half the participants considered that positive investment by stakeholders in the recovery process facilitated a timely RTW. Participants considered that RTW was improved when key stakeholders (the injured person, people in the workplace, health care providers and agents working for the compensable bodies) were aligned in their beliefs, expectations, advice and actions.

“...so everyone was just all on the same page. The worker wanted to get back to work, I wanted him to get back to work, work wanted him to get back to work, the insurance company were happy.” (OP8, Female, 55 yrs)

“...you’ve had the employer, employee on board and there hasn’t been any sort of complications ... with the agents or case managers; they’ve been very positive and supportive of the return to work process as well. So everyone seems to be heading in the same direction.” (OP9, Male, 43 yrs)

Psycho-social issues

Half the participants reported psycho-social issues as a key barrier in timely RTW. Issues raised included anxiety, depression, personal identity, life situations, language and education.

“We know that when someone’s off work for a prolonged period of time that it’s much harder for them to return to work, ... lots more barriers tend to form during that period; we know it’s better for the worker’s family if they’re at work rather than at home, that they’re contributing as that’s their sense of identity; if they are at work they’re less likely to develop secondary problems such as depression or psycho-social factors ...; financial concerns might start to become apparent when people are off work or [have] less income when they’ve been off work for a period of time...” (OP9, Male, 43 yrs)

Delays

Three types of delays were identified as barriers to timely RTW. These delays included time to complete diagnostic tests and reach a definitive diagnosis, time to implement appropriate treatment or support, and time to establish communication with the insurer and gain approval for implementing supportive processes. Waiting for confirmation of diagnosis following imaging was frequently cited and linked to delays in approving

diagnostic tests by insurance agents. Delays in diagnosis were thought to delay treatment, resulting in physiotherapy interventions being commenced much later than ideal in the recovery pathway. One of the most consistent delays reported by practitioners was due to system processes.

“... you have an injury and ... you need some scans, but you have to wait, ... three weeks, four weeks for approval for an MRI scan. ..., you have to just wait for investigations ..., or operations, ... you’re waiting three months for an operation that really needs to be done straight away” (non-OP4, Male, 41 yrs)

There were a number of system related issues that amplified delays in implementing helpful interventions. Communication between stakeholders, especially between agents and practitioners, were often related to the time of day the physiotherapist was called. Contact was often attempted during consultation hours resulting in considerable time lapses before meaningful dialogue could be established. Participants also reported that the time taken to process approvals for therapeutic interventions or extensions to treatment plans contributed to delaying a persons’ timely recovery.

“Sometimes they ... take a while to return calls or they take a, quite a long time to approve anything, whether that be further treatment, equipment or whatever that person needs. They can take a really long time. You know, they say 28 days, well it can be longer than 28 days. So that’s definitely a barrier” (OP1, Female, 26 yrs)

The communication method used appeared to be a factor in the delays experienced. Almost all participants reported using hard copy letters and/or telephone contact methods when dealing with key stakeholders, especially general practitioners (GPs).

“I’ll often, ... assess the patient and write my assessment findings in a letter day one and then I’ll either give them a follow up phone call or a letter, [in] a couple [of days], it depends on the injury ..., if it’s a back related injury I know it’s going to be a while I’ll give them a progress report maybe four weeks down the track or a phone call and then on discharge as well” (OP7, Female, 29 yrs)

Fewer participants discussed the use of email communication as a means of speeding up these interactions or tracking conversations between stakeholders.

“... get information backwards and forwards that way [using email]. It’s probably ... a bit more useful than phone conversations ‘cause at least you’re not dependent on ... both [parties] being at the right place at the right time.” (non-OP1, Female, 54 yrs)

“... the reason that I [use] email, because there’s a trail of conversations ... this is ... just being more legally savvy, and being able to hold them [the insurers] accountable.” (non-OP5, Male, 42 yrs)

Accuracy in medical certification

Inappropriate certification by health professionals was considered to be a barrier to RTW by around 75% of participants. The single most commonly reported frustration (n=10) linked to certification was where other health care practitioners, who were responsible for certifying a person as fit or unfit to RTW, would classify a person as unfit for any work when the person, in the physiotherapist's opinion, had the capacity to do alternative or modified duties.

"... frequently people come in with a certificate of capacity that says not suitable for any work at all or not fit, and they definitely have capacity in some way... and it's a case of changing that." (OP3, Male, 30 yrs)

Participants' felt that some doctors adopted a conservative approach to patient care that could result in delays in certifying someone as fit to return to (some) work.

"And then I think GPs, sometimes ... perpetuate that as well, and say, "No, we don't want you to go back to work until you're 100% right." So often it gets delayed ..., and then the more it's delayed the evidence shows that the chance of it ever actually happening gets less and less." (non-OP10, Female, 51 yrs)

Communication

Almost all participants (n = 19) reported that communication with all stakeholders was an important facilitator in assisting RTW. Apart from the injured person, the stakeholders that physiotherapists most commonly communicated with were employers (n = 19) and GPs (n = 19).

"I would have long conversations with the employers and detail to them exactly what we're doing, and I would often ask them what can the employee do with what their capacity is at the moment. Because often the employers wouldn't even think about it. They'd just say "If they can't do this job I don't have anything else for them". And I'd explain to them that even them just being at work, even if their capacity isn't as great, it's, it's still a start, and it's getting them into the environment that they need to be in ..." (non-OP7, Female, 28 yrs)

"I guess as a multidisciplinary approach, every person involved in ... the worker's ... return to work and rehab[ilitation] should be involved in communicating with everyone else so whether it's the GP or a psychologist or a social worker or the OT for their return to work..." (non-OP9, Male, 39 yrs)

Participants were asked how they developed their communication skills. Eighteen participants reported that communication skills were developed "over time" and not linked to formal training.

"I've done nothing formal, nothing formal at all. Look, experience. I guess it's one of those things I, I guess I pride myself in being able to talk with anybody

who walks in my door fairly well, but no, I haven't taken on any formal communication training; it hasn't even crossed my mind to." (non-OP3, Male, 43 yrs)

"... how important it is, what you say to people and the language that you use so that you're not inflaming current misconceptions about someone's injury. ... I guess I've just, ... 30 years of practicing you just get better at what you say to people." (non-OP10, Female, 51 yrs)

Education about the compensation system

The OPs commonly reported that they attended the extended OP seminar training for numerous reasons including to extend their knowledge of the compensation systems in Victoria (n = 8), networking opportunities (n = 4) and the financial advantage of higher remuneration for each client consultation (n = 4). The majority of all participants (n = 18) reported that learning "on the job" was how they developed their initial knowledge of the Victorian compensation system.

"The education I got was when I was working in private practice, ... you just kind of had to learn on the go ... you kind of pick up the system as you go along." (non-OP7, Female, 28 yrs)

OP clinicians felt that undertaking the specific OP seminar training improved their knowledge, use of communication to facilitate RTW and resulted in changes to their practices.

"... it has been helpful and it's actually – it's probably exceeded my expectations because I wasn't ... expecting this but it really helped change my approach to WorkCover clients, and that's filtered through to the rest of the practice. So, as a practice, we're a lot more dynamic now" (OP8, Female, 55 yrs)

These responses were different to the "learning on the job" approach reported by participants, leading some non-OPs to confirm continued confusion or limited knowledge about aspects of the compensation system and its processes.

"... yeah, to this day, I'm still a bit confused as to how the whole system works, which is probably quite obvious." (non-OP7, Female, 28 yrs)

"... where we are talking about a long-term claim and potential not to return to work and, and I guess ..., I don't fully understand the legal implications of the insurance company." (non-OP3, Male, 43 yrs)

Mentors, in-practice colleagues/staff or in-service seminars were reported as primary sources of "on the job" information about treating compensable clients for all participants.

“I guess I’ve been mentored ... by ... experienced physiotherapists ...” (OP1, Female, 26 yrs)

A potentially sensitive topic raised by one participant related to the development of their knowledge and clinical experience. They reported that during the course of their recent early clinical experience in private practice they received inadequate support from senior clinicians and witnessed abuse of the compensation system by fellow practitioners.

*“I would get ... the same WorkCover clients come in three or four times a week for a long, long time. ... some of them were there from before I started to when I finished, ... and it was my seniors treating them, and it’s almost like it’s their bread and butter and they just keep them coming. I think ... it’s easy for them. They do the same treatment every time. They don’t change anything. I was never comfortable with it. ... And so I had some people saying to me, you know, “Just, just fill your list with WorkCover clients”.
(Participant details suppressed)*

Some participants no longer seek out compensable clients because of time, low remuneration for services provided and frustrations dealing with the system.

“... as you get more, ... experience ..., you tend to just stick with ... private patients, they pay better, they do. And it ... only pays, what \$49 or something per session? And you know, then you get paperwork and you know, calls from employers and insurers, and ... workers that are, that aren’t really interested in going back to work, and you know, it’s the ... whole story.... And it just gets a bit too much sometimes. You just, sort of, think, ‘I’ll just treat people who pay straight away,’ oh, then you have to wait for payment, and yeah, so all that sort of stuff. ... there [are] many factors.” (non-OP4, Male, 41 yrs)

“... the person that I was working for, for really said “We don’t want to see WorkCover clients, ..., and if you have to see them they pay a gap fee”. And I guess that was when I did see that ... there was a difference when people paid a certain amount.” (non-OP7, Female, 28 yrs)

5.4.3 Themes identified from the claims manager interviews

The themes arising from the interviews conducted with TAC and WorkSafe CMs were consistent with some of the themes identified in the interviews with the physiotherapists. CMs shared the views expressed by physiotherapists regarding the primary barriers and facilitators to return to work, medical certification practices, and communication. In addition, CMs emphasised that their own communication with all stakeholders was a potential facilitator or barrier in RTW. They reported that when they improved their communication and enhanced the education of stakeholders, positive dialogue with clients, workplaces and practitioners enabled transitioning RTW pathways. They also felt that

- when they improved their communication and enhanced the education of stakeholders, positive dialogue with clients, workplaces and practitioners enabled transitioning RTW pathways
- practitioners commonly failed to use the medical certificate correctly or were unacceptably influenced by patient wishes
- physiotherapists who had completed training programs (e.g. OPs) were different (better) in the way they approached compensable clients compared to those who had not completed training programs.

Communication skills

Like the physiotherapy participants, CMs reported that they develop communication skills over time. However, some receive coaching in customer service delivery and education in Motivational Interviewing (MI), varying with the policies of the employing agency. CMs for WorkSafe Agents reported the use of customer service training and coaching, whereas the TAC CMs unanimously reported training in and application of MI methods. All CMs reported high quality communication was an important aspect of their work.

“Probably over time, but also with regards to what questions to ask you can get that from your injury management advisors, you know you might talk about an injury or you might talk about an independent medical exam outcome and they will give you the questions to ask really. So, just from experience you’re learning the sort of questions to ask.” (CM7, WorkSafe, Female, 28 yrs)

“So I came with a level of ... experience in discussing health services. So there’s ongoing training as well, we’ve done independence plan training. There’s always been significant input in regards to communication methods, best ways to speak with people. We’ve got training coming up again, ah about how to do that. So we get a whole lot of input from the TAC, um and they don’t just drop it, it is actually ongoing. So, that sort of support is there. Um, we’ve done our motivational interaction [Motivational Interviewing] training.” (CM4, TAC, Female, 50 yrs)

Certificate of capacity

CMs report issues with medical certification, and consider that some practitioners give in to patient requests. They felt that, compared to GPs, physiotherapists will certify a fitness to RTW earlier but progress to “full duties” more slowly. Some CMs also felt that the certificate of capacity is misused by many parties, especially by practitioners giving in to the wishes of a patient.

“... allied health practitioners, physios and chiros will tend to, and this is anecdotal, will tend to give someone a capacity for light duties for work earlier than a GP, but they tend to want to hang on to them for longer. It might be that they think they need to

continue to have treatment, um, hands on treatment for a while, but that influences the certification and they don't get a clearance certificate.” (CM1, WorkSafe, Male, 42 yrs)

Physiotherapy education

CMs thought that differences in treatment provided by physiotherapists to compensable clients was linked to training. They reported that OPs tended to focus on patient recovery needs to enable clients to RTW, while non-OP tended to focus on maintenance treatment rather than return to work.

“I think ..., from my experience the occupational physiotherapists did have a particular focus on their recovery needs and their rehabilitation needs, whilst always keeping the return to work focus. So they would be talking about returning to work and how their injuries will be managed with that end in need. They can also facilitate a return to work process, ... and they can be their primary treater by providing us medical certificates. So, probably more accurately demonstrating to the TAC what their abilities are and what their restrictions are. You could, you knew that with an Occupational Physiotherapist they were focusing on a return to work outcome as well. Um as opposed to physiotherapists, they're more focused on treatment, um not necessarily were they focused on treatment with an outcome of return to work. I'm sure it was, I'm sure it is, but that's just my experience. Occupational Physiotherapists tend to have that end goal at the forefront, the return to work at the forefront.” (CM9, TAC, Female, 47 yrs)

5.5 Discussion

The key outcomes of this study

5.5.1 Delays in accessing services for patients were a common source of concern amongst physiotherapists. Since interviews were conducted, related to approvals have been addressed by TAC and WorkSafe. A number of common items requested by health care practitioners are now in streamlined approval systems. TAC and WorkSafe have also implemented the automation of routine approvals. Examples include medical referral for magnetic resonance imaging, routine pathology tests, streamlined surgical approval procedures and physiotherapist referral for services or equipment. Future investigations might revisit the effect of these changes on the delivery of services and physiotherapist perceptions regarding systems efficiencies.

5.5.2 Communication skills are relevant to all stakeholders within the compensation system. All participants reported experiential learning as a key driver to the development of this skill, with targeted training available only to a subset of claims managers. TAC appears to consider skills in Motivational Interviewing important for

case managers, but this does not appear to be provided for the WorkSafe agents interviewed and not for stakeholders other than case managers. Given the high stakes associated with empowering injured workers and communicating effectively with other stakeholders in facilitating RTW, standardised training in high level communication skills might be considered.

5.5.3 All parties agreed that united beliefs, advice and actions by stakeholders improve the RTW outcomes for injured compensation clients. Systems that facilitate communication between stakeholders that improve on hard copy and phone conversations should be considered. If electronic communication between stakeholders was introduced it might include prompts for service providers to remember the importance of RTW as a rehabilitation strategy, and enable asynchronous but co-ordinated discussion and planning.

5.5.4 Participants agree that workplaces and the injured worker play a pivotal role in RTW. Where relationships are positive, all parties strive for a common goal and the worker is a willing participant, RTW outcomes are generally favourable. Alternatively, negative patient factors, difficult workplaces and naive practitioners can result in extended time off work. The CMs identified that all of these issues centre on good communication. Little is known about the beliefs and practices of employers and the extent to which their behaviour might limit barriers to RTW.

5.6 Conclusion

This section summarises the perception of physiotherapists and case managers about key barriers, facilitators and system issues within the worker's compensation environment in Victoria, Australia. Injured worker attitudes and workplace factors were considered to have an important influence on timely RTW. Clinicians play an important role in facilitating RTW through appropriate communication, patient education and appropriate certification of work capacity. Case managers link claimants, employers and health practitioners, and enable the facilitation of timely RTW and constructive stakeholder planning. The system may benefit from a number of enhancements including stakeholder education in compensation system processes, development of effective communication skills and strategies, and the use of online tools to enable education and communication, and reduce the influence of factors that delay RTW.

6. Development of the Early Intervention Physiotherapy Framework (EIPF) Education Materials and Assessment of Change in Practice

6.1 Background

In this study, an action research approach was taken to develop, implement and assess the perceived effectiveness of online teaching and learning material that addresses the Victorian compensation system, the Clinical Framework and the role of appropriate certification in timely RTW. Action research uses the process of plan, act, observe and reflect prior to commencing the cycle again (Kemmis et al., 2014). In this project, round one and two were the initial planning and acting phases. Observing and reflecting were incorporated into the one month implementation and refinement period (round two), before again cycling through the action research process (rounds three and four).

The scope of the initial project was to identify RTW barriers and facilitators and describe physiotherapists' roles in timely and appropriate certification. This is reported in Sections 3, 4 and 5, of this report. During the development of the education resources in the initial phase of the project, a contemporaneous agreement between the Australian Physiotherapy Association (APA) and TAC/WorkSafe to improve practitioner funding for compensation clients occurred. The resultant outcome was an opportunity for an expansion to the planned education content to support this endeavour. An important focus of the reconceptualised project was to amalgamate information gathered from multiple sources, addressing the challenge for the educational material to drive desirable practitioner behaviours. The challenge was to match the education material with the needs of the compensation agencies (TAC and WorkSafe), practitioners and injured workers/TAC clients.

6.2 Aims

The primary aim of this part of the project was to develop an online education program to support and enhance physiotherapists' knowledge of the TAC/WorkSafe compensation systems and best practice in supporting injured workers. The secondary aims included to

1. appraise, summarise and collate information and resources that support physiotherapists in providing support to injured workers, provide guidance in appropriate RTW certification, and create resources that support awareness of

policies and procedures affecting RTW for people with injuries compensated by the TAC and WorkSafe.

2. develop an online education program to meet the objectives of the Early Intervention Physiotherapy Framework (EIPF) program
3. report on the self-perceived confidence of practitioners completing the online education
4. report on the costs associated with the development and delivery of an online, widely disseminated education program
5. identify the potential efficacy of the online education program on outcomes such as return to work and compensation costs.

6.3 Development of the Online Education Materials

The development of learning objectives, and education resources relevant to the EIPF required extensive consultation between the key stakeholders. Stakeholders were Health & Disability Strategy Group (HDSG) as overseer and implementer of the EIPF program, Monash Physiotherapy as the educational content developers, Clinical Panel members as the clinical quality control arm of the HDSG, the consultants who had delivered education to physiotherapists in face to face seminars, ISCRR as the principle funding agency, and the APA as the representatives of the physiotherapists who deliver services to people covered by WorkSafe and TAC compensation schemes. The Clinical Panel included experienced medical and allied health professionals, whose role is to conduct clinical reviews, provide clinical support to claims staff and advise healthcare providers. The Monash University educational team included the project lead, project manager, project staff from the Department of Physiotherapy, an online learning developer and representatives from the online hosting platform. Steps in the process included review, alignment and refinement of relevant resources, development of learning objectives, approval of learning targets by stakeholders, development of cases through which key education messages would be delivered, development of case storyboards, review and approval by stakeholders, recruitment of actors and film makers, filming, editing and refining the videos of the cases, identification of suitable interactive software and development of proficiency in its use, development of online education material using interactive software, identification of a suitable online learning platform, development of quizzes to assess participant knowledge, assessment and correction of compatibility issues between interactive software with the online platform, review, revision and approval of final set of modules, finalisation of material including reduction to fit a 2.5 hour learning package, piloting modules and module refinement prior to roll out.

6.3.1 Round 1 - Development

Methods

Education resources readily available to practitioners were assembled from TAC and WorkSafe websites, along with education material and resources used in seminars for Occupational Physiotherapists (OPs) provided through the HDSG. Information was also sourced from OP and non-OP physiotherapists during in-depth interviews about the barriers and facilitators to RTW and certification practices (described in Section 5).

Information was cross checked across all resources that informed physiotherapy practice including the certificate of capacity and associated links, approved referral pathways, the clinical framework, TAC and WorkSafe policies and procedures for physiotherapists and the relevant legislative acts of the Victorian Parliament that govern transport and workplace injury compensation schemes. Resources available to practitioners from TAC and WorkSafe websites were cross checked for consistency and accuracy. Key messages and learning targets were extracted. Key messages delivered in face to face seminars were assembled. Information in legal acts and stated policies and procedures was assessed for alignment, frequently in discussion with HDSG. A parsimonious set of key learning objectives were derived and reviewed in concert with HDSG and Clinical Panel representatives. The file containing the initial set of potential learning objectives is very large and is available on request.

The agreed learning objectives informed the design of four cases that would be built to model and reinforce target behaviours to participating physiotherapists and provide a vehicle for the delivery of resources relevant to best practice, policies and procedures. Content and activities that addressed the objectives were distributed across the four cases and their associated quizzes, with reinforcement of key concepts recurring across cases. A proposal for the nature of suitable cases was discussed with representatives of HDSG, who provided the research team with credible examples of typical interactions between physiotherapists and their patients. Through discussion it was determined to design two cases relevant to TAC and two relevant to WorkSafe as the policies and procedures varied slightly for the two insuring bodies. Cases were designed around commonly presenting conditions. The level of complexity was minimised to facilitate an uninterrupted view of key learning targets. A steering committee comprised of representatives of HDSG (n=3), ISCRR (n=2), Monash University (n=3), the APA (n=2), the Clinical Panel (n=4), and independent physiotherapy representatives (n=4) was convened. Approval of the case concepts and focus was completed by this representative group. The educational team then drafted case scripts and story boards for review and approval. Although we sought feedback widely, approval was provided by the Clinical Panel and HDSG representatives.

The next step in the development of the training package focused on the assembly of relevant resources. This involved

- sourcing information about the TAC and WorkSafe policies and procedures from available resources within HDSG and from relevant websites
- clarifying key information about the Clinical Framework, Certificate of Capacity, communication requirements and referral pathways
- aligning and clarifying discrepancies in existing documents
- identifying an online learning platform that could deliver high speed access to a large number of concurrent users, that included assessment and outcome reporting, and that could provide feedback on progress through the learning activities and a personalised certificate of completion
- identifying providers who could construct on-line interactive activities or software that would enable the project team to develop these resources
- assessing compatibility of the online learning platform with the interactive software
- engaging an IT specialist in online learning and delivery.

The online learning platform licensed for this project was the Values eXchange (VX, Vide Pty Ltd). This platform offered an interactive site with options for community discussion and interaction. The provider had a history of strong performance with Monash University. The platform license included high performance web site hosting, high level of accessibility for users, as well as extensive database storage, reporting and feedback functions. Extensive re-branding and functionality modification of the platform was required to remove many of the community interaction capabilities at the request of HDSG, contributing considerably to the costs of engaging this provider. However, this platform provided a very effective medium in which to embed the training videos, EIPF resources, certificate of completion and associated assessment material.

Scripts (storyboards) for the four cases were developed and revised following review by HDSG. Actors and a film team were hired and story-boards were converted to video assets. Videos were edited into manageable segments to allow for easy modification and updating. Edited videos were compressed and embedded into Articulate Storyline software, into which interactive challenges to learners could be integrated. These interactions were designed to stimulate reflection and review of relevant documents and resources. To handle the range of interactions and resources, an Articulate Storyline template was developed to make the editing of education material more manageable. The template also made interactive experiences consistent across all four cases.

Assets and resources were converted so that they could be included as content within the interactive software. Users could then access resources required to complete

cases within the same web site, removing the potential for difficulty associated with moving across sites. Several program modifications were required to the Articulate Storyline files to enable the embed feature to operate seamlessly on the online learning platform, and to maximise the functionality of both Articulate Storyline and VX platform. Modifications included additional coding applied to web pages, responsive design elements to allow a high level of accessibility for users on varying screen sizes and devices, reactive design elements to guide users through the learning process and provide a just-in-time approach to delivering information, and consistent design features to make the user's experience fluent, familiar and unambiguous.

The VX learning platform is designed to collect a range of data, however several extra fields were required to validate user information relating to physiotherapist registration requirements. These fields did not form part of the VX platforms normal registration process and a customised registration process was created. The extra fields assisted with data analysis and the automatic process for generating the certificate of completion. The automatic certificate generation was a custom built feature added to the online learning web site.

The research team identified challenges that clinicians faced when looking for specific information, as information was distributed across a large number of inconsistently linked web sites. Systematic assessment, revision and refinement of web site content resulted in improved alignment across resources. We argued strongly for, and developed, a local set of reference documents for practitioners, to limit the number of sites and resources they needed to review when seeking information relevant to service delivery. These resources included summary documents that rapidly directed physiotherapists to key information and web sites relevant to their query.

Education resource files were encoded to PDFs or Microsoft Word documents to render them as accessible as possible. A compressed zip file was created to allow users the option to download all resources at once and store them for later reference. Instructional videos were created to assist with both using the web site and working through individual cases. Educational material and resources were compiled and edited by the Monash education team. All resource materials were provided to the HDSG, Clinical Panel representatives and other steering committee members for approval for roll-out during the Pilot 1 phase.

6.3.2 Round 2 – Pilot 1

The next stage in development was a pilot trial testing the phased roll-out of cases. Fifty-six participants enrolled in Pilot 1 representing key stakeholders from the Monash University educational development team, HDSG, Clinical Panel representatives, APA, ISCRR, steering committee physiotherapists, VX staff and a small number of external practicing physiotherapists recommended by the APA. The four cases were sequentially rolled out during July 2014, allowing participants opportunity to provide feedback. Forty-three participants reviewed the training online, with 22 providing feedback to the program development team. The Pilot 1 feedback cycle was completed at the end of July 2014, allowing a two week refinement period before the full trial Pilot 2 launch.

A number of program modifications were completed by Monash University, HDSG and Clinical Panel representatives based on Pilot 1 feedback: refining the alignment of questions with learning targets; editing training videos and question content to reduce training time to between two and three hours; removal of content related to communication skills development based on the position taken by HDSG that physiotherapists have high level communication skills in summarising relevant information, checking client understanding and aligning practitioner language to reflect the importance of the client driving the rehabilitation and RTW process; further compression of video formats to reduce download times; refinement of the interface design for the clinical cases to improve user experience; final review of resources content and internet links for accuracy; refinement of question feedback; further editing of site branding for HDSG, TAC and WorkSafe compliance; modifying instructions on site navigation to complement changes to the training and platform; completing a check of the website registration process, EIPF sign-off paperwork and procedures, and data acquisition processes. Approval was gained from HDSG to commence the second pilot phase.

6.3.3 Round 3 – Pilot 2

Pilot 2 was a live simulation of the EIPF training that engaged a small group (n=54) of waitlisted physiotherapists over a two week period in August, 2014. This group of participants had registered their interest in completing the new EIPF program with HDSG in the preceding three months. The educational material was completed to the go-live stage and this pilot was designed to test system performance, practitioner achievement of learning targets and gather feedback on issues requiring attention.

Practitioners were required to complete four clinical cases representing example cases for TAC and WorkSafe clients. They also completed baseline and post-cases questions about their confidence in treating within the EIPF:

1. How confident are you in your understanding of the key principles of the Clinical Framework for the Delivery of Health Services?
2. How confident are you in your ability to adhere to the service standards of the Early Intervention Physiotherapy Framework?
3. How confident are you that you understand the policies and procedures associated with treating TAC clients and injured workers?
4. How confident are you in your ability to correctly complete a certificate of capacity?

Participants were also asked for feedback about their online learning experiences. Feedback included information about the videos and quizzes, the learning resources, what other content they would like developed, about their understanding of the Clinical Framework and the time taken to complete the program. Minor modifications to the program were made in response to feedback prior to rolling out to all interested physiotherapists.

6.3.4 Round 4 – Roll-out and on-going monitoring

The program was formally launched on September 1, 2014. Data collection described for Pilot 2 continued following the launch till the present as new physiotherapists enrol in and complete the online training. On-going monitoring has enabled tracking of participant understanding of key concepts and has informed minor incremental program modifications. Data on user experience of the program presented in this report were collected from August 2014, at the commencement of the Pilot 2 phase, until July 31 2015 inclusive. During the log in and enrolment process, participating physiotherapists were provided with the option of opting out of research data analysis. Data for all enrolling physiotherapists were captured, however, only survey outcomes and demographic data for consenting physiotherapists were analysed and provided in this report.

6.3.5 ISCRR Compensation Research Database

In September 2015, data were extracted from the ISCRR Compensation Research Database (CRD) for all WorkSafe injury claims in the proceeding five years. On closer inspection of the available data this analysis was contained to claims with an affliction date in 2014 due to the limited information within the data sets for the EIPF trained practitioners and the extended roll-out of the program. This constraint was set to coincide with 6 months of OP data capture in the first half of 2014 and EIPF (EP) data capture in the second 6 month period of the year. Claims were excluded from the analysis if they contained errors in logic (e.g. an initial certificate of capacity was issued before the date of injury), a total claim cost of less than \$100 or claims with costs for treatment by a chiropractor. Claims treatment information was determined from the services information and a count for total services, regular physiotherapy (RP)

services, occupational physiotherapy (OP) services and EIPF physiotherapy (EP) services was calculated. Service counts were then used to categorise claim treatments into one of eight possible physiotherapy service combinations: none, RP only, OP only, EP only, RP/OP, RP/EP, OP/EP and RP/OP/EP. Incapacity days was used as the surrogate for time off work and the event indicator of RTW was determined from claims with a valid date on which the claimant returned to work. Claims without a valid RTW date were censored at December 31 2014.

6.3.6 Analysis

Analysis of data was divided into three discrete sections: 1. Costs associated with the education program; 2. Quantifiable outcomes and qualitative information derived from physiotherapist responses collected as part of the education program (VX data) and 3. Practitioner servicing trends and claimant RTW before and after EIPF training including a comparison of EIPF and non-EIPF practitioners. The latter analysis was ambitious given the narrow window of EIPF data (from September 1 to December 31 2014).

Descriptive statistics were used to present and summarise quantitative data. Pre and post-program differences in responses to questions regarding practitioner confidence with providing services to compensable patients were compared using χ^2 tests. Open text responses were collated and open coded to identify themes in participant responses.

Univariate linear regression was used to examine differences between incapacity days across the physiotherapy treatment categories. Cox proportional hazard ratios were calculated for incapacity days and compared between practitioner service types. RTW was designated as the event marker and cases were censored at their maximum time point if they had not yet RTW. The regression model was adjusted for sex, age at injury onset, injury type (using categories from Table 4.1), ANZSCO occupational groups, total ordinary pre-injury weekly income, socioeconomic status, the amount of hospital payments and payments for legal costs. Hazard ratios for practitioner groups were compared to regular physiotherapy (RP) as the reference group. Kaplan-Meier survival estimates curves for each physiotherapy group type were also calculated. To compare the EIPF program roll-out to the previous OP program, survival estimates and hazard ratios were also calculated for two time periods, 2010 and 2012. These times were selected due to the accumulation of a critical mass of OP providers that was noted within the data over this period.

6.4 Results of the EIPF education program

6.4.1 Learning objectives for EIPF education

The task of clarifying key learning objectives for the program included resolving two challenges: 1) a number of messages that participants received from different sources were in conflict; each of these required clarification; 2) changes in procedures were being made concurrent with the development of the EIPF program and included a revised certificate of capacity. This resulted in substantial changes to many web sites and core documents.

Concurrently we assembled the key information required to deliver a best-practice model of service delivery and constructed these as observable and measurable outcomes. The detailed learning objectives (available on request) for the EIPF education program were provided to the HDSG for review, and through discussion, a parsimonious set of learning targets were agreed (Table 6.1).

Table 6.1 Final teaching and learning objectives and location in the education resources

Objectives	Covered in Cases/Material	Resource Document/Location
Describe the legislation governing the structure and funding for TAC/ WorkSafe and the relationship to HDSG	No*	About HDSG, TAC & WorkSafe*
Predict the actions that HDSG will take to promote quality practitioner management strategies	No*	About HDSG, TAC & WorkSafe*
Recognise structure of TAC and WorkSafe	No*	About HDSG, TAC & WorkSafe*
Describe differences in TAC & WorkSafe processes in the following areas: certification, RTW for compensable patients, claims management process & model	Yes	Comparison of TAC & WorkSafe
Identify clients/injured workers eligible for support under the Early Intervention Physiotherapy Framework	Yes	EIPF Policy
Describe the fee structure in the EIPF	Yes	Summary of the fee structure
Describe reporting requirements to the appropriate bodies: e.g. management plans, outcomes assessment	Yes	Physiotherapy Treatment plans, PMP, TNP
Describe the role of the case manager in supporting early return to work/function	Yes	TAC Policies
Describe the information that the physiotherapist needs to gather and communicate to the case manager to facilitate early return to work/function	Yes	Physiotherapy Treatment plans, TAC & WorkSafe Policies
Describe communication methods that facilitate contact with case manager and employer	Yes	Contacting the TAC
Describe the policies that govern services covered by TAC/ WorkSafe (e.g. gym, pool etc.)	Yes	TAC & WorkSafe Policies
Describe what happens to the certificate after it is completed by the health professional	Yes	Certificate of capacity, video interaction case 1.
Describe reliable and valid outcome measures recommended by TAC/Worksafe	Yes	Outcome Measure Table
Describe the World Health Organisation framework for classification of health	Yes	Case 3 questions
Identify impairments, activity limitations and participation restrictions as distinct and measureable health outcome	Yes	Case 3 questions
Argue why standardised outcome measures improve patient monitoring	Yes	Case 3 questions

Describe the utility of function measures and contrast these to pain measures in assessment that guides RTW/function

Yes

Case 3 questions

Select an appropriate outcome measure in response to specific patient presentations

Yes

Case 3 questions

Recognise the Return to Work Self-Efficacy (RTWSE-19) questionnaire

No

In Outcome Measure

Use RTWSE-19 outcomes to determine probability of early RTW

No

In Outcome Measure

Apply suitable outcome measures to assess function and psychological and social factors that might impact on RTW/recovery

Yes

Case 3 questions

Select/identify questions suitable for eliciting information regarding patient and work factors that might impact on RTW/recovery

Yes

Case 3 and Case 1

Collect health measures at the first patient assessment.

Yes

All cases

Reassess regularly; recognise that patients can be given copies of self report health outcome measures which they can complete before a subsequent appointment.

No

No repeat cases in the tasks

Recognise when health outcomes are not changing across time

Yes

Case 2 quiz questions

Describe actions expected of physiotherapists when health outcomes are deteriorating or not changing across time

Yes

Case 2 quiz questions

Recognise appropriate referral pathways and skills of other health professionals

Yes

All cases

Describe a plan to facilitate early & sustained RTW/recovery in the form of a series of strategic goals

Yes

Case 1 + 2

Tailor management targets to needs identified using the RTWSE-19 questionnaire

No

Not used in cases

Describe strategies to facilitate self-management

Yes

All cases

Develop a strategy for patient education and setting expectations

Yes

All cases

Give the patient consistent messages about their engagement in the rehabilitation process

Yes

All cases

Develop a self-management strategy with the patient/client that facilitates sustained RTW/function, empowerment and self-care

Yes

All cases

Collaborate with patient/client to develop key goals relevant to RTW/full function (SMART goals)

Yes

All cases

Report on progress toward key goals relevant to RTW (SMART goals) and modify SMART goals in response to changes in health

Yes

All cases

Describe when measurements should be taken (baseline, follow up, frequency and number of assessments)	No	No repeat cases in the tasks
Recognise the required standards in record keeping	Yes	Health Records document
Implement goals focused on optimising function, participation and return to work and independence	Yes	All cases
Whenever possible apply evidence based interventions, avoid interventions that are known to have no effect	Yes	All cases
Describe the value of clinical practice guidelines (CPGs), systematic reviews and randomised controlled trials (RCTs) in guiding best practice in physiotherapy interventions	Yes	Case 2
Quickly locate relevant CPGs systematic reviews and RCTs	Yes	Case 2
Engage patient in active therapy and limit passive therapy and dependence on physiotherapist	Yes	All cases
Engage patient in the design and implementation of rehabilitation strategies.	Yes	All cases
Apply the principles of the clinical framework in the care of all patients regardless of severity of injury	Yes	All cases
Documentation and recordkeeping standards will reflect the expectations of the APA	Yes	Health Records document
Communicate with others and work with other health professionals in the best interest of the injured person (see detailed communication objectives)	Yes	All cases
Describe and give examples of red, orange, yellow, blue and black flags http://www.physio-pedia.com/The_Flag_System	Yes	All cases
Monitor flags across time	No	No repeat cases in the tasks
Describe ways in which unhelpful perceptions/ responses may be amenable to positive change in response to therapeutic communication styles (See detailed communication objectives).	Yes	All cases
Describe the Stages of Change and how these are used to amplify engagement in therapy	Yes	All cases
Report ways to help people manage their health	Yes	All cases
Plan for discharge from the first appointment	Yes	All cases
Educate the patient to expect and manage relapses and to identify potential triggers	Yes	All cases

Advise patients about strategies for the management of injuries that are not related to the compensable injury	Yes	All cases
Describe the benefits of return to work for injured compensable patients/clients and when time off work is necessary	Yes	Case 3
Identify the important early and ongoing barriers and facilitators for each key stakeholder	Yes	All cases
List important modifiable injured client/worker behaviours	Yes	All cases
Outline sensible strategies for facilitating RTW/function	Yes	All cases
Describe strategies applying a team approach to RTW/function	Yes	All cases
Describe the benefits of a team approach to RTW/function	Yes	All cases
Describe the benefits associated with Occupation or Vocational Rehabilitation services on RTW/function	Yes	Case 3, TAC & WorkSafe policy documents
Describe the regulations that govern the use of Occupation or Vocational Rehabilitation services	Yes	TAC & WorkSafe Policies
Identify evidence that supports the benefits of work	Yes	Health Benefits of Work
Describe motivational interviewing and its role in supporting changes in behaviour	Yes	Motivational Interviewing document in Cases
Provide examples of modifiable patient/client behaviours	Yes	All cases
Describe how workplace modifications can influence RTW	Yes	All cases
Report the differences between certification for TAC, WorkSafe and non-compensable sick leave	Yes	Who can certify document
Describe who can write certificates	Yes	Who can certify document
Identify information required to complete the certificate	Yes	Certificate of capacity
Correctly complete TAC medical certificates or WorkSafe certificates of capacity	Yes	Certificate of capacity
Identify when time off work is necessary	Yes	Certificate of capacity
Recognise the importance of communication about certification with key stakeholders	Yes	All cases
Describe what happens to the certificate after it is completed by the health professional	Yes	Case 1

* Document removed from final version after feedback from HDSG and Steering committee

6.4.2 Demographic profile of participants

Fifty-four physiotherapists enrolled in Pilot 2, with 52 completing the training. Between the full launch of the training on September 1, 2014 until September 1, 2015, 1061 physiotherapists enrolled online with 928 of those completing the training. 780 enrolling practitioners provided consent for the use of their data and the demographic profile of these participants is provided in Table 6.2. Complete pre-post VX data were available for 725 consenting practitioners. The enrolling physiotherapists were roughly split 50/50 between males and females, mainly held Bachelor degrees, primarily worked in the musculoskeletal field and were either relatively inexperienced (0-5 years: 48%) or considerably more experienced (>10 years: 36%) practitioners.

Table 6.2 The demographic profile of consenting participants

	Pilot 2 (n=43)	Launch (n=733)	Total (n=776)
Age – years* mean (sd)	34.7 (12)	33.1 (9.6)	33.2 (9.8)
Sex n (%)			
- Male	24 (56%)	339 (46%)	363 (46.8%)
- Female	18 (42%)	393 (54%)	411 (53.0%)
- Undeclared	1 (2%)	1 (<1%)	2 (<1%)
Years in Healthcare n (%)			
- 0-5 years	22 (51.2%)	352 (48%)	374 (48.2%)
- 5-10 years	5 (11.6%)	122 (16.6%)	127 (16.4%)
- > 10 years	16 (37.2%)	259 (35.3%)	275 (35.4%)
Highest Degree Qualification n (%)			
- Diploma	1 (2.3%)	10 (1.5%)	11 (1.4%)
- Bachelor	27 (62.8%)	457 (62.4%)	484 (62.4%)
- Masters (coursework)	14 (32.6%)	213 (29.1%)	227 (29.3%)
- Masters (research)	1 (2.3%)	13 (1.8%)	14 (1.8%)
- PhD	0	5 (0.7%)	5 (0.6%)
- Other	0	35 (4.8%)	35 (4.5%)
Scope of practice n (%)			
- Musculoskeletal	43 (100%)	692 (94.4%)	735 (94.7%)
- Neurological	0	26 (3.6%)	26 (3.4%)
- Other	0	15 (2.1%)	15 (1.9%)

* data missing for 75 consenting physiotherapists.

6.4.3 EIPF training completion responses

Responses were collated from physiotherapists who completed the online program during the Pilot 2 and on-going monitoring phases. The median (IQR) time to complete the online training was 2.5 (2-3) hours. The raw feedback responses by practitioners are extensive and available on request. Most physiotherapists (70.8%) reported that they did not require further cases or content developed. Those practitioners who suggested extra content were primarily interested in complex cases involving multiple combinations of factors such as chronic pain, malingering or non-compliant patients, patients who require surgery, dealing with differing medical opinions, people with multiple psychosocial problems, people with poor recovery expectations, neurological cases, legal issues and dealing with difficult stakeholders (e.g. GPs or employers).

“Complex pain scenarios with major psychological confounders”

“Management of clients who present in a more sub-acute to chronic stage, often the most difficult clients present down the track, 3-4 months post injury due to poor medical advice or referral and they are consequently more difficult to manage”

A small number of participants also reported that on-going or refresher training could be beneficial.

“Is it worth having practitioners doing a 12 month or 2 year refresher case study?”

When asked about whether the education program improved their understanding of the Clinical Framework and other policies or processes, 98.9% of participants responded in the affirmative.

“Absolutely. It has outlined more clearly the procedures of working through VWA [now WorkSafe] and TAC clients, as in the past I have sometimes found information provided by TAC and VWA [now WorkSafe] representatives to be conflicting (with other representatives' information).”

The few (1%) participants who responded in the negative already felt that they had an adequate understanding of the framework and were already applying its principles in practice.

“No - largely familiar with these.”

“Only slightly, as we have been following this framework for years since it's (sic) introduction.”

Most participants (91.9%) reported that the videos and quiz questions were beneficial or helpful. Some positive responses came with a caveat including that the videos

(which ranged from 9.5 minutes to 15 minutes) could be shorter (3.7%), technical issues while playing the video or answering the quiz questions (3.4%), local computer or internet problems reducing speed (1.6%), or a request for clearer questions (5.5%).

“The videos were good - probably were a little lengthy - took a while to complete everything which I found hard as I am hard pressed for time at work as it is.”

“Yes they were but on a couple of occasions the question intention was not clear and I answered according to my understanding of what was meant and got the wrong answer when in fact it was just that I had not understood what was actually being wanted.”

Some practitioners reported that they preferred more traditional read and answer approaches to learning.

“A little more time consuming than I would have liked. Reading of info from resource folder then answering questions would have been more appropriate and less time consuming.”

Over 99% of respondents reported that they found the resources useful, with some reporting they had download and printed them as future reference tools.

“The resources are helpful and are easy to locate- I hope I am able to continue to login and access these in future. In practice I think this will be faster as I know where they are now!”

A few practitioners wanted more direction from TAC and WorkSafe on which outcome measures to use.

“[Additional resources needed] ...TAC preferred outcome measures.”

The general consensus from respondents about the online EIPF training was positive.

“The case studies were helpful, I was able to identify with most of them and review the quality of my own interactions with previous VWA [now WorkSafe]/TAC clients.”

Participants also reported that the online training aided their understanding of the Victorian compensation systems.

“I have found it difficult to find out “what I don't know” in relation to TAC/VWA [now WorkSafe] policy in the past through their respective websites, especially when colleagues have given me inaccurate information. This training has answered a lot of those questions and unknowns.”

The main negative comments on the training were related the length of time taken to complete and technical issues some practitioners experienced. With concurrent monitoring by the education team, we supported all participants and remedied most issues in a timely manner.

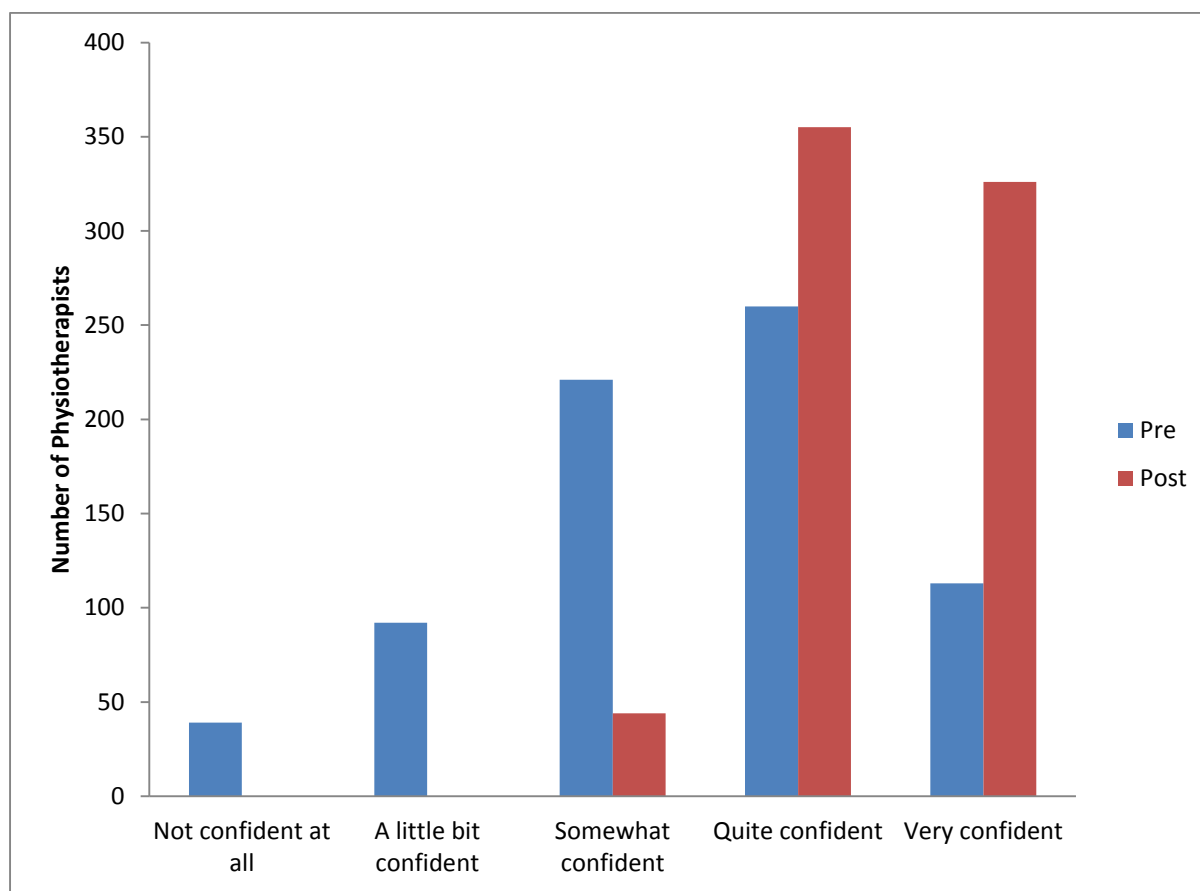
6.4.4 Confidence in practice following training

When asked about their confidence in understanding the principles of the Clinical Framework, physiotherapists reported a significant improvement between the case introduction and case conclusion ($\chi^2_{(8)} = 108.1$, $P < 0.001$, Table 6.3). Almost half (48.6%) of the physiotherapists who completed the training reported being not confident, a little bit confident or somewhat confident prior to the commencement of the education. In comparison almost all participants (93.9%) reported being quite or very confident on completion (Figure 6.1).

Table 6.3 Confidence in understanding the Clinical Framework

		Case Conclusion					Total
		Not confident at all	A little bit confident	Somewhat confident	Quite confident	Very confident	
Case Introduction	Not confident at all	0	0	4	28	7	39
	A little bit confident	0	0	18	49	25	92
	Somewhat confident	0	0	15	129	77	221
	Quite confident	0	0	6	123	131	260
	Very confident	0	0	1	26	86	113
Total		0	0	44	355	326	725

Figure 6.1 Confidence in understanding the Clinical Framework

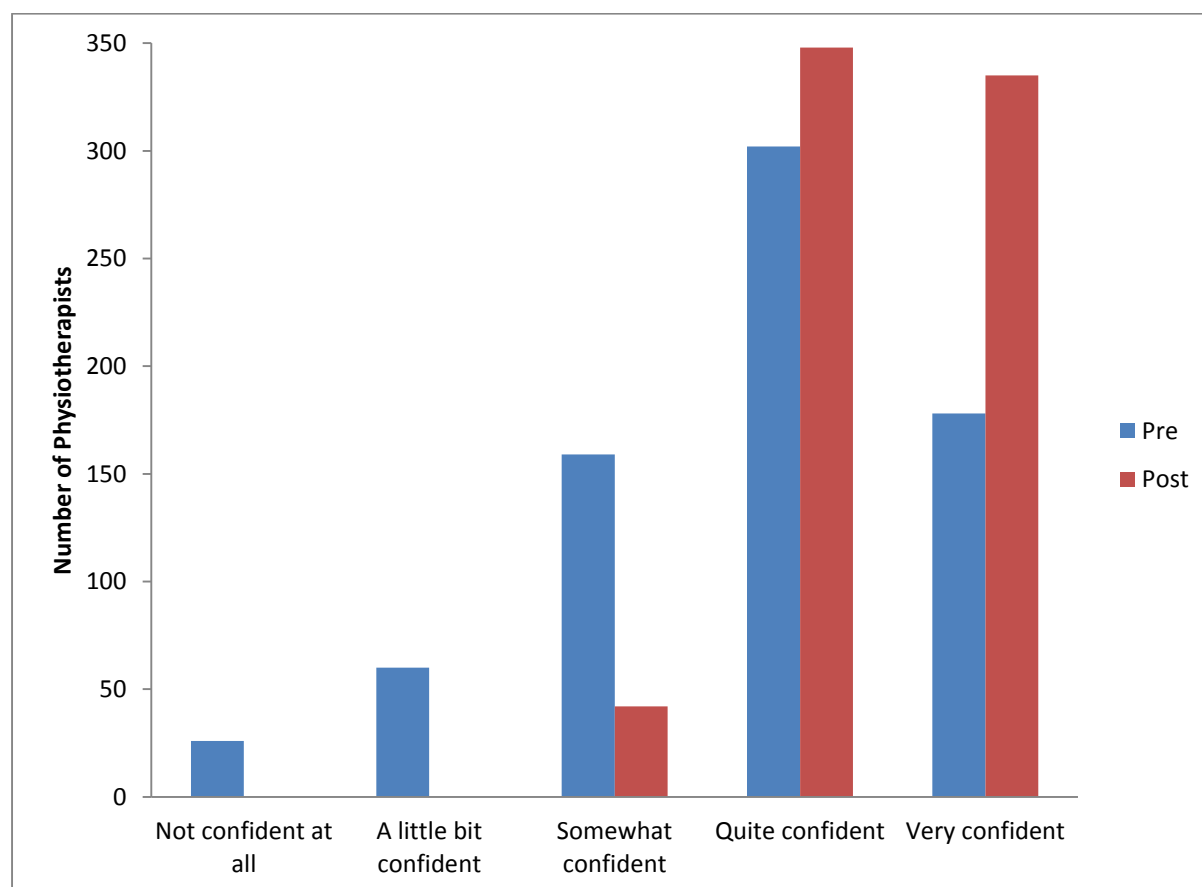


Comparing responses from the case introduction to the case conclusion, there was a significant change in reported adherence to the EIPF ($\chi^2_{(8)} = 154.8$, $P < 0.001$, Table 6.4). The number of physiotherapists who reported being quite or very confident in their ability to adhere to the Early Intervention Physiotherapy Framework service standards rose from 66.2% to 94.2% on completion of the online training cases (Figure 6.2).

Table 6.4 Physiotherapist confidence in their ability to adhere to the EIPF policy

		Case Conclusion					Total
		Not confident at all	A little bit confident	Somewhat confident	Quite confident	Very confident	
Case Introduction	Not confident at all	0	0	4	18	4	26
	A little bit confident	0	0	11	35	14	60
	Somewhat confident	0	0	20	95	44	159
	Quite confident	0	0	6	164	132	302
	Very confident	0	0	1	36	141	178
Total		0	0	42	348	335	725

Figure 6.2 Physiotherapist confidence in their ability to adhere to the EIPF policy

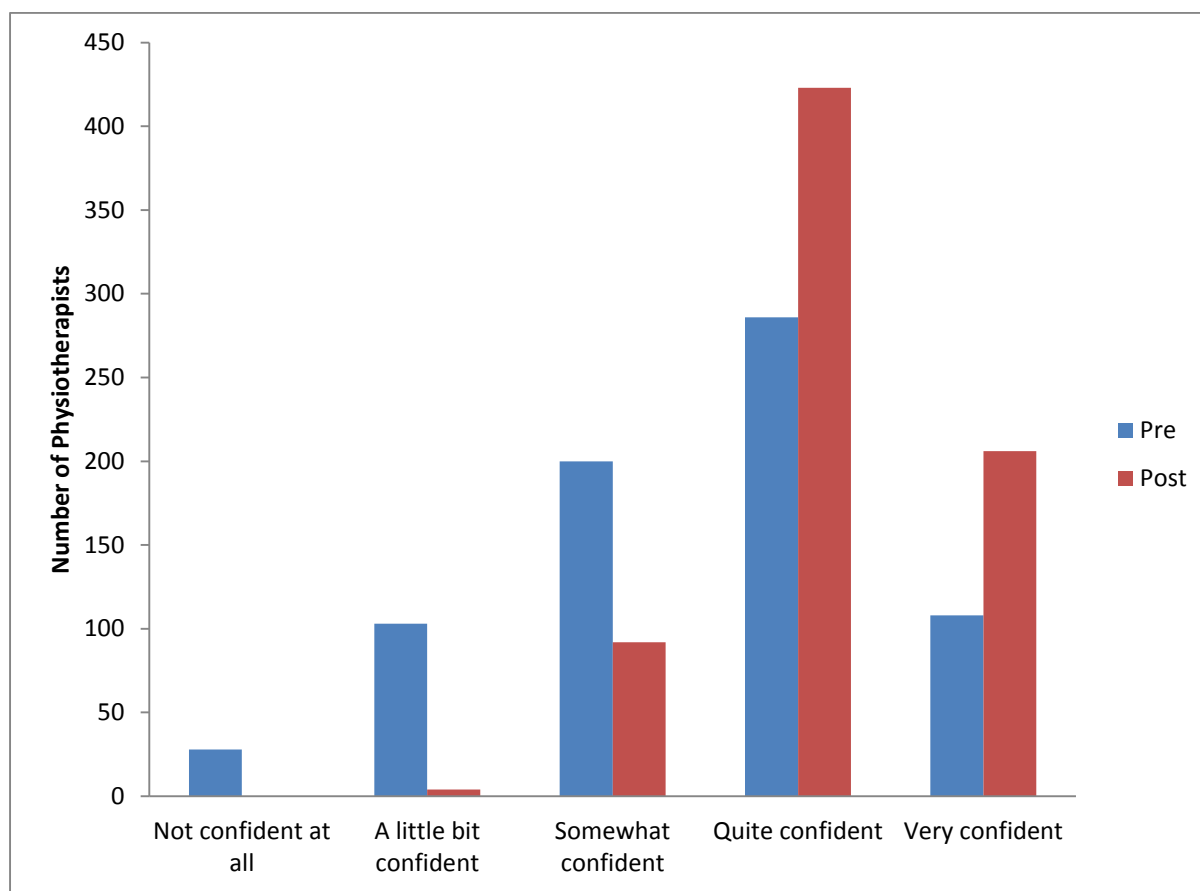


There was a significant change in the responses about confidence in understanding the policies and procedures relevant to the EIPF from the case introduction to the case conclusion ($\chi^2_{(12)} = 182.6$, $P < 0.001$, Table 6.5). There was an increase in the number of physiotherapists reporting being quite or very confident in their understanding of the policies and procedures associated with treating TAC clients and injured workers from 54.3% pre-education to 86.8% on completion of the online training cases (Figure 6.3).

Table 6.5 Confidence in understanding relevant policies and procedures

		Case Conclusion					Total
		Not confident at all	A little bit confident	Somewhat confident	Quite confident	Very confident	
Case Introduction	Not confident at all	0	2	13	11	2	28
	A little bit confident	0	2	32	57	12	103
	Somewhat confident	0	0	25	144	31	200
	Quite confident	0	0	18	172	96	286
	Very confident	0	0	4	39	65	108
	Total	0	4	92	423	206	725

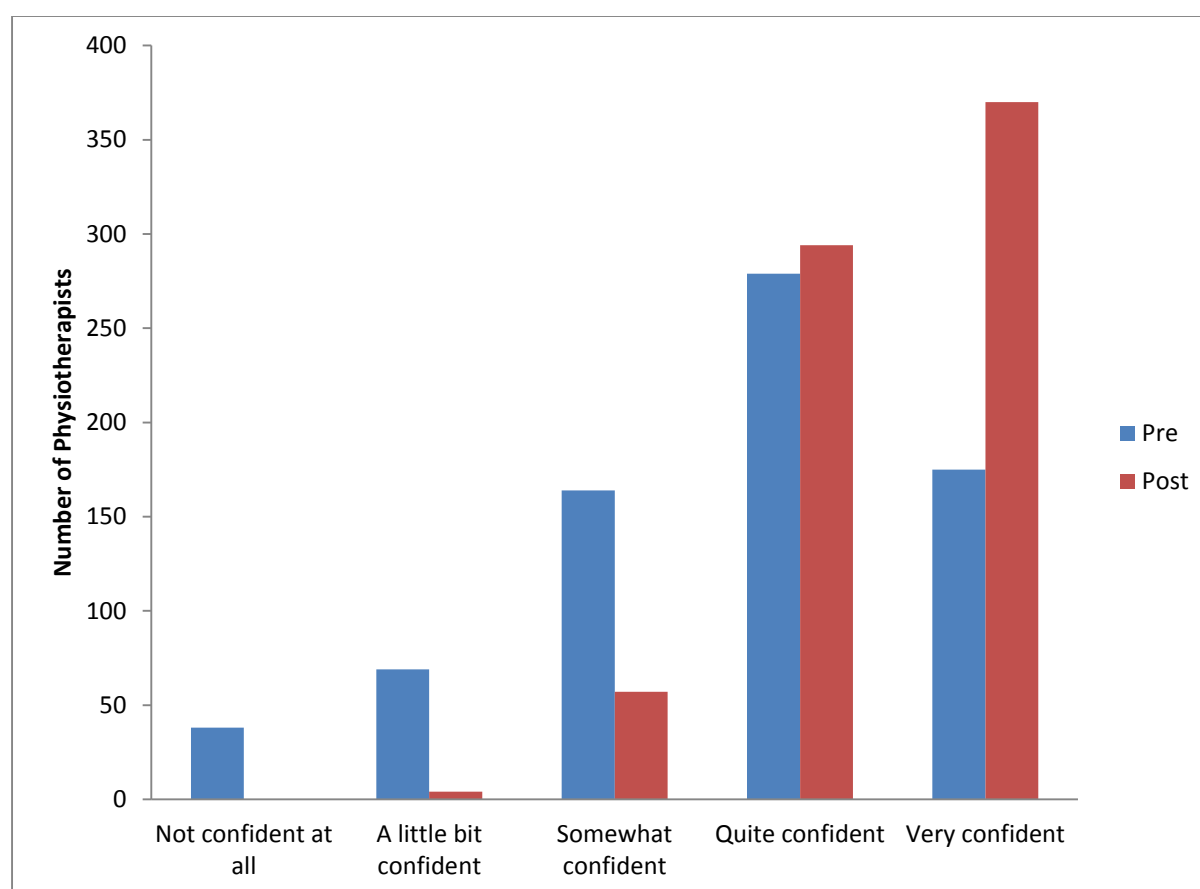
Figure 6.3 Confidence in understanding relevant policies and procedures



When participants were asked about their confidence in correctly completing the certificate of capacity, there was a significant change in responses after the online education ($\chi^2_{(12)} = 254.3$, $P < 0.001$, Table 6.6). At the completion of the program almost all physiotherapists reported (91.6%) that they were quite or very confident in their ability to correctly complete a certificate of capacity. In comparison, prior to the online education, over a third of practitioners (37.4%) reported being not confident, a little bit confident or somewhat confident in their ability to correctly complete a certificate of capacity (Figure 6.4).

Table 6.6 Confidence in the ability to correctly complete a certificate of capacity

		Case Conclusion					Total
		Not confident at all	A little bit confident	Somewhat confident	Quite confident	Very confident	
Case Introduction	Not confident at all	0	3	11	20	4	38
	A little bit confident	0	1	22	35	11	69
	Somewhat confident	0	0	14	97	53	164
	Quite confident	0	0	6	116	157	279
	Very confident	0	0	4	26	145	175
Total		0	4	57	294	370	725

Figure 6.4 Confidence in the ability to correctly complete a certificate of capacity


6.4.5 Proportion of questions answered correctly

Data from 31 questions collected across all cases are presented in Table 6.7 below for all consenting responders. More than 80% of responders correctly answered questions at the end of each case based on material provided in the videos, resources or question vignettes for 24 of the 31 questions. In two questions a little over half of responders answered correctly. These two questions were:

1. Which Clinical Framework principle recommends: “early injury management with a focus on educating the injured person about their injury, reassuring them about the natural history of the injury, and emphasising the importance of early participation in home, work and community life despite the injury.”
2. Refer to the ‘Physiotherapy Treatment Notification Plan’ and ‘Physiotherapy TNP Notes’ in your Resources folder. A treatment Notification Plan (TNP) would be required in which 2 circumstances?

These were answered correctly by 53% and 55% of responders respectively. Participants were asked a question in Case 1 about certifying a client as fit or unfit for work which yielded a correct response from 73% of physiotherapists. After an early review of question responses the education team developed an extra question and supporting material which was added to Case 2. The reinforcement of this concept is observed with an improvement in correct participant responses from 73% for the Case 1 question to 98% for a similar styled question in Case 2. Opinions of participants were sought on three statements about RTW. The first related to the AFOEM-Consensus Statement (2011) on the health benefits of work, the second related to an experts suggestion of the use of communication with employers to aid RTW and the third was that early RTW discussions are important to a workers’ rehabilitation. While responders strongly supported the health benefits of work and RTW as a rehabilitation tool, around 25% of responders did not support communication with employers as part of their treatment and RTW strategy for injured workers. A greater proportion of physiotherapists who had worked in health care for more than ten years positively supported communication with employers than those practitioners with less than 5 years of work experience (Table 6.8, Fisher’s exact = 0.009).

Table 6.7 Proportion of correct responses for questions presented at the end of each case

Case 1 (n=750)	Correct Answer	n (%)
Q1. Physiotherapist can write the 1st certificate	No	607 (80.9%)
Q2. Jane is fit/unfit for any duties	Fit	547 (72.9%)
Q3. What is the maximum certificate duration	14 days initial, 28 days subsequent	677 (90.3%)
Q4. Clinical Framework principle example	Principle 2	398 (53.1%)
Q5. Treat until Oswestry equals zero	No	721 (96.1%)
Q6. Use alternative strategies if no improvement	Yes	739 (98.5%)
Q7. Best decision in avoiding early discussions about ceasing treatment	No	741 (98.8%)
Q8. SMART Goal correctly identified	Yes	638 (89.9%)
<hr/>		
Case 2 (n=734)	Correct Answer	n (%)
Q1. Physiotherapist demonstrates Clinical Framework Principle 1 in vignette 1	No	467 (63.6%)
Q2. Physiotherapist demonstrates Clinical Framework Principle 4 in vignette 1	No	670 (91.3%)
Q3. Physiotherapist demonstrates Clinical Framework Principle 5 in vignette 1	No	582 (79.3%)
Q4. Worker responsible for injury reporting	True	718 (97.4%)
Q5. Worker & employer responsible for RTW planning	True	695 (94.3%)
Q6. Concurrent manual therapy treatment allowed	False	654 (89.1%)
Q7. Employer's responsibility to obtain the certificate	False	592 (80.3%)
Q8. PMP submitted by 5th treatment	Yes	712 (97.1%)

Q9. Continue twice weekly treatments	No	709 (96.6%)
Q10. Certify fit or unfit based on vignette 3	Fit	416 (98.1%)*

* This question was added later in the training to reinforce the concept of certifying clients as fit when they have any capacity to work.

Case 3 (n=730)	Correct Answer	n (%)
Q1. Loss of earning available if RTW part time	Yes	706 (96.7%)
Q2. Item not covered by TAC employer incentive package	Lump sum payment	673 (92.2%)
Q3. What is your opinion on the “Health benefits of work” statement	Agree – yes	708 (97%)
	Agree – no	9 (1.2%)
	Undecided	13 (1.8%)
Q4. Expert physiotherapist recommends communication with employer	Support	539 (74.2%)
Q5. Expert physiotherapist recommends early discussions with client stating RTW is an important rehabilitation component	Support	695 (95.7%)
Q6. Bill TAC for unrelated injury treatment	Disagree	704 (96.8%)
Q7. Book appointment with client to call employer and develop RTW strategies	Yes	591 (81.3%)
Q8. Continued functional outcome measurements relevant at 12 weeks	Yes	675 (92.9%)

Case 4 (n=724)	Correct Answer	n (%)
Q1. Physiotherapy TNP required in which two circumstances	Gap > 12m	397 (54.8%)
	> 5 sessions	678 (93.7%)
Q2. Which are standardised outcome measures:		
- Patient-Specific Functional Scale	Yes	500 (69.2%)
- Timed Up and Go Test	Yes	679 (93.9%)
- Berg Balance Scale	Yes	703 (97.2%)

Q3. Physiotherapist demonstrates which Clinical Framework Principle in vignette	Principle 3	673 (93.1%)
Q4. Physiotherapist can refer to a neuropsychologist	False	570 (78.8%)
Q5. Qualify for TAC loss of earnings support	True	683 (94.5%)

Table 6.8 Physiotherapists support for communication with the employer to emphasise collaboration between the health practitioner, employer and patient by years in practice

	Years working in health care			
	0 – 5 years	5 – 10 years	> 10 years	All
Do not support: n (%)	23 (6.4%)	3 (2.4%)	10 (4.1%)	36 (5.0%)
Neutral: n (%)	90 (25.1%)	24 (19.4%)	37 (15.2%)	151 (20.8%)
Support: n (%)	246 (68.5%)	97 (78.2%)	196 (80.7%)	539 (74.2%)

6.4.6 The direct cost of building the online education

The development of the EIPF training material was split into components for cost estimates. The greatest cost component was for salaries associated with the development and assembly of the education material (Table 6.9). Most time was invested by the Project manager; this included three months of data and information identification, assembly, alignment, refinement and evaluation. The material that was developed during this phase served as the framework for the learning targets associated with the online modules and a draft suite of resources that supported clinicians working within the compensation framework. Data evaluation included assessment of current education practices, accumulation of required materials and identification of key barriers and facilitators through interviews with key stakeholders (Section 5). Training material development included the compilation of an exhaustive set of learning targets that were refined to a parsimonious set, establishment of the four key cases that provided the vehicle for education, script and production notes development for each of the cases and their approval, sorting and compiling the resources required for both education and practice, question development and amalgamation of material into a cohesive package, and the iterative testing of options for delivering content to learners and practitioners via an online platform.

The case based approach to content delivery required filming and editing of four sequences that covered relevant material about the WorkSafe and TAC compensation

systems. There were costs associated with actors' fees and filming, editing and formatting of the footage. The film footage was migrated to an interactive platform using a software package (Articulate Storyline). This was purchased after consideration of the many options for developing the learning resources, due to its versatility and potential for integration with the online hosting platform. Additional content was created external to the software package; this included the development of imagery and interactive elements for embedding into the online learning platform.

Associated with the training content development was the purchase of a web site licence and integration of this material into a user friendly online environment. The online training specialist worked in conjunction with the host provider who provided a site that included detailed meta-data on learners and their site based activities. The site was systematically modified to deliver the material in a cohesive and accessible fashion. There were also significant branding and functionality modifications required by HDSG. Regular testing was required to assure that modifications did not affect the functionality or data collection of the online learning platform, or the learning resources.

On-going support has been provided by the Project Manager and the online education specialist to ensure timely communication about completions to the HDSG, assisting physiotherapists with technical issues in accessing the training, and modifying technical aspects of the platform and training to guarantee continued access for all parties. The online learning environment is continuously monitored for user accessibility issues. Interactive software files are republished, as Articulate Storyline software updates occur, to utilise new accessibility features as they become available. Updates to the online learning platform occur occasionally to improve usability and reflect current trends in web site design.

Table 6.9 Costs associated with the development of the online EIPF educational material

Item:	Cost:
1. Salaries for material development:	
Project Manager/Research Fellow (7 months)	\$65,061.50
Education Software/ Online Training Specialist (5 months)	\$25,225.00
Project Lead (JK - 225 hours)	\$10,081.00
Other Project Staff (PM - 30 hours, RI - 30 hours)	\$6,129.00
Sub-total	\$106,496.50
2. Salaries for on-going monitoring & modification:	
Project Manager/Research Fellow (12 months @ 0.1 EFT)	\$11,153.40
Education Software/Online Training Specialist (2 months)	\$10,108.00
Sub-total:	\$21,261.40
3. Training Software:	
Articulate Storyline	\$4,390.00
Sub-total	\$4,390.00
4. Training Films:	
Actors:	\$4,989.60
Filming, editing & formatting:	\$3,182.40
Sub-total:	\$8,172.00
5. Training Hosting Platform:	
VX platform licensing	\$32,000.00
VX platform re-design	\$13,913.00
Sub-total:	\$45,913.00
6. Miscellaneous Items	
Sub-total:	\$162.00
Total	\$186,394.90*

* The total cost is based on the direct educational product build costs. It does not include costs associated with conducting literature reviews, data collection for interviews and VX outcomes, data acquisition and cleaning, data analysis, or report development. This project also drew on considerable existing project staff expertise as researchers and post-graduate educators.

The ongoing hosting of the training material on the VX platform includes hosting the EIPF site, database management services, technical assistance for practitioners, a repository for information and an accessible means of contacting enrolled practitioners. Currently, 988 physiotherapists have completed the online training. This equates to known costs for the development and hosting of the online education program of \$188.66 per registered EIPF practitioner. Costs incurred by HDSG in supporting this development and delivery of the program were not monitored by the research team. The structure of the system is such that, with each new completion, the cost per participant will continue to fall.

6.4.7 CRD data results

A total of 33,590 claims with an affliction date in 2014 were extracted from the CRD. After application of the exclusion criteria, 18,032 claims were included for further analysis. The characteristics of claims is reported in Table 6.10. There were significant differences for sex, injury type, employment type, occupational group and early RTW (≤ 90 days) between claimants who received at least one physiotherapy service and those who did not engage with any physiotherapy services as part of their claim.

Table 6.10 The profile of claims included in the analysis of physiotherapy services.

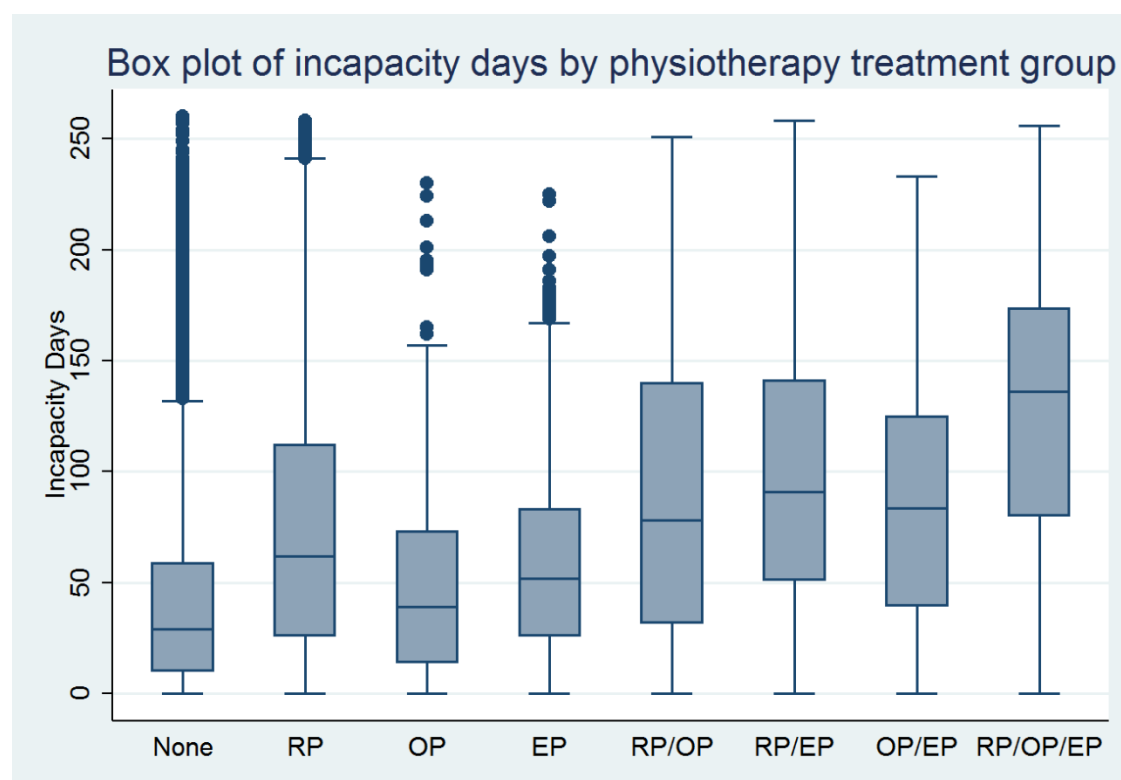
Characteristic	Physiotherapy (n=6,198)	No Physiotherapy (n=11,834)	Total (N=18,032)
Age when injured (yrs): mean (SD)	43.6 (12.3)	42.9 (13.2)	43.1 (12.9)
Sex - male: n(%) ^	3,717 (60%)	7,911 (66.9%)	11,628 (64.5%)
Injury type: n(%) ^			
- fracture	676 (10.9%)	1,185 (10%)	1,861 (10.3%)
- musculoskeletal	3,140 (50.7%)	3,099 (26.2%)	6,239 (34.6%)
- back/neck	1,719 (27.7%)	1,559 (13.2%)	3,278 (18.2%)
- other trauma	581 (9.4%)	2,697 (22.8%)	3,278 (18.2%)
- mental health	15 (0.2%)	2,111 (17.8%)	2,126 (11.8%)
- other diseases	67 (1.1%)	1,183 (10.0%)	1,250 (6.9%)
Employment Type: n(%) ^			
- full-time	4,355 (70.3%)	8,524 (72%)	12,879 (71.4%)
- part-time	1,101 (17.8%)	1,715 (14.5%)	2,816 (15.6%)
- other	742 (11.9%)	1,595 (13.5%)	2,337 (13%)
Occupation Group: n(%) ^			
- managers	431 (7%)	811 (6.9%)	1,242 (6.9%)
- professionals	743 (12%)	1,103 (9.3%)	1,846 (10.2%)
- technicians & Trade	1,028 (16.6%)	2,413 (20.4%)	3,441 (19.1%)
- community	1,134 (18.3%)	1,855 (15.7%)	2,989 (16.6%)
- clerical & admin	219 (3.5%)	452 (3.8%)	671 (3.7%)
- sales	284 (4.6%)	518 (4.4%)	802 (4.5%)
- machinery operators/driver	1,011 (16.3%)	1,763 (14.9%)	2,774 (15.4%)
- labourers	1,348 (21.8%)	2,919 (24.7%)	4,267 (23.7%)
Services by claim: median(IQR)*			
- any service	30 (15 – 57)	9 (4 – 17)	13 (6 – 31)
- any physiotherapy service	11 (5 – 21)	–	–
- RP service	9 (4 – 19)	–	–
- OP service	7 (3 – 13)	–	–
- EP service	6 (3 – 12)	–	–
Physiotherapy group: n(%)			
- none	–	11,834 (100%)	11,834 (65.6%)
- RP only	3,882 (62.6%)	–	3,882 (21.5%)
- OP only	183 (3%)	–	183 (1%)
- EP only	470 (7.6%)	–	470 (2.6%)
- RP/OP	112 (1.8%)	–	112 (0.6%)
- RP/EP	1,199 (19.3%)	–	1,199 (6.7%)
- OP/EP	164 (2.7%)	–	164 (0.9%)
- RP/OP/EP	188 (3%)	–	188 (1%)
Early RTW (\leq 90 days): n(%) ^	3,890 (62.8%)	10,322 (87.2%)	14,212 (78.8%)

Pre-injury weekly income (\$): median (IQR)	858 (522 – 1,170)	829 (397 – 1,140)	838 (448 – 1,151)
Total Medical & Like costs (\$): median (IQR)	2,714 (946 – 6,625)	237 (0 – 2,591)	987 (0 – 3,860)
Physiotherapy costs (\$): median (IQR)	554 (254 – 1,091)	–	–
Total claim costs (\$): median (IQR)	7,540 (1,884 – 18,947)	2,988 (1,148 – 8,435)	3,838 (1,350 – 11,814)

* Data missing for 1,465 cases, ^ $P < 0.001$, RP – Regular physiotherapy, OP – Occupational Physiotherapy, EP – EIPF Physiotherapy, RTW – return to work, SD – standard deviation, IQR – Interquartile range

The median (interquartile range) of days of incapacity to work for claimants, sorted by physiotherapy treatment grouping, are shown in Figure 6.5. There was a significant difference between the groups ($F=378.03$, $P<0.001$) for incapacity days.

Figure 6.5 Incapacity days by physiotherapy group



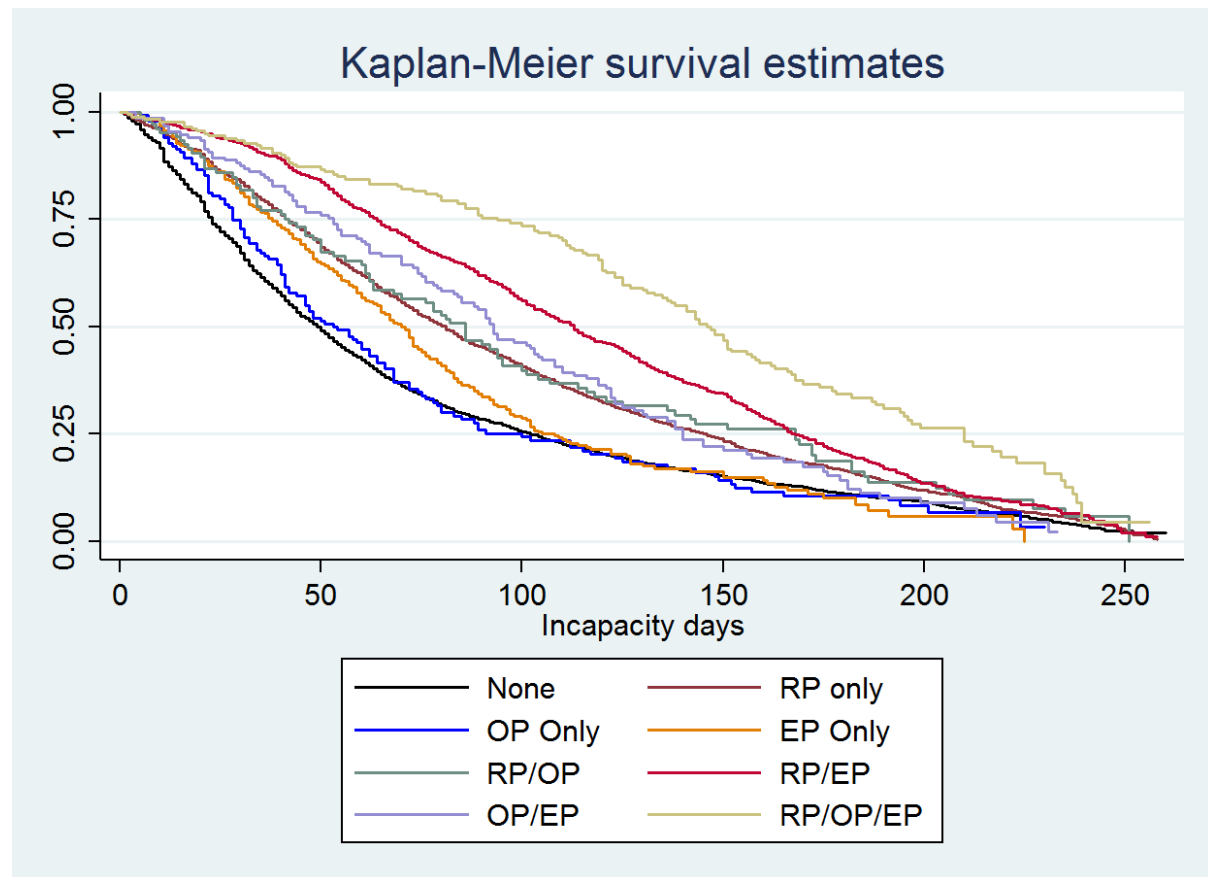
Hazard ratios describe the likelihood of RTW rate relative to regular physiotherapy. The higher the hazard ratio, the more likely the claimant is to RTW. Hazard ratios for RTW (Table 6.11) ranged from 1.70 (95%CI 1.63 to 1.79) for no physiotherapy to 0.59 (95%CI 0.50 to 0.70) for all three physiotherapy types combined. Both OP and EP

physiotherapy (alone) were associated with higher hazard ratios than regular physiotherapy (RP) alone although neither difference was significant. Combination treatment that included OP/EP/RP, and the combination of RP/EP both performed significantly worse than RP alone. Survival estimates (probability of RTW against time) were also plotted for each group and are presented in Figure 6.6 below. The Kaplan-Meier curve estimates indicate that the probability of RTW is better when seeing and OP or EP alone than the RP group or combinations

Table 6.11 Cox regression outcomes for incapacity days

	Hazard Ratio	95% Confidence interval	P value
Physiotherapy Group			
- RP only	1.0 (Reference)		
- None	1.70	1.63 to 1.79	<0.001
- OP only	1.32	1.11 to 1.59	0.002
- EP only	1.27	1.13 to 1.43	<0.001
- RP/OP	1.01	0.82 to 1.24	0.932
- RP/EP	0.78	0.72 to 0.84	<0.001
- OP/EP	1.00	0.83 to 1.19	0.957
- RP/OP/EP	0.59	0.50 to 0.70	<0.001
Sex			
- male	1.0 (Reference)		
- female	0.86	0.82 to 0.91	<0.001
Injury age	0.99	0.99 to 0.99	<0.001
Injury type			
- fracture	1.0 (Reference)		
- musculoskeletal	0.88	0.82 to 0.93	<0.001
- back/neck pain/strain	0.81	0.75 to 0.86	<0.001
- other trauma	1.41	1.31 to 1.51	<0.001
- mental health	0.31	0.28 to 0.34	<0.001
- other diseases	0.95	0.86 to 1.04	0.259
Occupation type			
- managers	1.0 (Reference)		
- professionals	1.26	1.15 to 1.40	<0.001
- technical & trade	0.95	0.86 to 1.04	0.236
- community services	1.12	1.02 to 1.23	0.014
- clerical & admin	1.08	0.95 to 1.23	0.262
- sales	1.03	0.90 to 1.16	0.692
- machinery operators	0.91	0.83 to 1.00	0.060
- labourers	0.91	0.83 to 0.99	0.031
Total pre-injury wage	0.99	1.00 to 1.00	0.001
Socioeconomic score	1.00	0.99 to 0.99	<0.001
Total hospital amount	0.99	0.99 to 0.99	<0.001
Total legal amount	0.99	0.99 to 0.99	0.022

Figure 6.6 Kaplan-Meier curves for survival estimates for RTW across all groups.



Figures 6.7, 6.8 and 6.9 show the survival estimates for RTW for claimants treated with an injury date from 2010 to 2012. Estimates indicate that OP practitioners performed worse in getting injured claimants back to work in 2010, but this had improved in 2011. The survival curve presented for 2012 indicates that the change in RTW observed in 2011 appears to be sustained when claimants are treated by OPs only. The adjusted model hazard ratios for 2010 and 2011 (Table 6.12) also demonstrated a similar outcome for the OP practitioners where their RTW event rates were poorer for 2010 (HR: 0.47 95% CI: 0.21 to 1.04, $P=0.062$) but better in 2011 (HR: 1.14 95% CI: 0.99 to 1.30, $P=0.060$) when compared to RP.

Table 6.12 Cox regression outcomes for incapacity days for RP and OP practitioners for claimants with and injury date of 2010 or 2011

	2010			2011		
	Hazard Ratio	95% Confidence interval	P value	Hazard Ratio	95% Confidence interval	P value
Physiotherapy Group						
- RP only	1.0 (Reference)			1.0 (Reference)		
- None	1.97	1.90 to 2.05	<0.001	2.01	1.94 to 2.09	<0.001
- OP only	0.47	0.21 to 1.03	0.062	1.14	0.99 to 1.30	0.060
- RP/OP	0.52	0.43 to 0.65	<0.001	0.63	0.57 to 0.69	<0.001
Sex						
- male	1.0 (Reference)			1.0 (Reference)		
- female	0.76	0.73 to 0.80	<0.001	0.83	0.80 to 0.87	<0.001
Injury age	0.99	0.99 to 0.99	<0.001	0.99	0.99 to 0.99	<0.001
Injury type						
- fracture	1.0 (Reference)			1.0 (Reference)		
- musculoskeletal	0.79	0.75 to 0.84	<0.001	0.75	0.71 to 0.80	<0.001
- back/neck pain/strain	0.82	0.77 to 0.88	<0.001	0.74	0.69 to 0.79	<0.001
- other trauma	1.31	1.23 to 1.40	<0.001	1.24	1.16 to 1.32	<0.001
- mental health	0.29	0.27 to 0.32	<0.001	0.28	0.26 to 0.31	<0.001
- other diseases	0.72	0.66 to 0.78	<0.001	0.70	0.64 to 0.76	<0.001
Occupation type						
- managers	1.0 (Reference)			1.0 (Reference)		

- professionals	1.07	0.98 to 1.16	0.158	1.16	1.06 to 1.26	0.001
- technical & trade	0.96	0.89 to 1.05	0.358	0.94	0.81 to 1.01	0.110
- community services	1.05	0.97 to 1.14	0.230	1.06	0.98 to 1.15	0.152
- clerical & admin	1.02	0.92 to 1.14	0.704	0.95	0.85 to 1.06	0.377
- sales	0.95	0.84 to 1.06	0.354	0.98	0.88 to 1.10	0.753
- machinery operators	0.87	0.80 to 0.95	0.002	0.93	0.86 to 1.01	0.104
- labourers	0.85	0.79 to 0.92	<0.001	0.87	0.81 to 0.95	0.001
Total pre-injury wage	1.00	1.00 to 1.00	0.025	1.00	0.99 to 1.00	0.053
Total hospital amount	0.99	0.99 to 0.99	<0.001	0.99	0.99 to 0.99	<0.001
Total legal amount	0.99	0.99 to 0.99	<0.001	0.99	0.99 to 0.99	<0.001

Figure 6.7 Kaplan-Meier curves for survival estimates for RTW across all groups for 2010.

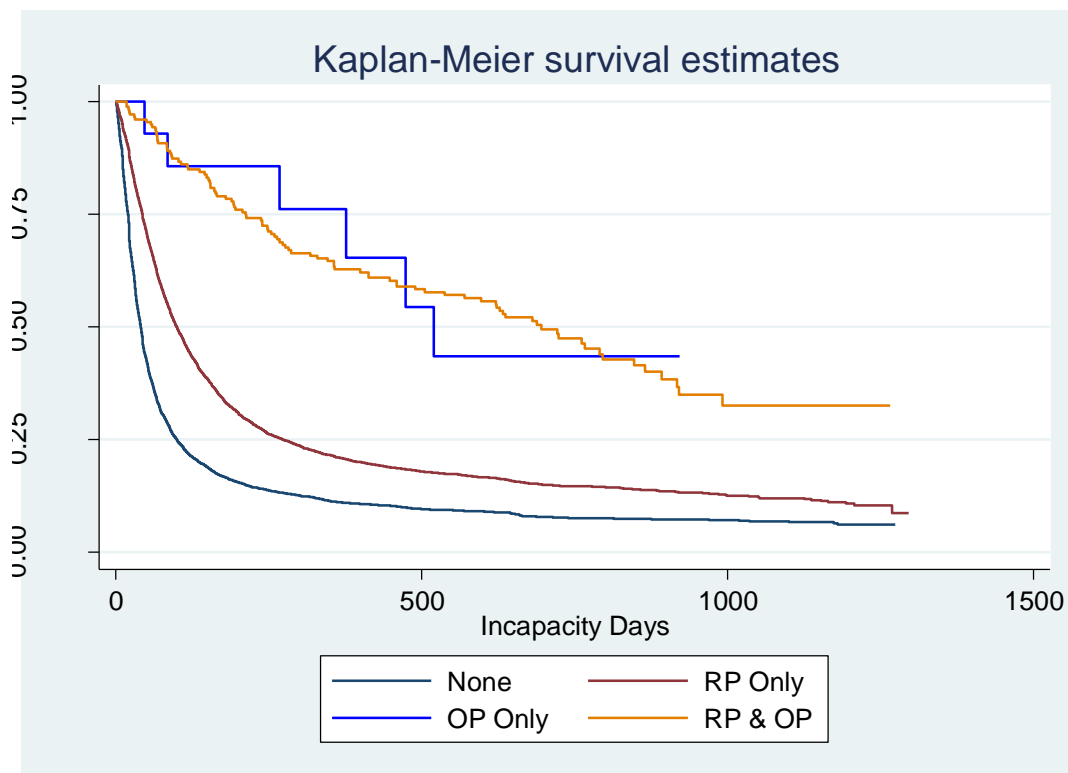


Figure 6.8 Kaplan-Meier curves for survival estimates for RTW across all groups for 2011.

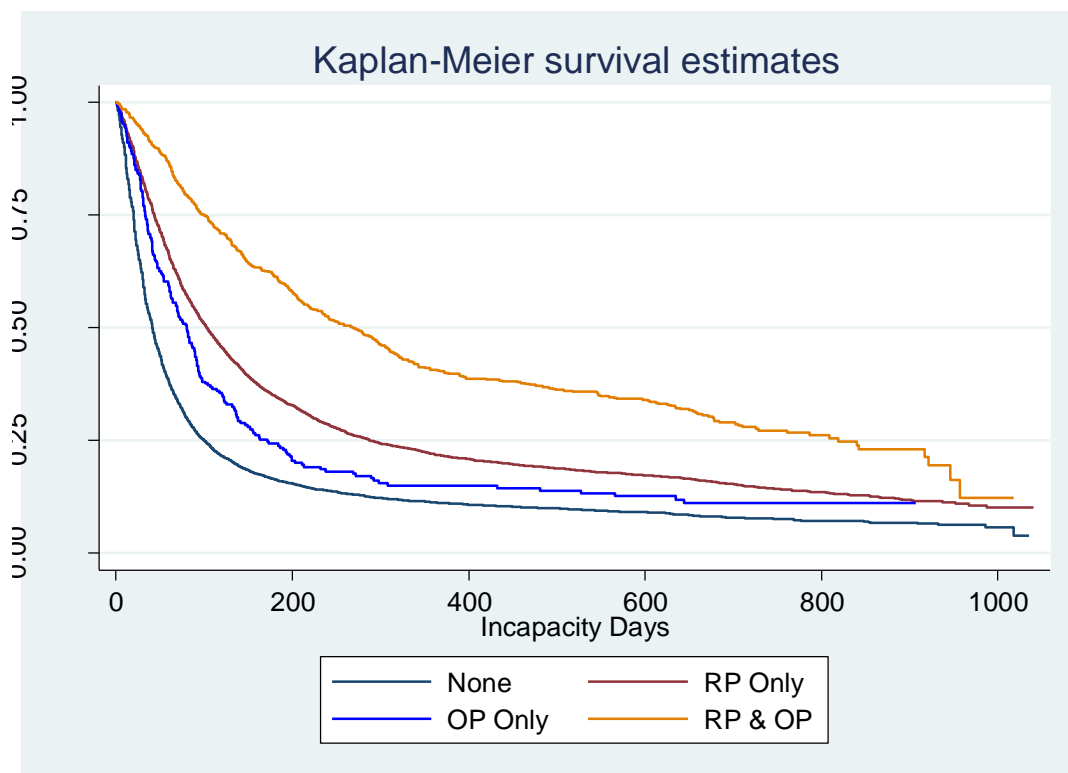
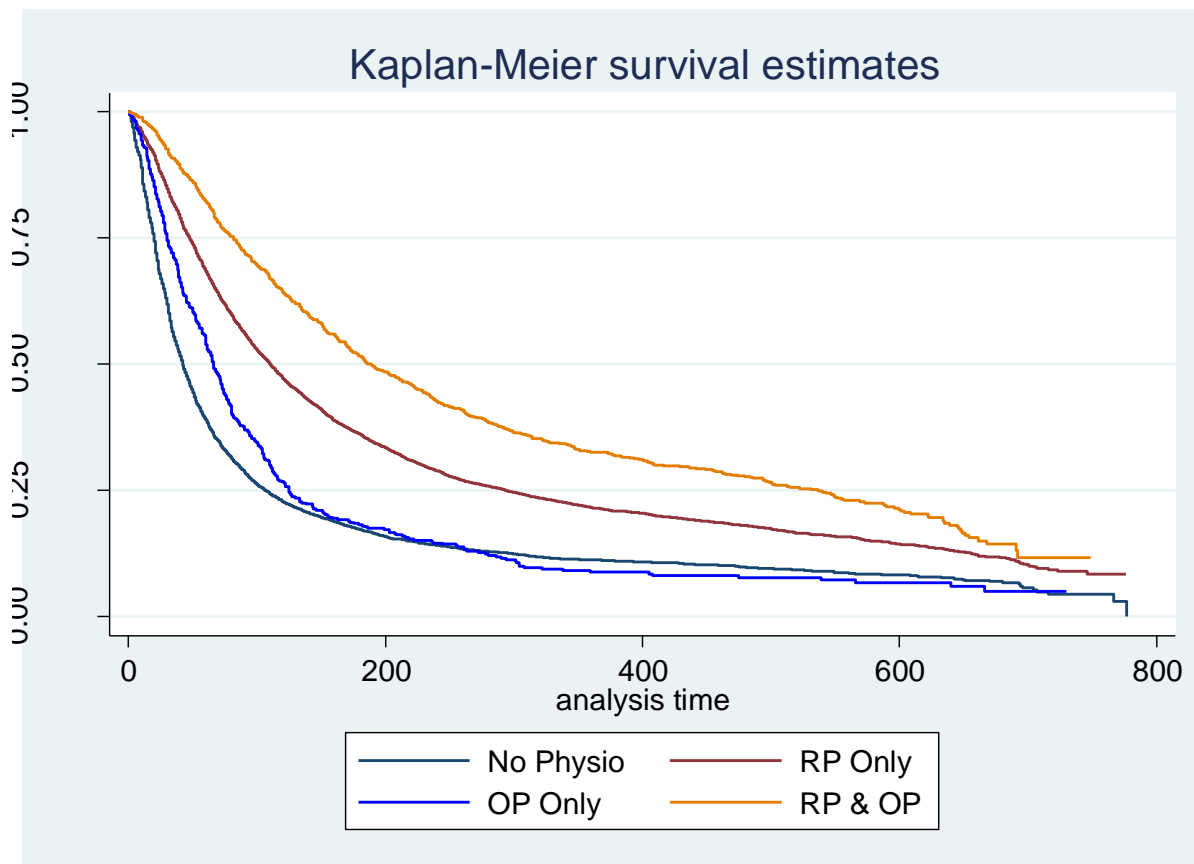


Figure 6.9 Kaplan-Meier curves for survival estimates for RTW across all groups for 2012.



6.5 Discussion of the EIPF

6.5.1 System meets the needs of the Australian Physiotherapy Association and the Health and Disabilities Services Group

The challenge for the development of the EIPF training was to deliver an education program that was evidence based, clinically relevant and met the key requirements of all stakeholders. The negotiated agreement between the APA, HDSG, TAC and WorkSafe included a change in the fee structure for the treatment of compensation clients for physiotherapists who agreed to undertake further training and agreed to adhere to the policies and procedures of the EIPF. The 2.5 hr median completion time demonstrated the program compliance with the HDSG and APA directives of a two to three hour program. The learning objectives identify the key deliverables that align with the HDSG requirements. This online education program has enabled system wide upskilling of Victorian physiotherapists on compensation processes and approaches to treatment at time convenient to the individual practitioner. The successful implementation of the online program has demonstrated a clear proof of concept that physiotherapists might be upskilled using these methods. This process should be seen as a first step in any future system wide modification of practitioner training and

behaviours. A natural progression of this program would be to re-engage the stakeholders to review the modules and consider ways to reinforce, clarify, and amplify the key messages contained within the online elements. It would be worth considering, as has been suggested by some participants, that the TAC and WorkSafe run annual updates to the program and use these opportunities to reinforce the key messages of the Clinical Framework, use of the Certificate of Capacity, changes to agency processes and provide advice and guidance in specific cases where common problems arise. Overall the implementation of this education program has been a very good public relations exercise for the Victorian compensation agencies. It has enabled connection with physiotherapists in a positive non-punitive way, encouraged good practice, and encouraged peers to review each other's practices through the shared perspective of expected best practice. It is hard to ignore the potential for these changes to amplify expected standards over time.

6.5.2 Training program that has extensive reach and acceptance

The development of a clinically relevant online education program resulted in an extended reach to Victorian physiotherapists with an easily accessible training platform. There was a high positive response from participants to the depth and breadth of information provided. Almost 1,000 physiotherapists have completed the online training with a further 130 enrolled and at various stages of completion of the modules. This number represents about a quarter of the total Victorian physiotherapy population regardless of practice location or focus. Over 90% of those completing the training have responded positively to the experience, with a number suggesting future additions to benefit their practice and enhance their capabilities for aiding RTW for compensable clients. This positive response is particularly relevant given the difficulties associated with providing services to compensable clients reported during interview (see Chapter 5). Most practitioners completed their feedback with almost no negative or unhelpful suggestions, despite the potentially onerous task to complete the education and the liberty afforded for negative feedback. This indicates that physiotherapists comprise a group of providers with the potential to be helpful and collegial in addressing key concerns raised by insurers. The online platform also provides a means of rapid communication to EIPF registered practitioners, added scope for future targeted training programs or messages and a method for updating practice information relevant to the changing policies, procedures and fee structures associated with the EIPF program.

6.5.3 Self-assessed improvements in understanding

The primary aim of the EIPF online education was to transition Victorian physiotherapists to the EIPF program, improve their understanding and application of the Clinical Framework, and provide education and examples regarding appropriate use and application of the Certificate of Capacity as it applies to injured TAC and WorkSafe clients. Physiotherapists who participated in the online education were

asked to rate their confidence across four domains before and after program completion as a surrogate learning outcome. These domains included their confidence in understanding the Clinical Framework, ability to adhere to the EIPF policy, understanding the relevant TAC and WorkSafe policies and procedures and ability to correctly complete a certificate of capacity for an injured client. Significant improvements were reported across all four domains with over 90% of completing physiotherapists reporting they were quite or very confident with the Clinical Framework, adherence to the EIPF policy and correctly certifying capacity. While only 88% of practitioners reported self-perceived confidence with relevant TAC and WorkSafe policies and procedures, this represented an improvement of over 60% from pre-education levels. These outcomes, in combination with the positive free text responses by those completing the training, indicate successful implementation of the program.

6.5.4 Improvements in RTW outcomes

Data from the CRD was interrogated to provide an indication of whether the education program was associated with a demonstrable effect on the practitioners' treatment behaviours in the facilitation of early return to work. From the data presented in this report, there is insufficient post implementation data to definitively identify real differences practices between EPs and regular physiotherapists. OPs transitioned to the EIPF program on the 1st of July, with gradual uptake by regular physiotherapists up to December 31 2014 which marks the limit of available data on service delivery. Two months after the education program launch, about 500 practitioners had completed the program. This is about half of the current number of completions. The late uptake of practitioners, combined with the delay in service data being recorded in the CRD, limits the potential to determine whether differences in the practices of program completers are evident. Comparisons of pre and post data can only indicate possible associations between the education program and changing behaviours. However, preliminary results indicate similar patterns to that observed in the early phases of the OP program. Evaluation of a small cohort of practitioners and claimants demonstrated a positive influence of the OP program on patient outcomes (Pizzarri et al., 2013). CRD data indicated that while OPs may have had poorer performance metrics than their RP colleagues initially, this pattern improved over time and remains evident in the most recent 2014 data evaluation. The OP program provided guidance in expected practices based on the Clinical Framework, early RTW targets and communication with claimants and employers. The data presented in this report indicate that incapacity days for OPs were consistently fewer when compared to the RP only group. The EIPF also set a practice framework for physiotherapists to work within based on the similar principles of the OP program. The EIPF utilised an online environment to disseminate the information with greater reach to physiotherapists treating injured workers. The early review of data collected by WorkSafe indicates that when a claimant is treated by an EIPF practitioner (Figure 6.6) the trajectory of their time off work is similar to that for OPs, who have long been regarded as the most

effective sub-group of physiotherapy service providers for injured workers. However, only 376 practitioners had completed the training in the first month of implementation and a total of 609 by the end of December 2014. This limited sample of three months of service data impacts on the firm conclusions that are able to be drawn. Notwithstanding this limitation, data for EIPF practitioners appears to reduce time to RTW compared with data for RP. Across time, as EPs become more familiar with new behaviours and as peer expectations standardise, further improvement in RTW metrics might be anticipated. This improvement across time was seen in RTW times for OPs.

There were no significant differences when comparing the OP to EP only service provision. Early indications for the EIPF program are positive with similar trends in return to work for EPs when compared to OPs. Median incapacity days and the associated hazard ratios are better for both groups when compared to regular physiotherapy (although not significantly better given the available sample size). Where physiotherapy treatment was provided, incapacity days were the lowest when treatment was provided by only a single physiotherapist type. This may be indicative of short duration minor physical complaints. It is unclear whether a claimant who receives treatment from multiple types of physiotherapists (OP, EP, RP) indicates a condition associated with unusually delayed RTW or whether a single practitioner is better equipped to support a focus on RTW.

It is too soon to draw conclusions about the efficacy of the EIPF program compared to other initiatives previously implemented by the HDSG. There are a number of practitioner transition phases that need to be noted when reviewing the CRD data. The OP program was only operational for the first six months of 2014, with these practitioners grandfathered into the EIPF program from July 1st, 2014. The go-live for the EIPF online launch occurred on September 1st, 2014 limiting the amount of data collected for these practitioners, given the CRD data capture was only to the end of 2014. Finally, uptake of the EIPF training occurred in a rolling fashion rather than a maximum influx at the launch date. Each of these factors limit the quality and conclusions regarding the effect of the program on service provision.

6.5.5 The path forward

These reservations notwithstanding, early indications are that the EIPF program is associated with positive provider behaviours that align with those previously seen in OPs. Further data analysis is recommended once claims information for 2015 has been transferred to the CRD. There are a number of steps to be considered in the improvement of practitioner confidence and patient outcomes. These include:

1. Based on feedback already received from the EP practitioners who have completed the online education program, modules on complex cases where the

RTW pathway is slow and outcomes are not ideal could be added to the program.

2. The potential effects of this online program need to be tested in a formal randomised controlled trial. There may be opportunities for such research if the program was rolled-out in other state jurisdictions.
3. Given the importance of employer support for RTW, there is scope for the development of methods that increase physiotherapist engagement in working with employers, as 25% said that they did not agree that communicating with the employer was part of their responsibility as a treatment provider. If the concept that work is rehabilitation is accepted, more work is required to migrate physiotherapists to a position of greater willingness to interact with employers.
4. To improve the knowledge of new physiotherapy graduates entering the workforce, the online program could be completed in the last phase of entry-level education or incorporated into private practice clinical placements. This would enable graduates to enter the workforce with the skills and knowledge to provide evidence based services to injured workers.
5. A pathway of ongoing refinement should be considered. Further interviews could be conducted with EP practitioners who completed this program to identify strengths, weaknesses and potential future directions for practice within the compensation field.

6.6 Conclusion

The EIPF program has been successfully rolled out to over 1,000 Victorian physiotherapists with positive responses from almost all participants. Significant improvements were reported by physiotherapists in their understanding of the Clinical Framework, their ability to adhere to the EIPF policy, understanding of the relevant TAC and WorkSafe policies and procedures and their understanding and ability to correctly complete a certificate of capacity for an injured compensable client. Improvements in claimant incapacity days and RTW appear initially comparable to those seen for physiotherapists who completed the OP program, but our confidence in this data is limited by the very narrow window available for data collection. Additional research into program effects is required. The EIPF online education program provided on the VX platform has demonstrated that a system-wide program can be implemented to improve practitioner behaviours and understanding of the compensation framework and system.

7. Discussion of key outcomes

This project gathered information from the literature, stakeholder interviews, the compensation research database, legal acts, existing training program, and insurer web sites to develop and implement an online education program to target improved performance by physiotherapists when supporting people covered by the Victorian TAC and WorkSafe compensation systems. A key finding from the work is the untapped potential for strategies that amplify the capacity of the workplace to support RTW. Such a shift in focus would redirect attention from strategies designed to influence the injured worker. Other important project outcomes are summarised below.

7.1 A new view of the return to work literature

A large number of predictive barriers and facilitators that influence RTW have been reported (>200), but only 21 of these have been repeatedly identified by 4 or more reviews. While many facilitators related to workplace factors have been identified, most controlled trials focus on interventions that target the knowledge, skills and behaviours of the injured worker, with variable results. If the results of only high quality trials are considered, results of this approach are not encouraging. There is an opportunity to rethink our approach to supporting injured workers and facilitating early RTW with a shift from targeting injured individuals to targeting societal attitudes, beliefs and behaviours, and the effect these have on the influence of workplaces on RTW.

7.2 Profile of certification of capacity and service provision by physiotherapists

Physiotherapists are important stakeholders in facilitating RTW for injured workers. Clinicians can positively influence injured workers by initiating RTW as a component of rehabilitation from injury. As evidenced by the CRD certification data, physiotherapists appear to more often certify a person with capacity for some work in comparison to a higher proportion of unfit certificates issued by GPs. Physiotherapists also appear to provide fewer occasions of service after participating in education that describes the potential benefits in facilitating timely RTW.

7.3 Stakeholders perceptions to barriers and facilitators to return to work

The perceptions of physiotherapists and case managers about key barriers, facilitators and system issues within the worker's compensation environment in Victoria reflect the literature. Individual factors such as worker attitudes and workplace factors are thought to play an important role in timely RTW following injury. Clinicians play an important role in facilitating RTW through appropriate communication, patient education and certification of true work capacity. Despite this, 25% of program completers felt that contacting employers to discuss ways to facilitate RTW was outside their scope of practice. The project team also received advice from HDSG that this was not the role of the physiotherapist, and yet it seems that, if RTW is to be embraced as a part of the rehabilitation of an injured worker, a new perspective on the role of the physiotherapist might be discussed.

Case managers link claimants, employers and health practitioners, and enable the facilitation of timely RTW and constructive stakeholder planning. Case manager education in effective communication is not standardised, signalling opportunities for education that improves case manager effectiveness.

Some system wide changes might amplify the coordination of contributions by all stakeholders in supporting RTW. These enhancements could, for example, include stakeholder education in compensation system processes, development of effective communication skills and strategies, and the use of online reporting in a centralised database to enable education, to share decisions across the health services team and reduce the influence of factors that delay RTW.

7.4 The efficacy of targeted training on physiotherapist knowledge and return to work outcomes

The implementation of the EIPF program provided Victorian physiotherapists with an opportunity to review best practice in supporting injured workers in return for an increase in remuneration associated with treatments for compensable clients. The online education program utilised information gathered from the literature, stakeholder information, the previous OP training program and current physiotherapist service data. The online modules were developed as a partnership between the TAC, WorkSafe, HDSG, Monash University and APA representatives and has been successfully rolled out to over 1,000 Victorian physiotherapists with positive responses from over 90% of those completing the training. There are a number of factors that contributed to this outcome:

1. The framework for practice emphasised a coordinated approach to RTW between physiotherapists, general practitioners, claims managers, employers and the injured worker.
2. Case examples modelled best practice in application of the Clinical Framework, certification of capacity, communication and service delivery.
3. Condensed and collated resources provided guidance in policies and procedures related to providing services to compensable clients, and were accessible from one location.
4. Targeted questions reinforced knowledge acquisition, provided relevant feedback and provided exposure to policies and procedures.
5. The online learning environment provided reach and a flexible learning space for physiotherapists. The EIPF education program could be completed through multiple interactions at personally convenient times to maximise engagement.

Early indicators are that treatment by an EP was associated with positive effects on claimant incapacity days compared to treatment by regular physiotherapists. Analysis should be repeated when 12 months of data are available.

The EIPF online training program provided on the VX platform has demonstrated that a system-wide program can be implemented to improve practitioner behaviours and understanding of the compensation framework and system.

7.5 Additional benefits arising from of this project

This study afforded opportunities to advance strategies that support RTW following injury:

1. Capacity building:
There has been extensive capacity building within the research team related to strategies by TAC and WorkSafe that support RTW following injury. The development of the online education program resulted in significant upskilling related to the development, production and implementation of an online resources that could be utilised in future workplace education projects.
2. Widespread dissemination of standardised education:
This program has demonstrated the potential in widespread distribution of education to primary healthcare providers. A standardised message was delivered effectively and efficiently to a large number of practitioners.
3. Consolidation of website information:

In assembling and refining resources for the education program, inconsistencies in TAC and WorkSafe websites were observed and amended by the respective information technology departments.

4. Interrogation of CRD data:

The link between education, service provision and claimant data offers an exceptional opportunity to evaluate the likely efficacy of the EIPF program. As identifiable EIPF codes are used to compensate practitioner services, changes to service number, costs and RTW pathways can be tracked across time. This will enable ongoing evaluation of in the effects of this program in reducing costs and facilitating early RTW.

8. References

Australian Physiotherapy Association. The physiotherapists' role in occupational rehabilitation. 2012. Available:

https://www.physiotherapy.asn.au/DocumentsFolder/APAWCM/Advocacy/PositionStatement_2017_Thephysiotherapist%E2%80%99s_role_occ_rehabilitation.pdf.

Accessed 20 March 2015.

Baril R, Clarke J, Friesen M, Stock S, Cole D. Management of return-to-work programs for workers with musculoskeletal disorders: a qualitative study in three Canadian provinces. *Soc Sc Med*. 2003; 57: 2101-2114.

Berecki-Gisolf J, Collie A, McClure R. Determinants of Physical Therapy Use by Compensated Workers with Musculoskeletal Disorders. *J Occup Rehabil*. 2013; 23: 63-73.

Cameron P, Gabbe B. The effect of compensation claims on outcomes after injury. *Injury*. 2009; 40: 905-906.

Cohen D, Marfell N, Webb K, Robling M, Aylward M. Managing long-term worklessness in primary care: a focus group study. *Occup Med (Lond)*. 2010; 60: 121-126.

Collie A, Ruseckaite R, Brijnath B, Kosny AA, Mazza D. Sickness certification of workers compensation claimants by general practitioners in Victoria, 2003–2010. *Med J Aust*. 2013; 199: 480-483.

Higgins JPT, Green S (editors). *Cochrane Handbook for Systematic Reviews of Interventions* Version 5.1.0 [updated March 2011]. The Cochrane Collaboration, 2011. Available from www.cochrane-handbook.org.

Hussey S, Hoddinott P, Wilson P, Dowell J, Barbour R. Sickness certification system in the United Kingdom: qualitative study of views of general practitioners in Scotland. *BMJ*. 2004; 328: 88-92.

Kemmis S., McTaggart R., Nixon R. *The action research planner: doing critical participatory action research*. 2014 Springer Singapore. ISBN 978-981-4560-67-2 (eBook)

Kosny A, Franche R-L, Pole J, Krause N, Côté P, et al. Early Healthcare Provider Communication with Patients and Their Workplace Following a Lost-time Claim for an Occupational Musculoskeletal Injury. *J Occup Rehabil*. 2006; 16: 27-39.

Kosny A, MacEachen E, Ferrier S, Chambers L. The Role of Health Care Providers in Long Term and Complicated Workers' Compensation Claims. *J Occup Rehabil.* 2011; 21: 582-590.

Krause N, Frank JW, Dasinger LK, Sullivan TJ, Sinclair SJ. Determinants of duration of disability and return-to-work after work-related injury and illness: Challenges for future research. *Am J Ind Med.* 2001; 40: 464-484.

Martin, P. J., Harvey, J. T., Culvenor, J. F., Payne, W. R. Effect of a nurse back injury prevention intervention on the rate of injury compensation claims. *J Safety Res.* 2009; 40(1): 13-19.

Mazza D, Collie A, Brijnath B, Kosny A, Ruseckaite R, et al. FIT to Work: General Practitioners facilitating injured workers return to work. Institute for Safety, Compensation and Recovery Research 2013.

Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). *Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement.* *PLoS Med* 6(6): e1000097. doi:10.1371/journal.pmed1000097

National Occupational Health and Safety Commission. Type of Occurrence Classification System. 3rd ed. Canberra: Safe Work Australia, 2004

Physiotherapy Board of Australia. Registration data table - March 2015. 2015. Available:
<http://www.physiotherapyboard.gov.au/documents/default.aspx?record=WD15%2f16968&dbid=AP&checksum=2oK9kqH4ac%2finTt06jRn%2fg%3d%3d>. Accessed 25 May 2015.

Pizzari T, Davidson M. Health Outcomes can be Improved by Implementing an Occupational Physiotherapy Provider Programme. *Physiother Res Int.* 2013; 18: 47-54.

Return to Work Matter Team. Return to work rates Australia and New Zealand 2006-06 to 2013-14. 2014. Available: <http://www.rtwmatters.org/handbook/rtw-survey-2014/>. Accessed 15 April 2015.

Ritchie J, Lewis J, Elam G, Tennant R, Rahim N. Designing and selecting samples. In: Ritchie J, Lewis J, McNaughton Nicholls C, Ormston R, eds. *Qualitative Research Practice. A guide for social science students and researchers.* 2nd ed. London: Sage Publications Ltd. 2014; pp. 111-145.

Ruseckaite R, Gabbe B, Vogel AP, Collie A. Health care utilisation following hospitalisation for transport-related injury. *Injury.* 2012; 43: 1600-1605.

Spencer L, Ritchie J, O'Connor W, Morrell G, Ormston R. Analysis in Practice. In: Ritchie J, Lewis J, McNaughton Nicholls C, Ormston R, eds. Qualitative Research Practice. A guide for social science students and researchers. London: Sage Publications Ltd. 2014a; pp. 295-346.

Spencer L, Ritchie J, Ormston R, O'Connor W, Barnard M. Analysis: Principles and Processes. In: Ritchie J, Lewis J, McNaughton Nicholls C, Ormston R, eds. Qualitative Research Practice. A guide for social science students and researchers. London: Sage Publications Ltd. 2014b; pp. 269-294.

The Australasian Faculty of Occupational & Environmental Medicine (AFOEM), The Royal Australasian College of Physicians (RACP). Realising the health benefits of work. A position statement. 2011

Transport Accident Commission, WorkSafe Victoria. Clinical Framework: For the delivery of health services. 2012. Available:

http://www.worksafe.vic.gov.au/_data/assets/pdf_file/0006/3885/clinical-framework.pdf. Accessed 20 March 2015.

Verhagen AP, de Vet HC, de Bie RA, Kessels AG, Boers M, Bouter LM, Knipschild PG. The Delphi list: a criteria list for quality assessment of randomized clinical trials for conducting systematic reviews developed by Delphi consensus. J Clin Epidemiol. 1998; 51(12):1235-41.

Waddell G, Burton AK. Is work good for your health and well-being? London: TSO, Department for Work and Pensions 2006.

WorkCover SA. Return to Work. WorkCover SA. 2015. Available: <https://www.workcover.com/health-provider/return-to-work?AspxAutoDetectCookieSupport=1> Accessed 20 March 2015.

WorkSafe Victoria. Return to Work. WorkSafe Victoria. 2015. Available: <http://www.worksafe.vic.gov.au/return-to-work> Accessed 20 March 2015.

Appendix Chapter Three: Literature Review

Appendix 3.1 Systematic reviews reporting the barriers and facilitators to RTW included in the data extraction for Stage 1

The list of references used in stage one of the review are itemised below [1-61].

1. Allebeck P, Mastekaasa A. Chapter 5. Risk factors for sick leave - general studies. *Scand J Public Health Suppl.* 2004; 32: 49-108.
2. Bakker RH, Bronsema J, Brouwer S, Dijkstra GJ, Haselager JJG, et al. Disability insurance: can underwriting criteria for the self-employed be based on predictors used for disability amongst employees? *J Insur Med.* 2006; 38: 259-270.
3. Blank L, Peters J, Pickvance S, Wilford J, Macdonald E. A systematic review of the factors which predict return to work for people suffering episodes of poor mental health. *J Occup Rehabil.* 2008; 18: 27-34.
4. Briand C, Durand MJ, St-Arnaud L, Corbiere M. How well do return-to-work interventions for musculoskeletal conditions address the multicausality of work disability? *J Occup Rehabil.* 2008; 18: 207-217.
5. Burger H, Marincek C. Return to work after lower limb amputation. *Disabil Rehabil.* 2007; 29: 1323-1329.
6. Clay FJ, Newstead SV, McClure RJ. A systematic review of early prognostic factors for return to work following acute orthopaedic trauma. *Injury.* 2010; 41: 787-803.
7. Clayton S, Bamba C, Gosling R, Povall S, Misso K, et al. Assembling the evidence jigsaw: insights from a systematic review of UK studies of individual-focused return to work initiatives for disabled and long-term ill people. *BMC Public Health.* 2011; 11: 170.
8. Cole DC, Hudak PL. Prognosis of nonspecific work-related musculoskeletal disorders of the neck and upper extremity. *Am J Ind Med.* 1996; 29: 657-668.
9. Cote D. Intercultural communication in health care: challenges and solutions in work rehabilitation practices and training: a comprehensive review. *Disabil Rehabil.* 2013; 35: 153-163.
10. Cote D, Coutu MF. A critical review of gender issues in understanding prolonged disability related to musculoskeletal pain: how are they relevant to rehabilitation? *Disabil Rehabil.* 2010; 32: 87-102.
11. Crisp R. Depression and occupational disability in five diagnostic groups: a review of recent research. *Disabil Rehabil.* 2007; 29: 267-279.
12. Crook J, Milner R, Schultz IZ, Stringer B. Determinants of Occupational Disability Following a Low Back Injury: A Critical Review of the Literature. *J Occup Rehabil.* 2002; 12: 277-295.
13. Darr W, Johns G. Work strain, health, and absenteeism: a meta-analysis. *J Occup Health Psychol.* 2008; 13: 293-318.
14. Desiron HA, de Rijk A, Van Hoof E, Donceel P. Occupational therapy and return to work: a systematic literature review. *BMC Public Health.* 2011; 11: 615.
15. Duijts SF, Kant I, Swaen GM, van den Brandt PA, Zeegers MP. A meta-analysis of observational studies identifies predictors of sickness absence. *J Clin Epidemiol.* 2007; 60: 1105-1115.
16. Elbers NA, Hulst L, Cuijpers P, Akkermans AJ, Bruinvels DJ. Do compensation processes impair mental health? A meta-analysis. *Injury.* 2013; 44: 674-683.

17. Fadyl J, McPherson K. Return to work after injury: a review of evidence regarding expectations and injury perceptions, and their influence on outcome. *J Occup Rehabil.* 2008; 18: 362-374.
18. Fadyl JK, McPherson KM, Schluter PJ, Turner-Stokes L. Factors contributing to work-ability for injured workers: literature review and comparison with available measures. *Disabil Rehabil.* 2010; 32: 1173-1183.
19. Franche RL, Murray EJ, Ostry A, Ratner PA, Wagner SL, et al. Work disability prevention in rural healthcare workers: a focus on healthcare workers. *Rural Remote Health.* 2010; 10: 1502.
20. Franche R-L, Cullen K, Clarke J, Irvin E, Sinclair S, et al. Workplace-Based Return-to-Work Interventions: A Systematic Review of the Quantitative Literature. *J Occup Rehabil.* 2005; 15: 607-631.
21. Gensby U, Labriola M, Irvin E, Amick B, Lund T. A Classification of Components of Workplace Disability Management Programs: Results from a Systematic Review. *J Occup Rehabil.* 2014; 24: 220-241.
22. Hansson T, Jensen I. Swedish Council on Technology Assessment in Health Care (SBU). Chapter 6. Sickness absence due to back and neck disorders. *Scand J Public Health Suppl.* 2004; 63: 109-151.
23. Hartvigsen J, Lings S, Leboeuf-Yde C, Bakketeig L. Psychosocial factors at work in relation to low back pain and consequences of low back pain; a systematic, critical review of prospective cohort studies. *Occup Environ Med.* 2004; 61: e2.
24. Hensing G, Wahlström R. Chapter 7. Sickness absence and psychiatric disorders. *Scand J Public Health Suppl.* 2004; 32: 152-180.
25. Hlobil H, Staal JB, Spoelstra M, Ariens GA, Smid T, et al. Effectiveness of a return-to-work intervention for subacute low-back pain. *Scand J Work Environ Health.* 2005; 31: 249-257.
26. Hoefsmit N, Houkes I, Nijhuis FJ. Intervention characteristics that facilitate return to work after sickness absence: a systematic literature review. *J Occup Rehabil.* 2012; 22: 462-477.
27. Hou WH, Chi CC, Lo HL, Kuo KN, Chuang HY. Vocational rehabilitation for enhancing return-to-work in workers with traumatic upper limb injuries. *Cochrane Database Syst Rev.* 2013; 10: CD010002.
28. Iles RA, Davidson M, Taylor NF. Psychosocial predictors of failure to return to work in non-chronic non-specific low back pain: a systematic review. *Occup Environ Med.* 2008; 65: 507-517.
29. Karjalainen K, Malmivaara A, van Tulder M, Roine R, Jauhiainen M, et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. *Cochrane Database Syst Rev.* 2003: CD002193.
30. Krause N, Dasinger L, Neuhauser F. Modified work and return to work: a review of the literature. *J Occup Rehabil.* 1998; 8: 113-139.
31. Kuijer W, Groothoff JW, Brouwer S, Geertzen JH, Dijkstra PU. Prediction of sickness absence in patients with chronic low back pain: a systematic review. *J Occup Rehabil.* 2006; 16: 439-467.
32. Kuoppala J, Lamminpää A. Rehabilitation and work ability: a systematic literature review. *J Rehabil Med.* 2008; 40: 796-804.
33. Kuoppala J, Lamminpää A, Liira J, Vainio H. Leadership, job well-being, and health effects-a systematic review and a meta-analysis. *J Occup Environ Med.* 2008; 50: 904-915.
34. Lloyd C, Waghorn G, McHugh C. Musculoskeletal disorders and comorbid depression: implications for practice. *Aust Occup Ther J.* 2008; 55: 23-29.

35. Lysaght R, Donnelly C, Luong D. Best practices in the rehabilitation of acute musculoskeletal disorders in workers with injuries: an integrative review and analysis of evolving trends. *Work*. 2010; 35: 319-333.
36. MacEachen E, Clarke J, Franche RL, Irvin E. Systematic review of the qualitative literature on return to work after injury. *Scand J Work Environ Health*. 2006; 32: 257-269.
37. Meijer EM, Sluiter JK, Frings-Dresen MH. Evaluation of effective return-to-work treatment programs for sick-listed patients with non-specific musculoskeletal complaints: a systematic review. *Int Arch Occup Environ Health*. 2005; 78: 523-532.
38. Muenchberger H, Kendall E, Grimbeek P, Gee T. Clinical utility of predictors of return-to-work outcome following work-related musculoskeletal injury. *J Occup Rehabil*. 2008; 18: 190-206.
39. Norlund A, Ropponen A, Alexanderson K. Multidisciplinary interventions: review of studies of return to work after rehabilitation for low back pain. *J Rehabil Med*. 2009; 41: 115-121.
40. Poiraudau S, Rannou F, Revel M. Functional restoration programs for low back pain: a systematic review. *Ann Readapt Med Phys*. 2007; 50: 425-429, 419-424.
41. Pomaki G, Franche R-L, Murray E, Khushrushahi N, Lampinen T. Workplace-Based Work Disability Prevention Interventions for Workers with Common Mental Health Conditions: A Review of the Literature. *J Occup Rehabil*. 2012; 22: 182-195.
42. Schandelmaier S, Ebrahim S, Burkhardt SC, de Boer WE, Zumbunn T, et al. Return to work coordination programmes for work disability: A meta-analysis of randomised controlled trials. *PLoS ONE*. 2012; 7.
43. Schonstein E, Kenny DT, Keating J, Koes BW. Work conditioning, work hardening and functional restoration for workers with back and neck pain. *Cochrane Database Syst Rev*. 2003: CD001822.
44. Shaw W, Hong QN, Pransky G, Loisel P. A literature review describing the role of return-to-work coordinators in trial programs and interventions designed to prevent workplace disability. *J Occup Rehabil*. 2008; 18: 2-15.
45. Shaw WS, Pransky G, Fitzgerald TE. Early prognosis for low back disability: intervention strategies for health care providers. *Disabil Rehabil*. 2001; 23: 815-828.
46. Slebus FG, Kuijer PPF, Willems JHB, Sluiter JK, Frings-Dresen MHW. Prognostic factors for work ability in sicklisted employees with chronic diseases. *Occup Environ Med*. 2007; 64: 814-819.
47. Soderberg E, Alexanderson K. Sickness certification practices of physicians: a review of the literature. *Scand J Public Health*. 2003; 31: 460-474.
48. Soderberg E, Alexanderson K. Gatekeepers in sickness insurance: a systematic review of the literature on practices of social insurance officers. *Health Soc Care Community*. 2005; 13: 211-223.
49. Steenstra IA, Verbeek JH, Heymans MW, Bongers PM. Prognostic factors for duration of sick leave in patients sick listed with acute low back pain: a systematic review of the literature. *Occup Environ Med*. 2005; 62: 851-860.
50. Tompa E, de Oliveira C, Dolinschi R, Irvin E. A systematic review of disability management interventions with economic evaluations. *J Occup Rehabil*. 2008; 18: 16-26.
51. Truchon M, Fillion L. Biopsychosocial Determinants of Chronic Disability and Low-Back Pain: A Review. *J Occup Rehabil*. 2000; 10: 117-142.
52. Turner JA, Franklin G, Turk DC. Predictors of chronic disability in injured workers: a systematic literature synthesis. *Am J Ind Med*. 2000; 38: 707-722.

53. van den Berg TI, Elders LA, de Zwart BC, Burdorf A. The effects of work-related and individual factors on the Work Ability Index: a systematic review. *Occup Environ Med.* 2009; 66: 211-220.
54. van Oostrom SH, Driessen MT, de Vet CWH, Franche R, Schonstein E, et al. Workplace interventions for preventing work disability. *Cochrane Database Syst Rev.* 2009.
55. Vingård E, Alexanderson K, Norlund A. Chapter 9. Consequences of being on sick leave. *Scand J Public Health.* 2004; 32: 207-215.
56. Waddell G, Burton AK. Occupational health guidelines for the management of low back pain at work: evidence review. *Occup Med (Lond).* 2001; 51: 124-135.
57. Wagner S, White M, Schultz I, Murray E, Bradley SM, et al. Modifiable worker risk factors contributing to workplace absence: A stakeholder-centred best-evidence synthesis of systematic reviews. *Work.* 2013.
58. White M, Wagner S, Schultz IZ, Murray E, Bradley SM, et al. Modifiable workplace risk factors contributing to workplace absence across health conditions: A stakeholder-centered best-evidence synthesis of systematic reviews. *Work.* 2013; 45: 475-492.
59. Williams RM, Westmorland MG, Lin CA, Schmuck G, Creen M. Effectiveness of workplace rehabilitation interventions in the treatment of work-related low back pain: a systematic review. *Disabil Rehabil.* 2007; 29: 607-624.
60. Williams RM, Westmorland MG, Lin C-Y, Schmuck G, Creen M. A systematic review of workplace rehabilitation interventions for work-related low back pain. *Int J Disabil Manage Res.* 2006; 1: 21-30.
61. Zampolini M, Bernardinello M, Tesio L. RTW in back conditions. *Disabil Rehabil.* 2007; 29: 1377-1385.

Appendix 3.2 Controlled trials included for full data extraction during Stage 2

The list of references used in stage two of the review are itemised below [1-30]

1. Anema JR, Steenstra IA, Bongers PM, de Vet HCW, Knol DL, et al. Multidisciplinary Rehabilitation for Subacute Low Back Pain: Graded Activity or Workplace Intervention or Both?: A Randomized Controlled Trial. *Spine*. 2007; 32: 291-298.
2. Arnetz BB, Sjogren B, Rydehn B, Meisel R. Early Workplace Intervention for Employees With Musculoskeletal-Related Absenteeism: A Prospective Controlled Intervention Study. *J Occ Environ Med*. 2003; 45: 499-506.
3. Bendix T, Bendix A, Labriola M, Haestrup C, Ebbelohj N. Functional restoration versus outpatient physical training in chronic low back pain: a randomized comparative study. *Spine*. 2000; 25: 2494-2500.
4. Blonk RWB, Brenninkmeijer V, Lagerveld SE, Houtman ILD. Return to work: A comparison of two cognitive behavioural interventions in cases of work-related psychological complaints among the self-employed. *Work Stress*. 2006; 20: 129-144.
5. Bültmann U, Sherson D, Olsen J, Hansen CL, Lund T, et al. Coordinated and Tailored Work Rehabilitation: A Randomized Controlled Trial with Economic Evaluation Undertaken with Workers on Sick Leave Due to Musculoskeletal Disorders. *J Occup Rehabil*. 2009; 19: 81-93.
6. Fleten N, Johnsen R. Reducing sick leave by minimal postal intervention: a randomised, controlled intervention study. *Occup Environ Med*. 2006; 63: 676-682.
7. Godges JJ, Anger MA, Zimmerman G, Delitto A. Effects of education on return-to-work status for people with fear-avoidance beliefs and acute low back pain. *Phys Ther*. 2008; 88: 231-239.
8. Greenwood JG, Wolf HJ, Pearson RJ, Woon CL, Posey P, et al. Early intervention in low back disability among coal miners in West Virginia: negative findings. *J Occup Med*. 1990; 32: 1047-1052.
9. Hagen EM, Eriksen HR, Ursin H. Does early intervention with a light mobilization program reduce long-term sick leave for low back pain? *Spine*. 2000; 25: 1973-1976.
10. Hagen EM, Grasdahl A, Eriksen HR. Does early intervention with a light mobilization program reduce long-term sick leave for low back pain: A 3-year follow-up study. *Spine*. 2003; 28: 2309-2315.
11. Håland Haldorsen EM, Grasdahl AL, Skouen JS, Risa AE, Kronholm K, et al. Is there a right treatment for a particular patient group? Comparison of ordinary treatment, light multidisciplinary treatment, and extensive multidisciplinary treatment for long-term sick-listed employees with musculoskeletal pain. *Pain*. 2002; 95: 49-63.
12. Haldorsen EMH, Kronholm K, Skouen JS, Ursin H. Multimodal cognitive behavioral treatment of patients sicklisted for musculoskeletal pain: A randomized controlled study. *Scand J Rheumatol*. 1998; 27: 16-25.
13. Indahl A, Haldorsen EH, Holm S, Reikeraas O, Ursin H. Five - Year Follow - Up Study of a Controlled Clinical Trial Using Light Mobilization and an Informative Approach to Low Back Pain. *Spine*. 1998; 23: 2625-2630.
14. Indahl A, Velund L, Reikeraas O. Good Prognosis for Low Back Pain When Left Untampered: A Randomized Clinical Trial. *Spine*. 1995; 20(4): 473-477.

15. Jensen C, Jensen OK, Christiansen DH, Nielsen CV. One-year follow-up in employees sick-listed because of low back pain: Randomized clinical trial comparing multidisciplinary and brief intervention. *Spine*. 2011; 36: 1180-1189.
16. Lambeek LC, van Mechelen W, Knol DL, Loisel P, Anema JR. Randomised controlled trial of integrated care to reduce disability from chronic low back pain in working and private life. *BMJ*. 2010; 340: c1035.
17. Leclaire R, Esdaile JM, Suissa S, Rossignol M, Proulx R, et al. Back school in a first episode of compensated acute low back pain: a clinical trial to assess efficacy and prevent relapse. *Arch Phys Med Rehab*. 1996; 77: 673-679.
18. Lindström I, Öhlund C, Eek C, Wallin L, Peterson L-E, et al. The Effect of Graded Activity on Patients with Subacute Low Back Pain: A Randomized Prospective Clinical Study with an Operant-Conditioning Behavioral Approach. *Phys Ther*. 1992; 72: 279-290.
19. Loisel P, Abenhaim L, Durand P, Esdaile JM, Suissa S, et al. A population-based, randomized clinical trial on back pain management. *Spine*. 1997; 22: 2911-2918.
20. Marhold C, Linton SJ, Melin L. A cognitive-behavioral return-to-work program: effects on pain patients with a history of long-term versus short-term sick leave. *Pain*. 2001; 91: 155-163.
21. Mitchell RI, Carmen GM. The Functional Restoration Approach to the Treatment of Chronic Pain in Patients with Soft Tissue and Back Injuries. *Spine*. 1994; 19(6): 633-642.
22. Mortelmans AK, Donceel P, Lahaye D, Bulterys S. Does enhanced information exchange between social insurance physicians and occupational physicians improve patient work resumption? A controlled intervention study. *Occup Environ Med*. 2006; 63: 495-502.
23. Nystuen P, Hagen KB. Solution-focused intervention for sick listed employees with psychological problems or muscle skeletal pain: a randomised controlled trial [ISRCTN39140363]. *BMC Pub Health*. 2006; 6: 69-69.
24. Rossignol M, Abenhaim L, Seguin P, Neveu A, Collet J-P, et al. Coordination of Primary Health Care for Back Pain: A Randomized Controlled Trial. *Spine*. 2000; 25: 251.
25. Rozenberg S, Delval C, Rezvani Y, Olivieri-Apicella N, Kuntz JL, et al. Bed rest or normal activity for patients with acute low back pain: a randomized controlled trial. *Spine*. 2002; 27: 1487-1493.
26. Scheel IB, Hagen KB, Herrin J, Carling C, Oxman AD. Blind faith? The effects of promoting active sick leave for back pain patients: a cluster-randomized controlled trial. *Spine*. 2002; 27: 2734-2740.
27. Schultz IZ, Crook J, Berkowitz J, Milner R, Meloche GR, et al. A prospective study of the effectiveness of early intervention with high-risk back-injured workers--a pilot study. *J Occup Rehabil*. 2008; 18: 140-151.
28. Schultz IZ, Crook JM, Berkowitz J, Meloche GR, Prkachin KM, et al. Early intervention with compensated lower back-injured workers at risk for work disability: Fixed versus flexible approach. *Psychol Inj Law*. 2013; 6: 258-276.
29. van den Hout JH, Vlaeyen JW, Heuts PH, Zijlema JH, Wijnen JA. Secondary prevention of work-related disability in nonspecific low back pain: does problem-solving therapy help? A randomized clinical trial. *Clin J Pain*. 2003; 19: 87-96.
30. Verbeek JH, van der Weide WE, van Dijk FJ. Early Occupational Health Management of Patients with Back Pain: A Randomized Controlled Trial. *Spine*. 2002; 27: 1844-1850.

Appendix 3.3 Intervention overview for included studies in Stage 2.

Table Appendix 3.3 Intervention summary for included studies in the multidisciplinary vs usual care, workplace interventions vs usual care, education vs usual care and any intervention vs usual care meta-analyses for RTW and days absent/sick days outcomes. Studies are listed in quality score order.

Study (first author, date – QA score)	Meta-analysis subgroup evaluation	Intervention	Comparison
Jensen 2011 – 8 P >.05	Analysis number: 1.1.2, 4.1.2	Clinical examination/ advice from rehabilitation doctor and physiotherapist (PT). Case manager coordinating multidisciplinary team	Brief clinical examination/ advice from rehabilitation doctor and PT.
Scheel 2002 – 8 P <.05 Favours intervention	Analysis number: 1.2.2, 3.2.2, 4.2.2	Proactive intervention addressed barriers to RTW (modified duties) on full salary, through direct contact and motivating telephone calls; continuing education workshop for GPs and a trained resource person to facilitate use of RTW	Control
Verbeek 2002 – 8 P >.05	Analysis number: 4.1.1, 4.1.2, 4.2.2	Early management by occupational physicians. Physicians educated on the use of low back pain guidelines, advice on exercise and activity, regular contact with worker and GP or PT	Usual medical care and management by the worker's supervisor during the first 3 months of sick leave
Rossignol 2000 – 8 P >.05	Analysis number: 1.1.1	Coordination of health care services with primary care provider who was encouraged to implement clinical practice guidelines	Usual case management
Bültmann 2009 – 7 P =.05	Analysis number: 1.2.1, 1.2.2, 2.2.1, 2.2.2, 4.2.1, 4.2.2	Coordinated and tailored work rehabilitation (CTWR): coordinated, tailored and action-oriented work rehabilitation plan collaboratively developed by an interdisciplinary team using a feedback-guided approach. Involvement of workplace and major stakeholders are key elements.	Conventional case management (CCM)
Anema 2007 – 7 P >.05	Analysis number: 1.1.2, 2.1.2, 4.1.2	Workplace intervention; those not RTW by 8 weeks randomised to graded activity: 1 hr exercise, 2 days/week, max 26 sessions based on operant-conditioning principles; PT coach/supervisor, hands-off approach.	Usual care according to the Dutch occupational LBP guideline

Indahl 1998 – 7 P <.05	Analysis number: 3.1.3, 4.1.3	Examinations performed including psychological and health factor assessment, usual clinical examination, physical capacity evaluation and spinal imaging performed. The participant was then informed of the test results. Advice about remaining active and education about pain and recovery provided. Message reinforced at 3 and 12 months	Usual care without the examination
Blonk 2006 – 6 P <.01 Favours combined compared to CBT and usual care	Analysis number: 2.2.2, 3.2.2, 4.2.2	Group 1. Cognitive behavioural therapy (CBT), extensive program delivered by psychotherapists. Eleven, 2 weekly sessions of 45 mins. Group 2. Combined intervention delivered by labour experts comprising 5-6 sessions of 1hr, twice a week. Sessions included brief CBT-based stress management, self-help books, identifying work process and demands, set RTW priorities and labour saving suggestions	Control consisting of 2 brief GP sessions
Nystuen 2006 – 6 P >.05	Analysis number: 2.1.1, 3.1.1, 4.1.1	Solution-focused brief therapy delivered by psychologists acknowledging and utilizing the experiences and resources of the client either individually or in a group depending on individual preferences; focus on work situation; 8 weekly sessions each 3 - 4 hours; main focus of the program are coping strategies, support between participants and solutions and goals for future.	Usual treatment including psychotherapy and others.
Hagen 2003 – 6 P < .05 Favours intervention	Analysis number: 1.1.3, 1.2.3, 3.1.3, 3.2.3, 4.1.3, 4.2.3	Spine clinic visit Interviewed/examined by physician & PT X-rays shown/ explained Light mobilisation program: advice to keep active & RTW; PT exercise & stretches	Not examined at spine clinic At least one primary care visit
Haldorsen 1998 – 6 P >.05	Analysis number: 1.1.2, 3.1.2, 4.1.2	Multidisciplinary rehabilitation program (6hr sessions, 5days p/w,4wks) included PT, CBT, education and workplace interventions	Usual care
Leclaire 1996 – 6 P >.05	Analysis number: 3.1.2, 4.1.2	Standard back care, daily PT with back education of 3 x 90min sessions with a maximum of 4 participants. Education included aspects of low back pain, including causes and resultant pain, role of exercise to improve patient status and strategies to prevent recurrent episodes. Aim to improve self-care and promote activity.	Usual back care including rest, analgesics, non-steroidal anti-inflammatory drugs as required and daily PT

Godges 2008 – 5 P >.05	Analysis number: 3.1.1, 3.2.1, 4.1.1, 4.2.1	Physical examination, PT treatment, educational booklet plus counselling and discussion about the book and pain management strategies	Usual care incorporating physical examination, PT treatment and generic back pain pamphlet
Marhold 2001 – 5 P<.05 for Group 2 only	Analysis number: 3.2.1, 4.2.1	Group 1. A CBT RTW focused program for patients on sick leave >12 months comprising six sessions on different pain coping skills and six sessions on RTW strategies and application of the pain coping skills to occupational risk factors. 12 weekly sessions (2.5hrs each) and 2 booster sessions (one and three months after treatment) provided by a clinical psychologist trained in CBT PLUS treatment as usual Group 2. Same intervention as Group 1, but for patients on sick leave between 6 and 12 months	Usual care
Hagen 2000 – 5 P < .05 Favours intervention	Analysis number: 1.1.1, 1.1.2, 1.2.2, 3.1.1, 3.1.2, 3.2.2, 4.1.1, 4.1.2, 4.2.2	Spine clinic visit Interviewed/examined by physician & PT X-rays shown/ explained Light mobilisation program: advice to keep active & RTW; PT exercise & stretches	Not examined at spine clinic At least one primary care visit
Mitchell 1994 – 5 P >.05	Analysis number: 1.1.2, 4.1.2	Physical and function rehabilitation program 7hrs/day, 5 days/week, for 8 weeks, CBT, education, counselling, multidisciplinary rehabilitation	Physician determined treatment
Lindström – 5 1992 P <.05 Favours intervention	Analysis number: 1.1.2, 1.2.2, 2.1.2, 2.2.2, 4.1.2, 4.2.2	Evaluation interview, graded activity, functional capacity testing, workplace assessment, education, graded activity, graded exercise, behavioural therapy	Rest, analgesics, possibly physical therapy, and could seek their own care
Schultz 2008 – 4 P >.05	Analysis number: 1.1.1, 2.1.1, 4.1.1	Integrated, interdisciplinary and multimodal early intervention. Communication between worker, health professional, specialists, unions, create positive expectations of RTW, support workers in RTW. Case management team at the intervention site trained in evidence-focused clinical and occupational guidelines, and “soft” clinical skills including problem-solving, motivational interviewing and negotiation; education, reassurance, encouragement to stay active, and back pain management advice	Usual case management

Mortelmans 2006 – 4 P >.05	Analysis number: 4.1.2	Enhanced information exchange between physicians; regular meetings to (1) encourage contacts between social insurance and occupational physicians; (2) optimise mutual perception; (3) exchange experiences/problems related to sickness absence; (4) clarify roles and possibilities for increasing work resumption	Communication form to researchers. No circular individual information exchange procedure initiated
Indahl 1995 – 4 P < 0.001 Favours intervention	Analysis number: 3.1.1, 4.1.1	Examinations performed including psychological and health factor assessment, usual clinical examination, physical capacity evaluation and spinal imaging performed. The participant was then informed of the test results. Advice about remaining active and education about pain and recovery provided. Message reinforced at 3 and 12 months	Usual care without the examination
Greenwood 1990 – 3 P <.05 Favours intervention	Analysis number: 1.2.2, 4.2.3	If back at work, advice only; if not back at work offered counselling and guidance, coordinated primary care, medical specialty and physical therapy services, & psychological services if necessary	Usual care ... did not include early rehabilitation due to the time required to process a formal claim
Arnetz 2003 – 2 P<.05 Favours intervention	Analysis number: 1.2.1, 1.2.2, 4.2.1, 4.2.2	Group 1. Interview with CM and OT/ergonomist: assessed personal factors, workload, general health. Group 2. Workplace evaluation, with vocational training intervention Group 3. Employer rehabilitation evaluation The workplace was assessed from an ergonomic point of view, physical and psychosocial stressors were assessed by the ergonomist while the employee performed his/her regular work tasks. Also given a person training program	Study information only. No interview, worksite assessment or improvement
Study (first author, date – QA score)	Reason for meta- analysis exclusion	Intervention	Comparison
Lambeek 2010 – 7 P =.003	Suitable data not available for meta-analysis	Integrated care: workplace intervention based on participatory ergonomics, involving supervisor, graded activity programme based on cognitive behavioural principles	Usual Care

Haldorsen 2002 – 6 Group 1: P<.04 Group 2: P=.05	Suitable data not available for meta-analysis	Group 1. Extensive multidisciplinary rehabilitation program (4 weeks, 6hr sessions, 5 days per week) including CBT, physical treatment, education and workplace interventions with follow-up up to 1yr. Group 2. Light multidisciplinary treatments with follow-ups. 1 hr lecture on exercise, lifestyle and fear-avoidance advice. Individual information & feedback by multidisciplinary team +/- external physiotherapist treatment and follow-up up to 1yr	Usual Care
Loisel 1997 – 6 Groups 1 & 2: P >.05 Group3: P=.01	Suitable data not available for meta-analysis	Group 1. Occupational intervention Group 2. Clinical intervention Group 3. Occupational and clinical intervention	Usual Care
Fleten 2006 – 5 P >.05	Suitable data not available for meta-analysis	Minimal general RTW information	None – usual care
Rozenberg 2002 – 7 P <.0001 Favours intervention	Usual care not used for the comparison group	Advised to continue with normal activity.	Advised to take four days of bed rest.
van den Hout 2003 – 6 P >.05	Usual care not used for the comparison group	Multidisciplinary intervention with graded activity, problem solving skills therapy and group education.	Multidisciplinary intervention with group education.
Bendix 2000 – 4 P >.05	Usual care not used for the comparison group	Functional Restoration, intensive physical training, ergonomic training & behavioural support (Multidisciplinary rehabilitation) – Three week whole day program	Outpatient intensive physical training – One hour of daily physical training
Schultz 2013 – 3 P >.05	Usual care not used for the comparison group	Fixed, worker centric protocol-driven, interdisciplinary, multimodal, clinical, occupational, and case management-based early intervention compared within a workers' compensation case management setting. Used a fixed approach with	Flexible, worker centric protocol-driven, interdisciplinary, multimodal, clinical, occupational, and case management-based

		respect to protocols, number and type of intervention components and their timing, and was standardized for all workers.	early intervention compared within a workers' compensation case management setting.
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Appendix 3.4 Validation of conclusions across reviews in Stage 1

Factors reported in one review

Personal profile

ethnicity (5) and ethnic minority (11), communication and language barriers (10), family patterns (10), domestic strain (9), place of residence (1), number of children at home (12), life events (49), quality of life (55), social/behavioural skills (18), transport access (57), fibre intake (57), health risk behaviours (15), thinking/problem solving (18), psychological function (18), interpreting insurance rules (47), company sick pay (3), insurance policy terms (2), length & amount of financial incentives (7), attorney involvement (49).

Health

Self-reported health (55), prior health and sick leave (5), medication use (2,15), health service utilisation (55), somatic complaints (46), previous sick leave (22), previous hospitalisation (12), number of surgeries (6), amputation level factors (5), compassionate leave (57), no RTW (within first 505 days of claim) (3), no attempt at RTW (3), claim duration (49), musculoskeletal capacity (53), injury severity (6), walking distance/mobility issues (5), sleep difficulties (57), fatigue (49, 57), posture factors (49), clinical test outcomes (51), diagnosis (52), X-ray/MRI (56), physical examination (49), medical history (31), LBP cause (49). **Conflicts:** Overweight predicts RTW (53), BMI does not predict RTW (49).

Symptoms

Pain on standing (12), pain catastrophizing (17), long-term pain severity (51), symptom severity/duration (8).

Beliefs, attitudes and psychological state

Self-identity (9), distrust (9), religious beliefs (10), health beliefs (31), norms and values (10), social expectations (10), emotions (31), burnout (15), emotional distress (57), negative enduring psych/personality factors (57), negative health/disability perception (57), amplified health concerns (57), psychosocial risk situations (24), hysteria (49), mal-adapted coping (11) physical and psychological illness link (13), lack of motivation to RTW (57), perceived ability to work (51), injury perception on RTW (17), absenteeism tolerance (58), suicidal (55).

Work

bend/twist work position (22), vibration (49), previous job type (5), career opportunities (55), unemployment risk (3), work flexibility, variation, participation, work related life events (49), reorganizational stress (58), work unit separation (57), not full-time work

(58), poor quality leadership (58), lack of managerial involvement (58), limited work support (20), job problems (12), problems with colleagues (12), violence (20), delayed reporting (44). **Conflicts:** Company size related to RTW (52), Industry/company size not related to RTW (49), Blue collar/manual occupation related to RTW (6), Occupation not related to RTW (49).

Provider behaviours

Quality of process of care (49), certificate opinion differences between doctor and patient (47), difficulties deciding on certificate length (47), traditional biomedical education based on injury model (56), case manager uncertainty managing clients/contacts (48), case managers accept doctors recommendations rather than rely on own decision (48), longer time to treatment (58), no standard measure to inform vocational rehabilitation and target treatment (18), RTW co-ordinator skills (work assessment, clinical interviewing, problem solving, workplace mediation, knowledge of business, legal aspects, medical knowledge) (45)

Facilitators of RTW

Strategies assisting migrant/minority groups & cultural competency (10), navigation through disability management (41) continue ordinary activities of daily life (56), positive role models (57), higher job involvement (5), claims registration, RTW coordination, workplace assessment, job analysis, job replacement within organisation (21), ongoing coordination with insurance party, healthcare system and compensation case managers (21), greater than 2 years on the job (12), follow/up contact, referral to work accommodation, graded activity, modified work scheme (21), workplace low intensity psychological rehabilitation (41), exercise and worksite visit (60), vocational programs for upper limb injuries (27), workplace visit (29), light/sedentary job (46), flexible time schedule (13), elimination of risks in workplace (38), education, counselling, exercise, medical therapy and ergonomics to increase work ability (32), specific exercise for acute LBP (43), timeliness, intensity and proactive nature of rehabilitation interventions (38), time based interventions - graduated RTW (26), OT as part of multi-disciplinary treatment (14), early intervention and multidisciplinary team (26), communication, cooperation and common agreed goals between work, occupational health team, supervisors, management, primary health care provider considered important (56), contact between stakeholders (4), doctor/patient agreement (47), communication between GP and injured workers (38), mutual trust with case management (7), occupational physicians certifying shorter leave (47), less than 30 days to treatment (12), early rehabilitation (32), access to treatment (41), intention to RTW (40), health promotion (1), referral to occupational medicine clinic (12), psychological interventions (34), light mobilization (12), formal psychological & occupational interventions (4), education, physiotherapy component or vocational or work rehabilitation (50), interventions to foster concerted action (4), physician management (34), clinic-based therapy (34), personal advisors & individual case management (7).

2 studies (21)

OT specific interventions (14, 29), early RTW (59, 60), multi-factorial, multi-discipline (50, 54), early contact between worker & employer (19, 50), multidiscipline rehabilitation (39, 61), work accommodation & health professional contact with employer (19, 50), physical conditioning programs including cognitive-behavioural approach (43, 50), education (34, 56), injury at work (3, 57), light duties availability (49, 57), shorter job tenure (44, 57), lack of fairness (15, 58), occupational class (2, 52), psychosomatic concerns (15, 57), locus of control (28, 49), psychosocial factors (24, 56), previous history LBP (51, 56), longer employment (22, 49), poor general health (49, 57), benefits/wage replacement ratio (2, 3), isolation (49, 55),

3 studies (12)

occupational and clinical interventions combined (32, 41, 60), work psychosocial factors (31, 56, 58), lack of autonomy (15, 49, 53), fear avoidance (12, 17, 28), radiating/radicular pain (12, 44, 49), psychological illness (3, 15, 24), sick certificate (length (47, 56, 57), previous injury/illness (2, 12, 44), family/social support (5, 57, 58), physical activity (55, 57, 18), substance/alcohol use (24, 55, 57), education (6, 11, 53),

4 or more (21)

Age - older (1, 2, 3, 5, 6, 12, 15, 22, 24, 31, 46, 49, 52, 53, 56), gender - female (1, 2, 5, 6, 9, 10, 11, 12, 15, 22, 24, 31, 46, 49, 52), RTW plan/goals/interventions (19, 25, 30, 32, 38), modified duties (12, 38, 56, 59), ergonomic evaluation/intervention (19, 50, 59, 60), work environment interventions (4, 34, 38, 59), RTW coordination (4, 21, 42, 50), support of employer (employer/employee decisions (26), employer support (5), supervisor involvement (60), good work leadership (33)), supervisor/co-worker support (3, 11, 44, 49, 58), treatment targeting work function e.g. work hardening (27, 32, 40, 41), job satisfaction/ dissatisfaction related to RTW (12, 22, 51, 56, 58), Heavy work/physical demands/work demands (1, 3, 8, 13, 20, 22, 23, 31, 44, 49, 53, 56, 58), low job control (1, 15, 49, 58), higher expected recovery/RTW expectations (6, 17, 28, 31, 40, 52, 57, 61), depression (12, 34, 49, 57), pain (22, 31, 44, 49, 57), disability or functional impairment (12, 22, 31, 44, 47, 49, 52, 57), compensation (12, 16, 28, 49, 52), socio-economic status/demographics (2, 5, 11, 31, 53, 55), life style (2, 3, 31, 18), marital status (3, 11, 15, 52)

Appendix Chapter Five: Qualitative Interview Study

Appendix 5.1 Interview schedule prompts

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- What do you know about the compensable injury claim process and how do you perceive your role in this system?
 - What are the benefits of return to work for compensable clients?
 - What are the barriers to returning to work for compensable clients?
 - What strategies have you developed for addressing barriers encountered with compensable clients?
 - How do you resource information about return to work, the compensation systems and processes?
 - What are the roles of the stakeholders (i.e. physiotherapists, general practitioners, agents, employers, injured clients) in return to work processes?
 - What skills/resources do you need to support an injured person in returning to work?
 - Can you describe situations where supporting return to work has been easy or straightforward? What factors made it easy?
 - Can you describe situations where supporting return to work has been complicated or you have been unsure what to do?
 - What is your understanding of the current return to work certification process?
 - What education have you received about compensable systems and processes and return to work certification?
 - What communication skills have you developed for dealing with an injured worker or the compensation schemes? How did you develop those skills?
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Appendix 5.2 Paper under review: Barriers and facilitators for return to work following a compensable injury: the physiotherapist's perspective

Gosling C.M., Iles R.A., Morgan P.E, Keating J.L.

Abstract

Early and sustained return to work (RTW) is important for injured workers, insurers and the community. Work has long been identified as providing health, social and community benefits. Physiotherapists are important facilitators of timely recovery and return to work after a compensable injury. The aim of this study was to investigate perceptions of barriers and facilitators to early and sustained RTW identified by physiotherapists working within the Victorian compensation system. Interviews were conducted with 20 physiotherapists (10 Occupational Physiotherapists and 10 non-Occupational Physiotherapists). Participants were asked about barriers and facilitators associated with RTW, their knowledge of the compensation system, and strategies they use to support injured workers. Audio recordings of interviews were transcribed, open coded, and themed by two independent researchers. Key factors perceived to be related to timely RTW were injured worker attitudes; the workplace; unified targets and positive approaches to care by all stakeholders; system delays; inappropriate certification of capacity; communication skills; and knowledge of the Victorian compensation system. For the system to evolve a number of enhancements are recommended including migration from hard copy to electronic record keeping and communication, education at the point of decision making and education in skills to engage stakeholders in designing effective RTW strategies.

Introduction

The nature of compensable injury is complex; injured workers often transition in and out of the workforce before achieving sustained return to work (RTW) [1]. Recently, injury claims data from Victoria, Australia indicated a greater rate of claims (22.3 vs 19.1 per 1000 working population) and proportion of total work time-loss (55.3% vs 44.7% total work-loss years) for recurrent injury claims when compared to initial injury

claims [2]. Facilitating early and sustained RTW following injury is a target for many Australian compensable injury systems [3-5]. It has been proposed that early RTW improves recovery, aids personal well-being and assists with return to normal social interactions [2]. Sustained RTW appears more likely for people with compensable injuries who return within six months of injury compared to those with longer time off work [6]. Once RTW is delayed, programs such as work hardening [7], vocational rehabilitation [8], behavioural therapy [9] and functional restoration [10] are inconsistently successful. Early intervention presents an opportunity for optimising outcomes for injured workers. However, studies investigating interventions initiated within six weeks of injury are relatively rare [11]. Those that are available indicate reduced time lost when the primary complaint is a physical injury. Health care professionals, as early sources of support for the injured worker, may play an important role in motivating and enabling injured people to achieve early and sustained RTW.

The role of work as a facilitator for optimal physical and mental wellbeing has been well established [12]. Physiotherapists play a key role in facilitating recovery following injury and assisting RTW. A recent position statement by the Australian Physiotherapy Association characterised physiotherapists as “actively contributing to prevention of long-term disability and work loss” [13]. Seventy percent of compensable patients with musculoskeletal complaints in a sample of Victorian workers with an injury requiring income replacement between January 2001 and December 2004 sought treatment from a physiotherapist [14]. A median of 25 (IQR 10-62) sessions of therapy per claimant seeking physiotherapy services were provided over this period [14]. Physiotherapists are therefore primary stakeholders and potential contributors in the ongoing evolution of an effective compensation system.

Perceptions of barriers and facilitators for return to work for injured compensable patients have been gathered from doctors, injured people and the wider stakeholder community [15-19]. Despite their pivotal role in physical rehabilitation, little has been reported about physiotherapists' views regarding barriers and facilitators for RTW, or the personal skills they consider valuable in supporting people to RTW. A recent

qualitative investigation into physiotherapists' experiences and perspectives of treating compensable patients identified three key themes: physiotherapists 1) identify themselves as key facilitators in return to work processes, despite being 2) often unclear of their role in the return to work system and 3) use a variety of methods to determine work readiness [20]. To the best of our knowledge, the perceived barriers and facilitators to supporting RTW for injured workers faced by physiotherapists, and the strategies they employ in facilitating RTW have, not been reported. This study investigated perceptions of barriers and facilitators associated with early sustained RTW identified by both experienced and inexperienced physiotherapists working within the Victorian compensation system.

Methods

Setting

Two no-fault third party state-based insurance systems operate under separate legislative acts in Victoria, Australia. Injuries or illnesses sustained while employed are covered by WorkSafe Victoria (WorkSafe), while injuries sustained in a traffic accident are covered under the Victorian Transport Accident Commission (TAC) scheme. Under either scheme, injured or ill people may be eligible for medical and rehabilitation expenses, income replacement and other support, such as remuneration for assistance with household tasks. Employers have an obligation to provide a RTW pathway under the WorkSafe legislation, but not under the TAC legislation.

Under Victorian legislation, physiotherapists have the capacity to complete medical certificates (certificates of capacity) for injured workers, with the exception of the initial certificate for workplace injury claims for weekly compensation. The certification process leads to one of two primary outcomes. Either the injured person is certified unfit to work, in which case no return to work (even to partial or modified duties) is sanctioned. Alternatively the injured worker can be certified as fit to return to work, with or without recommendations for modified or alternative (i.e. suitable) duties. Fit to return to work certification is appropriate even if the person is not well enough to resume their usual work role, and is important for transitioning people back to normal

duties through an incremental progression from modified to full duties. Through the certification process, physiotherapists can play a pivotal role in orchestrating or prohibiting return to work strategies. To be eligible to treat compensable clients, a physiotherapist must hold a nationally recognised qualification, be registered with the Australian Health Practitioners Regulation Agency, obtain a nationally recognised provider number and have this number registered with the insurance scheme supporting their client.

A combined initiative of the TAC and WorkSafe provided targeted professional development to enable best practice in supporting compensable clients and injured workers [21]. This program combined seminars with individualised support to engage Victorian physiotherapists in facilitating early and sustained RTW. The training for those who entered the program (subsequently referred to as Occupational Physiotherapists (OPs)) included education in the compensable system, certification of capacity (or ‘fitness to return to work in any capacity’), return to work strategies and strategies to support people with complex injuries or conditions. OPs were remunerated at a higher level than non-OPs when treating compensable clients. The number of OPs in Victoria was limited as the title was only conferred to those practitioners who completed the prescribed training through the TAC/WorkSafe. This program was discontinued in 2014 and replaced with a new on-line education program open to all physiotherapists (not described in this report).

Participants and Sampling Strategy

Purposive sampling [22] in order of practitioner location, experience and gender, was used to facilitate population representation of private practice physiotherapists in Victoria, Australia. Practice locations were divided into categories. These were metropolitan (north, south, east and west) and rural. Practice experience was categorised as ≤ 5 or > 5 years since initial physiotherapy registration. Equal representation of males and females was targeted. Based on the goal of achieving equal representation across these categories, OPs and non-OPs, identified through publically available information, were approached via email or mail to participate in individual interviews about RTW and certification practices. From those who

consented to an interview, equal numbers of OPs and non-OPs were selected in order of presentation to represent location, gender and experience level. Non-responders were followed up using publically registered practice telephone numbers. Any physiotherapist contacted who either declined to participate or failed to respond to contact attempts was replaced in the sampling pool with another practitioner with matching selection criteria. Based on time available to complete interviews, we planned to recruit up to 20 participants from each OP and non-OP group. Participants provided written informed consent where interviews were conducted face-to-face or verbal informed consent for telephone interviews. Telephone interviewees self-selected to provide verbal consent at the start of the interview or written consent prior to their interview. Where verbal consent was provided, it was recorded on the audio master, in the interview transcript and on a separate verbal consent form. All consent and methodological procedures were approved by the Monash University Human Research Ethics Committee (Approval CF13/2082 – 2013001510).

Data Collection

Participants completed a demographic survey that included questions about age, gender, physiotherapy experience, average number of compensable patient consultations per week and an estimate of the number of certificates of capacity completed in the six months prior to the interview. Semi-structured interviews were conducted by an experienced interviewer, either by telephone or face-to-face, at a location and time that suited consenting participants. Interviews were scheduled for sixty minutes but were flexible based on participant availability. An interview guide was developed to provide prompts to explore key topics related to the participants' experiences of working within Victorian compensation systems (Table 1). Topic areas included barriers and facilitators to RTW for injured compensable patients, development of skills supporting RTW processes, and levels of training regarding the Victorian compensation system and procedures.

Table 1. Interview schedule prompts.

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- What do you know about the compensable injury claim process and how do you perceive your role in this system?
 - What are the benefits of return to work for compensable clients?
 - What are the barriers to returning to work for compensable clients?
 - What strategies have you developed for addressing barriers encountered with compensable clients?
 - How do you resource information about return to work, the compensation systems and processes?
 - What are the roles of the stakeholders (i.e. physiotherapists, general practitioners, agents, employers, injured clients) in return to work processes?
 - What skills/resources do you need to support an injured person in returning to work?
 - Can you describe situations where supporting return to work has been easy or straightforward? What factors made it easy?
 - Can you describe situations where supporting return to work has been complicated or you have been unsure what to do?
 - What is your understanding of the current return to work certification process?
 - What education have you received about compensable systems and processes and return to work certification?
 - What communication skills have you developed for dealing with an injured worker or the compensation schemes? How did you develop those skills?
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Data Analysis

Interviews were audio recorded and transcribed verbatim by an external professional service. These transcripts were then cross-matched with interviewer notes for any additional non-verbal cues. Open coding of the content of the discussion provided the basis for the development of themes that emerged from the data [23,24]. Transcripts were coded independently by two researchers (CG, RI) to minimise individual bias in the analysis. Themes were also identified independently and discussed by the two coders in reaching consensus regarding the final set of themes. These themes were then explored for relationships with participant gender, experience and OP status. An interim analysis occurred after interviews with twenty participants (10 OPs and 10 non-OPs) to assess for saturation in key themes arising from the data and determine the likely merit of conducting additional interviews. Participant characteristics were analysed using descriptive statistics and presented as mean (standard deviation), median (interquartile range) or count (percentage) dependent on data type and distribution. Independent t, Mann-Whitney U or χ^2 were used to test for differences between OP and non-OP participants. The alpha level for concluding significance was 0.05.

Results

Fifty seven clinicians (25 OPs and 32 non-OPs) were approached to participate, with eight (4 OPs and 4 non-OPs) declining the invitation to participate and 25 (11 OPs and 18 non-OPs) failing to respond to follow-up contact. Ten consenting non-OPs and 10 OPs were recruited and interviewed before the interim analysis was conducted. Saturation of the data was considered likely at this point as no new themes had emerged in the analysis of the last three participants from either group. The mean (SD) interview time was 40 (SD10) minutes and there was no difference in mean (SD) interview time between the groups (OPs: 39.9 (11), non-OPs: 40.3 (9.4), $p = 0.9$). Participant demographics are presented in Table 2. The OPs were younger ($p = 0.04$) and saw more compensable clients ($p = 0.04$) than their non-OP counterparts. The OP clinicians had also reported completing more medical certificates in the previous six months compared to the non-OP clinicians ($p = 0.02$).

Table 2. Participant demographics and comparison of characteristics between the OP and non-OP groups.

Characteristic	All Participant s (n=20)	Occupational Physiotherapis ts (n=10)	Non- Occupational Physiotherapis ts (n=10)	OP vs Non OP p value
Sex – n (%) Female	9 (45%)	6 (60%)	3 (30%)	0.18
Age (yrs) – Mean (SD)	37.8 (11)	32.8 (9.6)	42.7 (10.4)	0.04*
Years in practice – Median (IQR)	15 (5-21)	5.5 (5-15)	16.5 (15-30)	0.09
Metropolitan location – n (%)	13 (65%)	6 (60%)	7 (70%)	0.64
Compensable patients per week – Median (IQR)	7 (4-12.5)	11.5 (6-15)	5.5 (2-8)	0.04*
Medical certificates issued in last 6 months – Median (IQR)	6 (3.5-20)	15 (5-30)	4.5 (0-6)	0.02*

* indicates significant difference between OPs and Non OPs

Themes arising from the data were consistent across interviews with both the OPs and non-OPs and data were therefore pooled for further analysis and reporting. The key themes emerging from the data included patient attitudes towards recovery and RTW, the clients' workplace, a unified positive approach to facilitating recovery by all stakeholders, the clients' psycho-social profile, delays in the system, issues affecting certification of capacity, practitioner communication skills, and knowledge of the

Victorian compensation system. A number of these themes reflected factors that could act as a barrier or a facilitator to RTW.

Patient attitudes

Three quarters of the participants considered that both positive (n = 16) and negative (n = 15) patient attitudes affected RTW. Positive attitudes, including a desire to return to pre-injury status, were commonly reported as the most important facilitator in the RTW process.

“... they just want to get better, I think, didn’t want to be injured in the first place, and they just want to get better and get back to normal.” (OP10, Male, 25 yrs)

On the other hand negative attitudes or poor motivation were identified as the most influential barrier to RTW.

“... if they don’t want to go back to work their ... motivation is a big key. If they’re not motivated to return to work, not motivated to do their exercises, then it’s obviously going to limit or slow the progress down of returning to full duties...” (OP7, Female, 29 yrs)

The engagement of the injured person in the recovery process is important in shaping their recovery, and may lead to frustration and poor recovery outcomes.

“... if they’re passive throughout the situation, ... things drag ... they get frustrated and the process falls apart.” (non-OP5, Male, 42 yrs)

Workplace

Participants considered that the clients’ workplace played an important role in the return to work process, with the potential to act as either a barrier or a facilitator. Employers were seen as important facilitators of the RTW process and participants very commonly (n = 17) described instances where the availability of alternative duties, and a positive workplace approach to getting the injured person back to work, had positively influenced outcomes.

“I think that the strategies that were already in place ... getting them to do modified activities and getting them to do altered hours, was great, and a lot of employers, most

employers, I dealt with were fantastic. They'd take people on two days a week, a three hour shift, and it would be what the person could tolerate, with obviously a plan in place to increase that progressively. And that works well." (non-OP7, Female, 28 yrs)

However, inflexible workplaces with little willingness or ability to consider modified duties, modified hours of work or alternative tasks were reported by over half the cohort as a factor in failure to achieve timely RTW.

"... workplace .. saying there's no work for them unless they can do all their normal duties, and you're saying, "Well, that might be, that's going to be a long, long time away."" (non-OP3, Male, 43 yrs)

Another workplace barrier was conflict, bullying or animosity in the workplace, either unrelated to, or as a consequence of, the injury. Conflict could occur with employers or work colleagues.

"... where there's been a disagreement, animosity and a resentment in relation to the patient's injury ... [and the injury is] not seen as being legitimate by the employer." (non-OP6, Male, 60 yrs)

"If there's ... bullying ... at work, if they generally don't like their job or their employer ..." (OP7, Female, 29 yrs)

Employee dissatisfaction with their work was also raised by some participants in the context of workplace barriers.

"the worker's ... over it, he's sick of his work, ... it makes it, ... hard, he's depressed, and it makes it just so much harder, to ... get them back to work." (non-OP4, Male, 41 yrs)

Unified positive approach

Over half the participants considered that positive investment by stakeholders in the recovery process facilitated a timely RTW. Participants considered that RTW was improved when key stakeholders (the injured person, people in the workplace, health care providers and agents working for the compensable bodies) were aligned in their beliefs, expectations, advice and actions.

"...so everyone was just all on the same page. The worker wanted to get back to work, I wanted him to get back to work, work wanted him to get back to work, the insurance company were happy." (OP8, Female, 55 yrs)

“...you’ve had the employer, employee on board and there hasn’t been any sort of complications ... with the agents or case managers; they’ve been very positive and supportive of the return to work process as well. So everyone seems to be heading in the same direction.” (OP9, Male, 43 yrs)

Psycho-social issues

Half the participants reported psycho-social issues as a key barrier in timely RTW. Issues raised included anxiety, depression, personal identity, life situations, language and education.

“We know that when someone’s off work for a prolonged period of time that it’s much harder for them to return to work, ... lots more barriers tend to form during that period; we know it’s better for the worker’s family if they’re at work rather than at home, that they’re contributing as that’s their sense of identity; if they are at work they’re less likely to develop secondary problems such as depression or psycho-social factors ...; financial concerns might start to become apparent when people are off work or [have] less income when they’ve been off work for a period of time...” (OP9, Male, 43 yrs)

Delays

Three types of delays were identified as barriers to timely RTW. These delays included time to complete diagnostic tests and reach a definitive diagnosis, time to implement appropriate treatment or support, and time to establish communication with the insurer and gain approval for implementing supportive processes. Waiting for confirmation of diagnosis following imaging was frequently cited and linked to delays in approving diagnostic tests by insurance agents. Delays in diagnosis were thought to delay treatment, resulting in physiotherapy interventions being commenced much later than ideal in the recovery pathway. One of the most consistent delays reported by practitioners was due to system processes.

“... you have an injury and ... you need some scans, but you have to wait, ... three weeks, four weeks for approval for an MRI scan. ..., you have to just wait for investigations ..., or operations, ... you’re waiting three months for an operation that really needs to be done straight away” (non-OP4, Male, 41 yrs)

There were a number of system related issues that amplified delays in implementing helpful interventions. Communication between stakeholders, especially between

agents and practitioners, were often related to the time of day the physiotherapist was called. Contact was often attempted during consultation hours resulting in considerable time lapses before meaningful dialogue could be established. Participants also reported that the time taken to process approvals for therapeutic interventions or extensions to treatment plans contributed to delaying a persons' timely recovery.

"Sometimes they ... take a while to return calls or they take a, quite a long time to approve anything, whether that be further treatment, equipment or whatever that person needs. They can take a really long time. You know, they say 28 days, well it can be longer than 28 days. So that's definitely a barrier" (OP1, Female, 26 yrs)

The communication method used appeared to be a factor in the delays experienced. Almost all participants reported using hard copy letters and/or telephone contact methods when dealing with key stakeholders, especially general practitioners (GPs).

"I'll often, ... assess the patient and write my assessment findings in a letter day one and then I'll either give them a follow up phone call or a letter, [in] a couple [of days], it depends on the injury ..., if it's a back related injury I know it's going to be a while I'll give them a progress report maybe four weeks down the track or a phone call and then on discharge as well" (OP7, Female, 29 yrs)

Fewer participants discussed the use of email communication as a means of speeding up these interactions or tracking conversations between stakeholders.

"... get information backwards and forwards that way [using email]. It's probably ... a bit more useful than phone conversations 'cause at least you're not dependent on ... both [parties] being at the right place at the right time." (non-OP1, Female, 54 yrs)

"... the reason that I [use] email, because there's a trail of conversations ... this is ... just being more legally savvy, and being able to hold them [the insurers] accountable." (non-OP5, Male, 42 yrs)

Accuracy in medical certification

Inappropriate certification by health professionals was considered to be a barrier to RTW by around 75% of participants. The single most commonly reported frustration

(n=10) linked to certification was where other health care practitioners, who were responsible for certifying a person as fit or unfit to RTW, would classify a person as unfit for any work when the person, in the physiotherapist's opinion, had the capacity to do alternative or modified duties.

"... frequently people come in with a certificate of capacity that says not suitable for any work at all or not fit, and they definitely have capacity in some way... and it's a case of changing that." (OP3, Male, 30 yrs)

Participants' felt that some doctors adopted a conservative approach to patient care that could result in delays in certifying someone as fit to return to (some) work.

"And then I think GPs, sometimes ... perpetuate that as well, and say, "No, we don't want you to go back to work until you're 100% right." So often it gets delayed ..., and then the more it's delayed the evidence shows that the chance of it ever actually happening gets less and less." (non-OP10, Female, 51 yrs)

Communication

Almost all participants (n = 19) reported that communication with all stakeholders was an important facilitator in assisting RTW. Apart from the injured person, the stakeholders that physiotherapists most commonly communicated with were employers (n = 19) and GPs (n = 19).

"I would have long conversations with the employers and detail to them exactly what we're doing, and I would often ask them what can the employee do with what their capacity is at the moment. Because often the employers wouldn't even think about it. They'd just say "If they can't do this job I don't have anything else for them". And I'd explain to them that even them just being at work, even if their capacity isn't as great, it's, it's still a start, and it's getting them into the environment that they need to be in ..." (non-OP7, Female, 28 yrs)

"I guess as a multidisciplinary approach, every person involved in ... the worker's ... return to work and rehab[ilitation] should be involved in communicating with everyone else so whether it's the GP or a psychologist or a social worker or the OT for their return to work..." (non-OP9, Male, 39 yrs)

Participants were asked how they developed their communication skills. Eighteen participants reported that communication skills were developed “over time” and not linked to formal training.

“I’ve done nothing formal, nothing formal at all. Look, experience. I guess it’s one of those things I, I guess I pride myself in being able to talk with anybody who walks in my door fairly well, but no, I haven’t taken on any formal communication training; it hasn’t even crossed my mind to.” (non-OP3, Male, 43 yrs)

“... how important it is, what you say to people and the language that you use so that you’re not inflaming current misconceptions about someone’s injury. ... I guess I’ve just, ... 30 years of practicing you just get better at what you say to people.” (non-OP10, Female, 51 yrs)

Education about the compensation system

The OPs commonly reported that they attended the extended OP seminar training for numerous reasons including to extend their knowledge of the compensation systems in Victoria (n = 8), networking opportunities (n = 4) and the financial advantage of higher remuneration for each client consultation (n = 4). The majority of all participants (n = 18) reported that learning “on the job” was how they developed their initial knowledge of the Victorian compensation system.

“The education I got was when I was working in private practice, ... you just kind of had to learn on the go ... you kind of pick up the system as you go along.” (non-OP7, Female, 28 yrs)

OP clinicians felt that undertaking the specific OP seminar training improved their knowledge, use of communication to facilitate RTW and resulted in changes to their practices.

“... it has been helpful and it’s actually – it’s probably exceeded my expectations because I wasn’t ... expecting this but it really helped change my approach to WorkCover clients, and that’s filtered through to the rest of the practice. So, as a practice, we’re a lot more dynamic now” (OP8, Female, 55 yrs)

These responses were different to the “learning on the job” approach reported by participants, leading some non-OPs to confirm continued confusion or limited knowledge about aspects of the compensation system and its processes.

“... yeah, to this day, I’m still a bit confused as to how the whole system works, which is probably quite obvious.” (non-OP7, Female, 28 yrs)

“... where we are talking about a long-term claim and potential not to return to work and, and I guess ..., I don’t fully understand the legal implications of the insurance company. (non-OP3, Male, 43 yrs)

Mentors, in-practice colleagues/staff or in-service seminars were reported as primary sources of “on the job” information about treating compensable clients for all participants.

“I guess I’ve been mentored ... by ... experienced physiotherapists ...” (OP1, Female, 26 yrs)

A potentially sensitive topic raised by one participant related to the development of their knowledge and clinical experience. They reported that during the course of their recent early clinical experience in private practice they received inadequate support from senior clinicians and witnessed abuse of the compensation system by fellow practitioners.

“I would get ... the same WorkCover clients come in three or four times a week for a long, long time. ... some of them were there from before I started to when I finished, ... and it was my seniors treating them, and it’s almost like it’s their bread and butter and they just keep them coming. I think ... it’s easy for them. They do the same treatment every time. They don’t change anything. I was never comfortable with it. ... And so I had some people saying to me, you know, “Just, just fill your list with WorkCover clients”.

(Participant details suppressed)

Some participants no longer seek out compensable clients because of time, low remuneration for services provided and frustrations dealing with the system.

“... as you get more, ... experience ..., you tend to just stick with ... private patients, they pay better, they do. And it ... only pays, what \$49 or something per session? And you know, then you get paperwork and you know, calls from employers and insurers, and ... workers that are, that aren’t really interested in going back to work, and you know, it’s the ... whole story.... And it just gets a bit too much sometimes. You just, sort of, think, ‘I’ll just treat people who pay straight away,’ oh, then you have to wait for payment, and yeah, so all that sort of stuff. ... there [are] many factors.” (non-OP4, Male, 41 yrs)

“... the person that I was working for, for really said “We don’t want to see WorkCover clients, ..., and if you have to see them they pay a gap fee”. And I guess that was when I did see that ... there was a difference when people paid a certain amount.” (non-OP7, Female, 28yrs)

Discussion

This study summarised physiotherapist perceptions of the primary barriers and facilitators to early RTW for injured clients within the context of the Victorian compensation systems. System delays, misconceptions regarding the value of early RTW, and attitudes about RTW held by injured workers surfaced as the key barriers; alignment of stakeholder beliefs in the value of RTW and timely approvals for actions that might facilitate RTW were considered key facilitators. Given the pivotal role of client attitudes and workplace/employer approaches to timely RTW, the skill of the physiotherapist in steering consensus regarding the best pathway for recovery is a central focus for future attention. Physiotherapists, both non-OPs and the OPs prior to receiving their extended training, reported unstructured and fragmented education in how the compensation system works, and no participants reported structured development of the communication skills required to drive motivation in key stakeholders. The expressions of frustration with the unmotivated patient signal a lack of awareness of strategies that might be implemented in mitigating the evolution of such conditions, or realigning client, employer and certifying practitioner beliefs about actions that support recovery. The results of this study paint a picture of a system for supporting injured workers that has grown organically across time. There are situations where it appears to work well. This occurs when all stakeholders are aware of the value of early RTW and act decisively to achieve this goal. Powerful evidence of situations where the system does not meet the needs of injured workers appears in the reluctance of practitioners to treat people who are supported by compensation schemes, and the many ways in which the system itself introduces delays to both interventions and RTW. Mazza et al. [25] reported similar issues affected the services provided to compensable patients by doctors.

Three types of delays were identified as barriers to RTW: time to diagnosis, time to implementation of appropriate treatment or support, and time to establish effective

communication. Difficult diagnoses often require extended and/or expensive investigations (e.g. MRI), necessitating the need for consultation between key stakeholders including doctors, agents and physiotherapists. It is not clear however that all the diagnostic delays were associated with complex assessments. Any interruption in the process of approving diagnostic tests required to inform appropriate treatment has the potential to delay the implementation of effective treatment strategies. Our data supports current research, that time to establish contact with stakeholders and timely approval of practitioner requests by agents contributes to RTW delays [15]. The hard copy letter and telephone conversations utilised for communication between key stakeholders, and fragmented systems for aligning expectations and practices of stakeholders, might be rectified by options in communication that are now available. Despite its reach, speed and ease of use, less than 2% of all GP emails relate to communication about patients [26].

Automated approval for routine tests could significantly reduce delays to early intervention. Systems in which the diagnostic and treatment pathways of health care practitioners are automatically approved have resulted in reductions in lost work days, total costs and claim duration when compared to non-automated approval systems [27]. Given that the majority of requests by health professionals for tests and interventions are approved, only those requests that are flagged as counter-intuitive (using predetermined algorithms) might be reviewed. For example, if an X-ray was ordered for non-specific low back pain, in conflict with recommended clinical guidelines [28], information regarding best practice might be presented and a request for additional information would be initiated before the order could be submitted for consideration. Review panels, examining patient records electronically, could quickly request the data or reasoning required to approve a request. Since the completion of the interviews with participants, the Victorian compensation jurisdiction has implemented time saving measures, including the automation of routine approvals. Examples include doctor referral for magnetic resonance imaging, routine pathology tests, streamlined surgical approval procedures and physiotherapist referral for services or equipment. Future investigations might revisit the effect of these changes on the delivery of services.

Electronic communication and e copy of records might be combined with ‘education at the point of decision making’ to counter many barriers to effective support for injured workers. To illustrate with examples, e certification might include feedback on a decision to certify a worker as unfit for work, by reminding the certifier that this will delay RTW, that a ‘fit to work’ certification is one trigger to aid the design of suitable modified duties for injured workers, and that evidence supports early RTW in any capacity as an important component of rehabilitation. Injured workers and employers might also be educated about the consequences of delayed RTW when they complete obligatory documents, if these were completed on-line.

Communication between all stakeholders would be streamlined if relevant patient related data and decisions were visible to all those who are in a position to positively influence the rehabilitation process. Brijnath et al. [15] have previously reported that poor communication between medical practitioners and conflicting medical opinions are a major barrier to RTW in claimants with mental health conditions. Conflicts between stakeholders could be flagged and dealt with in electronic discussion and guided decisions, without the constraints of finding common time for discussion. Such visibility in reporting might also counter over-servicing of compensation patients [14]. If treatment records were visible to all stakeholders, physiotherapists may desist from protracted provision of ineffective services for fear of unfavourable peer evaluation. In the current system, ineffective treatments can continue ‘under the radar’ until review by the compensation body identifies slow client recovery. Under a secure automated system, lack of change in key outcomes could trigger a request for treatment plan review that was visible to other stakeholders. Peer review and peer expectations are powerful drivers of performance [29]. Other problems associated with over-servicing of compensable patients are the modelling of inappropriate practices to junior physiotherapists and the construction of a business model that relies on over-servicing for a ‘viable business’.

When early RTW is the common aim of all stakeholders then the compensation system appears effective and streamlined. It is important to facilitate the unified beliefs, advice and actions of key stakeholders about best practice in supporting injured workers. Hoefsmits et al. [11] reported that using multidisciplinary interventions for physical injuries resulted in positive

outcomes, including a greater proportion of clients who returned to work sooner and accumulated fewer days of sick leave. The challenge is to develop a consensus position among stakeholders. The answer may lie in an effective communication strategy that is reinforced at each point where erroneous beliefs could lead to inappropriate actions or decisions. Fostering camaraderie between all stakeholders, and in particular the injured worker, would appear to be an important element in an efficient system. In a recent study, injured workers reported high levels of compensation related stress when trying to understand claim requirements (34%), claim delays (30%), requirements to attend a high number of medical assessments (27%) and issues relating to the amount of compensation (26%) [30]. It therefore appears important that claimants receive adequate support during this process. Although a physiotherapist may be ideally placed to provide claim related guidance, thereby reducing claim related anxiety, our study participants reported very variable understanding of the compensation system. A potential solution may be education at the point of decision-making, which could be achieved with electronic record keeping.

If system process were easier to navigate, stakeholders could turn their focus to engagement of the injured worker. Motivation and positive expectations around recovery were raised in this study, and have previously been linked to RTW [31,32] and a reduction in compensation claims [33]. Poor recovery and RTW outcomes have previously been related to low expectations of recovery [34,35] and expected longer sick leave durations [36]. Despite the repeated message from participants of the important role of psychosocial factors and motivation to RTW, no participants described strategies, such as motivational conversations [37], to guide injured workers in setting their own RTW targets. While some participants described the importance of conveying the right messages, none described systematic education in how to construct conversations with stakeholders to maximise empowerment of the injured worker in driving their own RTW strategy.

In most cases, the compensation system works in delivering timely RTW for most injured clients. WorkSafe reported that in about one fifth of claims, workers are not back at work by six months [38]. This is supported by data from the Australian Return to Work Survey reporting that approximately 75% of Victorians had returned to work within 7-9 months and 85% had returned to work at some point since lodging their claim [39]. In a sample of TAC clients with a traffic related orthopaedic injury requiring hospitalisation (n=2,445), 66.8% of claimants

working prior to injury had returned to work at 12-months [40]. It remains unknown whether reducing barriers to timely RTW may improve these statistics.

The participants in our study reported experiences where workplaces/employers either act as a facilitator or a barrier in the RTW pathway. Others have reported that workplaces are pivotal in the return of an injured worker to employment [41]. Examples of strategies for graduated RTW might enable employers to better consider the role they might play. In an electronic communication system, where proposed options were visible to key stakeholders, physiotherapists might review and advise employers on the ability of the injured worker to take advantage of available options. Progression in return to full duties could be both convenient and collegial if facilitated in this way. Soklaridis et al. [42] reported that employer costs associated with RTW such as medical, equipment, education and training, wage replacement and lost productivity and claims administration can impact on an employers' decision to facilitate an appropriate RTW pathway. When workplaces act as a RTW barrier, it is not clear whether employers (or other stakeholders) understand the consequences of delayed RTW including the economic consequences, effects on staff morale, satisfaction with work and productivity, cost associated with staff turnover; and legal liability risks [43].

Inappropriate certification by other healthcare practitioners was deemed as the biggest problem related to certification of compensable patients. In a recent report, Mazza et al. [25] identified numerous issues with the certification practices of GPs. These included providing certificates based on worker requests, acting as advocates for their patient without facilitating RTW, relying on the patient to be the conduit for all information between stakeholders, dealing with time pressures and communicating ineffectively. Collie et al. [44] reported that almost 75% of all initial certificates of capacity written by GPs in Victoria in 2003-2010 recommended that the injured worker was unfit for any duties. Similar reports of inappropriate certification have been raised in the United Kingdom [45]. Reasons for inappropriate certification include certifier knowledge of the difference between 'fit for previous duties' and 'fit for any work'; practitioner beliefs about what is good for the injured worker; failure to acknowledge the importance of early RTW in maximising recovery; and practitioners avoiding conflict with patients who insist on time off work. Some of these issues might be ameliorated at a systems level through education at the point of decision making.

Physiotherapists appear to be ideally positioned to assess functional capacity, but they frequently do not have the authority to issue certificates of capacity [20]. In Victoria, physiotherapists can issue all certificates except the first certificate, and can change certification status at any time. Professional relationships may make it difficult in some cases for physiotherapists to challenge a certification decision by a GP. If all stakeholders were aligned in the common belief that maximising RTW was central to patient care, this would not be an issue.

Stakeholders appear to need more education than can be provided under the existing systems. Education of a range of stakeholders in the merit of enabling early RTW through appropriate certification, provision of suitable duties by employers, the importance of rapid diagnosis and treatment, and the value of interventions that actively engage injured workers to recognise the value in early RTW (and the dangers of delayed RTW) may counter many of the barriers described by participating physiotherapists. Recently, TAC and WorkSafe have modified certification practices such that health professionals are asked to document the injured worker's capacity for work rather than focusing on their limitations [46]. Such education may even counter the disengagement and psychosocial factors that affect the motivation of injured workers to RTW. Although face-to-face education in supporting compensable patients has previously been reported to improve physical outcomes [21], such education is expensive, time consuming and limited in its reach into the community of practitioners.

Re-imagining a system built around on-line communication and education would take advantage of the many opportunities in emerging technologies: large databases, rapid information retrieval and built in decision aids that provide education at the point where a decision is made. Given the existing fragmentation in beliefs, behaviours, knowledge and communication, and the inefficiencies in streamlining important services that accelerate the RTW pathway, it seems that such reconceptualising and reconstruction of the compensation system is inevitable. Any system changes should gather stakeholder input and nurture ownership of revised processes to encourage acceptance.

This study provides an exploration of barriers, facilitators and system factors as they pertain to returning an injured worker to employment. However, the results of this study need to be viewed with some limitations in mind. The sample of twenty participants (10 OP, 10 non-OP) may limit the generalizability of these findings. We were confident that near saturation was achieved in the data given that no further themes were extracted from the data when the interviews of the last three participants in each group were analysed. The themes generated by our analysis of physiotherapist responses were similar to views of other health professionals leading us to have confidence in the data presented in this paper. Another limitation may be the younger age of the OP participants. The views of this group may be influenced by their level of experience and the types of practices or practitioners they have been associated with since graduation.

Conclusion

This report summarises the perception of physiotherapists about key barriers, facilitators and system issues within the worker's compensation environment in Victoria, Australia. Injured worker attitudes and workplace factors were considered to have an important influence on timely RTW. Clinicians play an important role in facilitating RTW through appropriate communication, patient education and certification of true work capacity. For the system to evolve a number of enhancements are recommended including stakeholder education in compensation system processes, development of effective communication skills and strategies, and the use of online tools to enable education and reduce the influence of factors that delay RTW.

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References

1. Øyeflaten I, Lie S, Ihlebæk C, Eriksen H. Multiple transitions in sick leave, disability benefits, and return to work. - A 4-year follow-up of patients participating in a work-related rehabilitation program. BMC Public Health. 2012; 12: 748.
2. Ruseckaite R, Collie A. The incidence and impact of recurrent workplace injury and disease: a cohort study of WorkSafe Victoria, Australia compensation claims. BMJ Open. 2013; 3: e002396.
3. WorkSafe Victoria. Return to Work. WorkSafe Victoria. 2015. Available: <http://www.worksafe.vic.gov.au/return-to-work>
4. Transport Accident Commission, WorkSafe Victoria. Clinical Framework: For the delivery of health services. 2012. Available: http://www.worksafe.vic.gov.au/_data/assets/pdf_file/0006/3885/clinical-framework.pdf. Accessed 20 March 2015.
5. WorkCover SA. Return to Work. WorkCover SA. 2015. Available: <https://www.workcover.com/health-provider/return-to-work?AspxAutoDetectCookieSupport=1>
6. Johnson D, Fry T. Factors affecting return to work after injury: A study for the Victorian WorkCover Authority. Melbourne Institute. Working Paper No. 28/02 2002.
7. Schonstein E, Kenny D, Keating J, Koes B, Herbert RD. Physical conditioning programs for workers with back and neck pain: a cochrane systematic review. Spine. 2003; 28: E391-395.
8. Hou WH, Chi CC, Lo HL, Kuo KN, Chuang HY. Vocational rehabilitation for enhancing return-to-work in workers with traumatic upper limb injuries. Cochrane Database Syst Rev. 2013; 10: CD010002.
9. Verhagen AP, Bierma-Zeinstra SM, Burdorf A, Stynes SM, de Vet HC, et al. Conservative interventions for treating work-related complaints of the arm, neck or shoulder in adults. Cochrane Database Syst Rev. 2013; 12: CD008742.
10. Proctor TJ, Mayer TG, Theodore B, Gatchel RJ. Failure to Complete a Functional Restoration Program for Chronic Musculoskeletal Disorders: A Prospective 1-Year Outcome Study. Arch Phys Med Rehabil. 2005; 86: 1509-1515.
11. Hoefsmit N, Houkes I, Nijhuis FN. Intervention Characteristics that Facilitate Return to Work After Sickness Absence: A Systematic Literature Review. J Occup Rehabil. 2012; 22: 462-477.

12. Waddell G, Burton AK. Is work good for your health and well-being? London: TSO, Department for Work and Pensions 2006.
13. Australian Physiotherapy Association. The physiotherapists' role in occupational rehabilitation. 2012. Available:
https://www.physiotherapy.asn.au/DocumentsFolder/APAWCM/Advocacy/PositionStatement_2017_Thephysiotherapist%E2%80%99s_role_occ_rehabilitation.pdf. Accessed 20 March 2015.
14. Berecki-Gisolf J, Collie A, McClure R. Determinants of Physical Therapy Use by Compensated Workers with Musculoskeletal Disorders. *J Occup Rehabil*. 2013; 23: 63-73.
15. Brijnath B, Mazza D, Singh N, Kosny A, Ruseckaite R, et al. Mental Health Claims Management and Return to Work: Qualitative Insights from Melbourne, Australia. *J Occup Rehabil*. 2014; 24: 766-776.
16. Cohen D, Marfell N, Webb K, Robling M, Aylward M. Managing long-term worklessness in primary care: a focus group study. *Occup Med (Lond)*. 2010; 60: 121-126.
17. Kosny A, MacEachen E, Ferrier S, Chambers L. The Role of Health Care Providers in Long Term and Complicated Workers' Compensation Claims. *J Occup Rehabil*. 2011; 21: 582-590.
18. Russell G, Brown JB, Stewart M. Managing injured workers: family physicians' experiences. *Can Fam Physician*. 2005; 51: 78-79.
19. Schweigert MK, McNeil D, Doupe L. Treating physicians' perceptions of barriers to return to work of their patients in Southern Ontario. *Occup Med (Lond)*. 2004; 54: 425-429.
20. Johnston V, Nielsen M, Corbière M, Franche R-L. Experiences and Perspectives of Physical Therapists Managing Patients Covered by Workers' Compensation in Queensland, Australia. *Phys Ther*. 2012; 92: 1306-1315.
21. Pizzari T, Davidson M. Health Outcomes can be Improved by Implementing an Occupational Physiotherapy Provider Programme. *Physiother Res Int*. 2013; 18: 47-54.
22. Ritchie J, Lewis J, Elam G, Tennant R, Rahim N (2014) Designing and selecting samples. In: Ritchie J, Lewis J, McNaughton Nicholls C, Ormston R, editors. *Qualitative Research Practice A guide for social science students and researchers*. 2nd ed. London: Sage Publications Ltd. pp. 111-145.
23. Spencer L, Ritchie J, O'Connor W, Morrell G, Ormston R (2014) Analysis in Practice. In: Ritchie J, Lewis J, McNaughton Nicholls C, Ormston R, editors. *Qualitative Research Practice A guide for social science students and researchers*. London: Sage Publications Ltd. pp. 295-346.
24. Spencer L, Ritchie J, Ormston R, O'Connor W, Barnard M (2014) Analysis: Principles and Processes. In: Ritchie J, Lewis J, McNaughton Nicholls C, Ormston R, editors.

- Qualitative Research Practice A guide for social science students and researchers.
London: Sage Publications Ltd. pp. 269-294.
25. Mazza D, Collie A, Brijnath B, Kosny A, Ruseckaite R, et al. FIT to Work: General Practitioners facilitating injured workers return to work. Institute for Safety, Compensation and Recovery Research 2013.
 26. Karhula T, Kauppila T, Elonheimo O, Brommels M. Use of email in communication between the Finnish primary healthcare system and general practitioners. *Inform Prim Care*. 2011; 19: 25-32.
 27. Bernacki EJ, Tao X, Yuspeh L. An Investigation of the Effects of a Healthcare Provider Network on Costs and Lost Time in Workers' Compensation. *J Occup Environ Med*. 2006; 48: 873-882.
 28. Australian Acute Musculoskeletal Pain Guidelines Group (AAMPGG). Evidence-based management of acute musculoskeletal pain. Brisbane, Australia: Australian Academic Press; 2003.
 29. Maas MJM, van der Wees PJ, Braam C, Koetsenruijter J, Heerkens YF, et al. An Innovative Peer Assessment Approach to Enhance Guideline Adherence in Physical Therapy: Single-Masked, Cluster-Randomized Controlled Trial. *Phys Ther*. 2015; 95: 600-612.
 30. Grant GM, O'Donnell ML, Spittal MJ, Creamer M, Studdert DM. Relationship between stressfulness of claiming for injury compensation and long-term recovery: A prospective cohort study. *JAMA Psychiatry*. 2014; 71: 446-453.
 31. Berglund H, Gerner U. Motivation and return to work among the long-term sicklisted: an action theory perspective. *Disabil Rehabil*. 2002; 24: 719-726.
 32. Franche RL, Krause N. Readiness for return to work following injury or illness: conceptualizing the interpersonal impact of health care, workplace, and insurance factors. *J Occup Rehabil*. 2002; 12: 233-256.
 33. Buchbinder R, Jolley D, Wyatt M. Population based intervention to change back pain beliefs and disability: three part evaluation. *BMJ*. 2001; 322: 1516-1520.
 34. Feuerstein M, Berkowitz SM, Haufler AJ, Lopez MS, Huang GD. Working with low back pain: Workplace and individual psychosocial determinants of limited duty and lost time. *Am J Ind Med*. 2001; 40: 627-638.
 35. Iles RA, Davidson M, Taylor NF, O'Halloran P. Systematic Review of the Ability of Recovery Expectations to Predict Outcomes in Non-Chronic Non-Specific Low Back Pain. *J Occup Rehabil*. 2009; 19: 25-40.
 36. Steenstra IA, Koopman FS, Knol DL, Kat E, Bongers PM, et al. Prognostic Factors for Duration of Sick Leave Due to Low-Back Pain in Dutch Health Care Professionals. *J Occup Rehabil*. 2005; 15: 591-605.

37. Miller WR, Rollnick S. Motivational interviewing: helping people change. 3rd ed. New York, NY: Guilford Press; 2013.
38. Victorian WorkCover Authority. VWA Annual Report 2014. 2014. Available: http://www.worksafe.vic.gov.au/_data/assets/pdf_file/0003/142698/VWA-2014-ANNUAL-REPORT.PDF. Accessed 20 March 2015.
39. Return to Work Matter Team. Return to work rates Australia and New Zealand 2006-06 to 2013-14. 2014. Available: <http://www.rtwmatters.org/handbook/rtw-survey-2014/>. Accessed 15 April 2015.
40. Gabbe B, Simpson P. VOTOR Client Outcomes Report. Institute for Safety, Compensation and Recovery Research: Institute for Safety, Compensation and Recovery Research. 0412-007-R3 2012.
41. Jakobsen K, Lillefjell M. Factors promoting a successful return to work: from an employer and employee perspective. *Scand J Occup Ther*. 2014; 21: 48-57.
42. Soklaridis S, Cassidy JD, Van Der Velde G, Tompa E, Hogg-Johnson S. The economic cost of return to work: An employer's perspective. *Work*. 2012; 43: 255-262.
43. Bardos M, Burak H, Ben-Shalom Y. Assessing the Costs and Benefits of Return-to-Work Programs. *Mathematica Policy Research* 2014.
44. Collie A, Ruseckaite R, Brijnath B, Kosny AA, Mazza D. Sickness certification of workers compensation claimants by general practitioners in Victoria, 2003–2010. *Med J Aust*. 2013; 199: 480-483.
45. Hussey S, Hoddinott P, Wilson P, Dowell J, Barbour R. Sickness certification system in the United Kingdom: qualitative study of views of general practitioners in Scotland. *BMJ*. 2004; 328: 88-92.
46. WorkSafe Victoria. Certificate of Capacity - Users Guide. 2015. Available: http://www.worksafe.vic.gov.au/_data/assets/pdf_file/0006/142809/CoC-user-guide_February-2015.pdf. Accessed 20th April, 2015.

www.iscrr.com.au