MONASH University

MONASH
INSURANCE WORK
AND HEALTH GROUP

Best Practice Statement

Risk Factor Identification for Delayed Return to Work

April
2018

Contents

Figures

Tables

This document aims to outline the key concepts underpinning best practice in risk factor identification for delayed return to work (RTW) based on available evidence and knowledge of current practice in worker's compensation case management.

This Statement was prepared by Ross Iles and Debbi Long with input from Alex Collie and Niki Ellis as part of the Recovery Blueprint project, a partnership between WorkCover Queensland and the Insurance, Work and Health Group at Monash University.

This report may be cited as: Iles, R., Long, D., Ellis, N. & Collie, A. Risk factor identification for delayed return to work: best practice statement. Insurance, Work and Health Group, Faculty of Medicine, Nursing and Health Sciences, Monash University (2018).

This document draws from peer-reviewed literature, unpublished research and author knowledge of the field but is not intended to be an exhaustive review of existing literature on the topic.

The authors gratefully acknowledge the contributions of WorkCover Queensland and participants of the Recovery Blueprint external stakeholder workshops hosted by WorkCover Queensland. The authors also acknowledge the input of Professor Douglas Gross, Dr Renee-Louise Franche, Dr Ivan Steenstra, Dr Petrina Casey, Jason Lardelli and Julia Bunn in the preparation of this statement.

For further information relating to this Best Practice Statement please contact the Insurance Work and Health Group at Monash University via Dr Ross Iles (ross.iles@monash.edu or +61 3 9903 0776).

MONASH
INSURANCE WORK
AND HEALTH GROUP

WorkCover
QUEENSLAND
we cover, we care

Executive Summary

This document aims to outline the key concepts underpinning best practice in risk factor identification for delayed return to work (RTW) based on available evidence and knowledge of current practice in worker's compensation case management.

Risk factor identification for delayed return to work can be described as the gathering of information related to a claim for worker's compensation to identify factors that can influence the claim outcome. The overarching principles behind identification of risk is that it will inform an appropriate course of action to achieve optimal RTW outcomes and guide evidence-based, transparent and consistent decision making that is acceptable to all stakeholders.

Risk factor identification for delayed RTW can be applied to drive two main purposes:

1. Guide appropriate allocation of resources. The identification of level of expected input (e.g. low, medium or high) can be used to inform triage and the case management model to be applied for a claim.
2. Guide appropriate service delivery, both responsively and proactively. Proactive service delivery aims to address barriers to RTW ahead of time.

Risk factors for delayed RTW fall into four domains: injury, work, individual and scheme specific elements. The amount of information available related to risk factors increases throughout a claim, however the ability to positively influence the outcome decreases the longer a worker remains absent from work. Best practice risk factor identification requires a balance between the timing of information availability, the ability to intervene in order to positively influence outcomes and the resources required to collect the information required to inform appropriate action. Ongoing monitoring of risks provides opportunities to respond to changes over the life of a claim.

Considering the nature of information readily available and the resources required to gather comprehensive information, risk factor identification is most readily applied at the claim determination stage to guide resource allocation and in the early claim management phase to guide proactive service delivery.

There is a lack of direct evidence to guide practical implementation of risk factor identification and intervention. As a result, the method of collection, timing and interpretation of the information should reflect characteristics such as operational structures, experience and skill level of people involved and infrastructure available to inform risk-based intervention. The Risk Factor Identification Guide has been developed to assist the adaptation of the evidence around risk factor identification to the context in which it is to be applied in order to guide intervention.

BEST PRACTICE RISK FACTOR IDENTIFICATION FOR DELAYED RTW REQUIRES THE FOLLOWING—

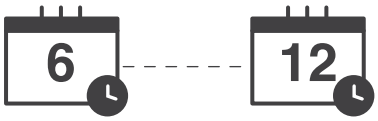
Assessment of risk factors across multiple domains. Increasing complexity of analysis will only improve accuracy of decision making when all necessary information is available.

A balance between the timing of information availability, the ability to intervene in order to positively influence outcomes and the resources required to collect the information required to inform appropriate action.

Use of both administrative level information and more comprehensive information related to risk factors.

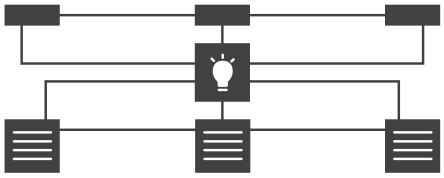
Information systems capable of capturing and retrieving data from internal and external sources. Information must be delivered to decision makers in a manner that is interpretable, points to clear methods of action and is timely for key decision points in a claim.

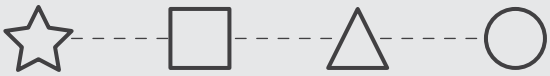
Collection, collation and interpretation of information in a timely manner to guide proactive service delivery. Best practice risk factor identification will facilitate intervention in the therapeutic window (6 to 12 weeks post injury) where the impact of a number of interventions can be maximised.



Systematic documentation and monitoring of risk factors to identify both the emergence of new factors and changes to information previously collected.

Appropriate application of automated decision making combined with judgement-based decision making when determining actions in claim management. The information available and the purpose of decision making will dictate which approach is required.





Understanding of the characteristics of the system within which risk factor identification and intervention is to be applied. Contextual factors will determine the most effective use of risk information to guide resource allocation and service delivery.

Document Scope

Factors that influence RTW after injury are complex, dynamic and subject to variation throughout the life of a claim [1]. Some factors are modifiable and open to intervention, while others are less able to be influenced [2]. The overarching principle behind identification of risk is that it will inform an appropriate course of action to achieve optimal RTW outcomes for the worker, the employer, the administering scheme and the broader society.

Ongoing emphasis on early identification in practice and in the literature has led to a large body of research in the early, exploratory stages of prognostic research [3, 4, 5]. However, little evidence exists that permits evaluation of the impact of intervention based on risk factor identification in a worker's compensation context [6, 7, 8, 9, 10]. This document aims to outline the key concepts underpinning best practice in risk factor identification based on available evidence and knowledge of current practice in worker's compensation case management. Drawing from these key concepts and the extent of existing evidence and knowledge, characteristics of best practice in risk factor identification for delayed RTW are described, alongside the contextual factors that need to be considered. While a main purpose of risk factor identification is to inform appropriate intervention, the description of interventions aligned with specific risk factors is outside the scope of this document.

Risk factor identification typically forms an element of high quality case management [11]. While the concepts behind best practice case management have informed aspects of this document, a detailed discussion of key case management principles can be found elsewhere [12].

The overarching principle behind identification of risk is that it will inform an appropriate course of action to achieve optimal RTW outcomes for the worker, the employer, the administering scheme and the broader society.

Risk Factor Identification– Purpose

Risk factor identification in a worker's compensation setting can be described as the gathering of information related to a claim to identify factors that can influence the claim outcome. Claim outcomes are measured in a variety of ways, with different outcomes viewed as more important for different stakeholders [13]. For example, claim outcomes can be measured in terms of health outcomes for the injured worker, time taken to RTW, workforce impact on the employer or costs associated with the claim. Equally important can be measures of satisfaction with claim management and the manner in which a claim was brought to closure.

For the purposes of this Statement, risk factor identification can be applied to drive two main purposes:

1. Guide appropriate allocation of resources
2. Guide appropriate service delivery, both responsively and proactively

The aim of risk factor identification is to guide evidence-based, transparent and consistent decision making that is acceptable to all stakeholders.

The aim of risk factor identification is to guide evidence-based, transparent and consistent decision making that is acceptable to all stakeholders.

Appropriate Allocation of Resources

In most worker's compensation schemes, the majority of claims are settled in a short time frame with case management focused on administrative factors [14]. Some claims, however, require the facilitation of a number of services to assist in RTW. In these cases, case management requires a higher level of input, resources and case manager skill to achieve desired outcomes [15, 16]. Risk factor identification can guide resource allocation in determining the likely level of input required to achieve positive outcomes for the claim [14]. An example of resource allocation involves three categories:

1. **Low**—Little to no input required. For these claims case management intervention is mostly unnecessary. These claims will reach a satisfactory outcome with minimal to no active intervention from a case manager.
2. **Medium**—Some level of case management required to facilitate some aspects of treatment and recovery. These claims have one factor or a small number of factors that have the potential to complicate recovery and return to work. Case management intervention is needed from time to time to enable the claim to reach a satisfactory outcome.
3. **High**—Ongoing case management required throughout the claim. These are the most complex claims that require multiple inputs from the case manager across the life of the claim. This could be due to the nature and severity of the injury (e.g. mental health) combined with other complicating factors (e.g. unsupportive workplace, low expectation of recovery etc). These claims are the most demanding and require the most resources to achieve a satisfactory outcome.

Risk factor identification can be applied to identify the level of input required on a claim. The simplest model to consider is to examine the number of risk factors present in a claim; the greater the number of risk factors, the greater the input required. In reality, some risk factors are more readily addressed than others, and patterns of risk factors are likely to provide a clearer basis upon which to identify the claims that require more resources to manage.

The identification of low, medium and high input claims can be used to inform triage and determination of the case management approach to be applied [14]. Where this is the case, systems of ongoing monitoring should be applied to ensure the allocation is appropriate throughout the life of a claim, as risk profiles and injured worker needs can change over time [17].

Ongoing monitoring should be applied to ensure the allocation is appropriate throughout the life of a claim, as risk profiles and injured worker needs can change over time.

Appropriate Service Delivery

One aspect of case management is the facilitation of a range of services to assist in the injured worker's recovery and return to work [15, 16]. These can range from physiotherapy treatment or surgery to work-focused cognitive behavioural therapy or host employment placement. Risk factor identification can be utilised in the decision making process to inform the delivery of evidence-based intervention. For example, requests for investigations such as an MRI could be approved on the basis that it is appropriate for the condition, or that payments for psychological services could be accepted based on information gathered throughout a claim (e.g. gathered from a treating health professional). Service delivery can be considered as responsive (i.e. applied as needs become apparent) or proactive, where an injured worker's needs are determined ahead of time.

Risk factor identification is best used to guide service delivery in a proactive manner [7]. Information gathered can be used to identify services that might be applied in a preventative fashion, such as referral to psychological services where there is a high risk of secondary psychological complications, or intensive physiotherapy delivered at the optimal phase of injury recovery. In this situation early risk identification is used to implement actions that are aimed to address barriers to RTW ahead of time.

Evidence For Risk Factor Identification

The evidence to support risk factor identification is best described as incomplete [6, 7, 8, 18]. There is a large body of evidence around what factors may have a role in prediction of outcomes in worker's compensation claims. As a result, theoretical knowledge around what factors are important in risk identification is high, and a large number of tools exists to aid in the measurement of a number of these constructs [4, 5, 8, 19]. It is clear from the evidence base that injury specific, work specific, individual specific and scheme specific factors [Table 1] all have a part to play in the identification of high risk claims [20].

It is clear from the evidence base that injury specific, work specific, individual specific and scheme specific factors all have a part to play in the identification of high risk claims.

However, the evidence around implementation of risk identification processes is weak at best [6, 7]. To the authors' knowledge only one example allowing the evaluation of the impact of screening coupled with intervention exists in current literature, and this example is specific to low back pain in a primary care context in the United Kingdom [21]. A further example of the limitations of current research is that seven different studies applying the same screening tool to identify psychosocial risk factors in musculoskeletal injury (the Örebro Musculoskeletal Pain Questionnaire—OMPQ) used seven different scores to indicate whether specific intervention was needed [8]. When it comes to the practical implementation of risk factor identification, there is a lack of evidence to directly guide practice.

When it comes to the practical implementation of risk factor identification, there is a lack of evidence to directly guide practice.

In the absence of clear indications for practice, existing evidence must be adapted to match the context in which it is to be applied. The method of collection, timing and interpretation of the information should reflect characteristics such as operational structures, experience and skill level of people involved and infrastructure available to inform risk-based intervention [12]. Best practice risk factor identification will therefore look different according to jurisdiction. What is relevant in one scheme may not be in another, and an approach that is successful in one jurisdiction may not be effective in another. Therefore, it is essential to analyse and understand the characteristics of the system within which risk factor identification and intervention is to be applied. At a minimum, an understanding of the Scheme Factors Influencing Risk Factor Identification [Appendix 1] and how they may be relevant to a specific context is required.

The method of collection, timing and interpretation of the information should reflect characteristics such as operational structures, experience and skill level of people involved.

Known Risk Factors For Delayed RTW

Risk factors for delayed RTW fall into four domains: injury, work, individual and scheme specific elements [1]. Each domain consists of different categories that vary in their influence on RTW, most suitable timing for collection and most feasible method of capture. Table 1 lists the categories of risk factors in each domain. Appendix 2 contains a more detailed table outlining factors in each domain known to have potential to predict delayed RTW, and notes the potential availability of information about those factors.

TABLE 1 RISK DOMAINS AND FACTORS

Domain	Categories of information	Impact on RTW
Injury specific	***Diagnosis***	Some conditions require longer periods of work absence, e.g. mental health conditions
	Severity	Severe conditions (e.g. involving high levels of pain) are associated with a longer time to RTW
	Co-morbidities	Co-morbidities can increase recovery time and delay RTW
	Health professional factors	Practitioners who apply an evidence based approach and have an occupational focus can help facilitate timely and safe RTW
Work specific	***Employer track record***	Past experience of positive RTW processes may facilitate the process again
	RTW capability	Having a range of suitable duties available and an experienced RTW coordinator facilitates RTW
	Workplace culture	A culture that supports recovery at work is likely to speed RTW and return to usual duties
	Nature of job tasks	Physically and psychologically demanding work can be associated with a delayed RTW
	Nature of employment	Part time or casual workers can have a delayed RTW due to uncertainties around entitlements and access to supports
	Employer/worker relationship	A relationship of trust between employer and worker facilitates timely and safe RTW
Individual specific	***Demographics***	A number of factors impact time taken to RTW, for example older age and female gender are associated with a longer RTW
	Biopsychosocial	An individual's beliefs, recovery expectations and mental health can speed or delay RTW, as can general health behaviours
	Prior history	Having made previous claims is associated with an increased time to RTW

TABLE 1 RISK DOMAINS AND FACTORS

Domain	Categories of information	Impact on RTW
Scheme specific	***Communication***	When communication is clear and consistent across stakeholders RTW is facilitated
	Timeliness	Delays in decision making and access to treatment can delay RTW
	Perceived fairness	Disputes around decisions made tend to delay recovery and RTW
	Continuity	Having multiple case managers is associated with higher levels of dissatisfaction with claim management, impacting motivation to RTW
	Scheme design	Differences in worker's compensation schemes' RTW outcomes have been identified
	Scheme culture	Most schemes encourage RTW as soon as possible

Scheme specific elements are common to all claims and reflect the environment in which claims are managed [20, 22]. Information related to these factors and their impact on claim outcomes is gathered via internal analysis of organisational function.

Phase-based Approach to Claims

For the purposes of this Statement, a claim will be considered to consist of four key phases [Figure 1]—

1. Pre-claim
2. Liability determination
3. Claim management—Divided into early, mid and late sub-phases
4. Post-claim

Across these phases there are specific decisions or actions required in the management of individual claims. Each phase and the related decision/action points are described in Table 2.

Figure 1 Phase-based description of the life of a claim

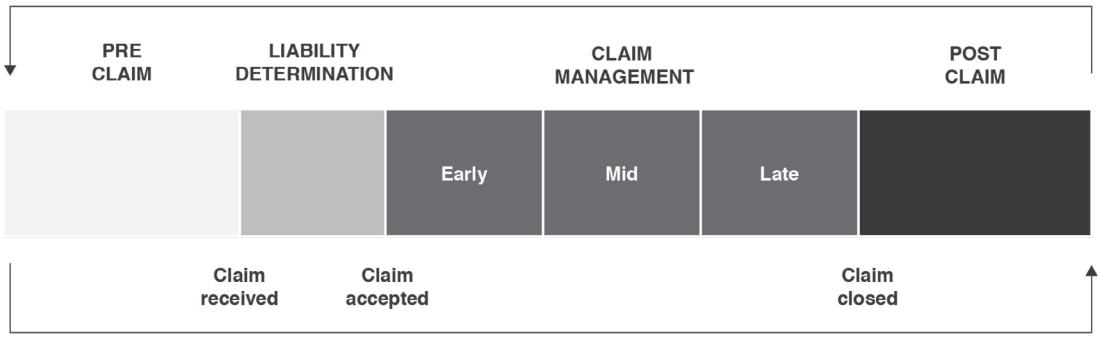


TABLE 2 KEY ACTION POINTS FOR PHASES OF A CLAIM

Phase	Key actions	Description
Pre-claim		Prior to a claim being made there are factors present that have the potential to influence claim outcomes. For example, worker age, industry type and employer past claims history and levels of support for injured workers are known to influence time to RTW [1, 2, 20, 23].
Liability determination	1. Accept, deny or seek further information	When a claim is made, liability must be determined. Delays in this decision can impact RTW [1, 2, 20, 23].
	2. Resource allocation—application of a management model matched to the level of input likely to be required.	Information present at claim determination may be used to determine further management approaches (e.g. identification of low, medium and high input claims).
Claim management—*Early (1—4 weeks)**	1. Determine appropriate service provision (responsive)	Early case management aims to ensure appropriate information has been gathered and steps are in place to encourage recovery and return to work as soon as possible.
Claim management—*Mid (4 weeks +)**	2. Determine effectiveness of current service provision	Post the early identification period, changes in risk factors can indicate that different services may be required to achieve RTW [17].
	3. Determine appropriate proactive service provision	Risk factor identification can inform proactive case management with the goal of providing early and appropriate intervention. Interventions applied within 6 to 12 weeks after injury demonstrate greatest potential in preventing secondary complications [11, 24].
Claim management—*Late*	4. Determine approach to claim closure	A claim may be closed via different pathways (e.g. RTW, assessment of permanent impairment, termination of the claim). The late phase tends to focus on administrative aspects that are required to achieve closure of the claim [14].
Post-claim		Throughout the course of the claim information has been gathered that can be utilised to improve future claim management processes [14].

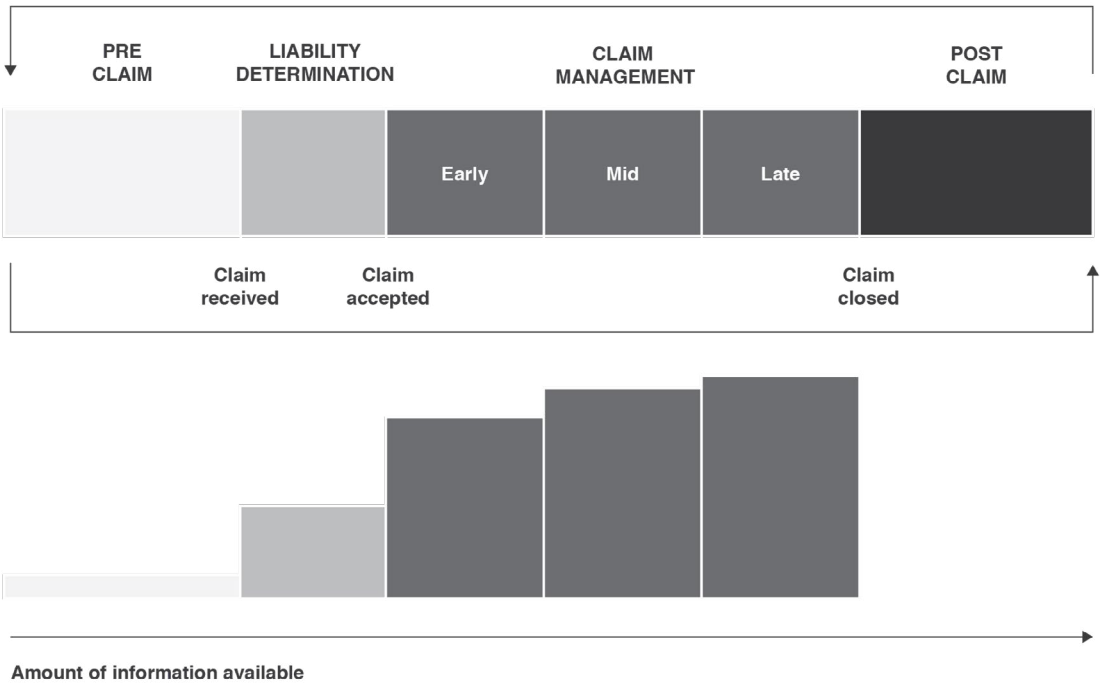
** From date of injury*

Information Availability

The same phase-based model can be applied to describe the nature of information available related to a claim over time [Figure 2]. As a claim progresses more information becomes available to guide decision making. The two large increases in the amount of information that can be collected occur when the claim is first made and when initial contacts are made with key stakeholders (the injured worker, employer and treating practitioners) [14]. Throughout the claim, information continues to be collected and by claim closure there is comprehensive data available. Some of this information can then be applied in the pre-claim phase for new claims.

Figure 2 Information availability

Claim phase and information availability. Information related to a claim is gathered in a cumulative fashion, with two large increases in information availability around claim submission and early claim management phases.



Administrative data is easily collected and provides indications of key risk factors without necessarily providing depth of information on that factor.

The majority of information that is easily accessible for compensation insurers is administrative in nature.

The nature and source of the information can vary over the life of a claim. Initially information is available predominantly in the form of administrative data. This data is easily collected and provides indications of key risk factors without necessarily providing depth of information on that factor. For example, an injured worker's home address may indicate socioeconomic factors but does not provide detail on individual circumstances. The majority of information that is easily accessible for compensation insurers is administrative in nature. Comprehensive information is commonly stored in individual case files, but it is typically not captured systematically and is difficult to retrieve, particularly on a large scale.

Comprehensive information is commonly stored in individual case files, but it is typically not captured systematically and is difficult to retrieve.

As contact is made with key stakeholders in the claim, there are opportunities to gather 'comprehensive' information. This information contains greater depth and is potentially most useful in risk factor identification, but is more complex to collect, record and interpret than administrative data. For example, a conversation with an injured worker may reveal negative attitudes to return to work, but this is difficult to record in a manner that captures the important factors behind a worker's reluctance to return to the workplace. It is a challenge for insurers to make the most of the comprehensive information gathered as part of a compensation claim.

Information related to domains of risk factors differ according to the phase of a claim as outlined below.

Pre-claim

There is data which can inform the management of a claim that can be available prior to a claim being made [Table 3]. The information available in this phase is typically administrative in terms of what exists in databases held by the insurer. Some comprehensive information may be available in the form of case manager experience, but this may not be accessible to all key people involved in the management of the claim. Although it cannot be actioned until a claim is accepted, ease of access to this data in the earliest stages of claim management can facilitate risk factor identification, where modelling of existing claim information can be used as a guide to interpret pre-claim information. The level and amount of data available is highly dependent on an organisation's approach to data collection and the level of modelling previously applied.

TABLE 3 INFORMATION AVAILABLE IN THE PRE-CLAIM PHASE

Pre-claim	Type of information	Usual source of information
Injury specific	Previous RTW outcomes of health providers	Administrative
	Health provider experience and capacity	
Work specific	Employer past history of claims and support for injured workers	Administrative
	Employer RTW capacity	
	Nature of work	
Individual specific	Demographic information	Administrative
	Age, gender	
	Geographical location	
	Prior claims history	

Claim Determination Phase

The claim determination phase is usually short provided the requirements to lodge a claim have been fully completed in a timely fashion and there are no discrepancies around the circumstances of the injury. The main aim of this phase is to determine whether the claim should be accepted, whether further details are required to make a liability decision or the claim should be denied.

The secondary action in this stage is typically allocation of the claim approach. This may be based on different characteristics of the claim, such as the injury, industry type or a determination of the likely level of intervention required in the handling of the claim [14].

Claim determination is typically performed based on administrative information [Table 4]. Where clear decisions are unable to be made, further information may be sought to clarify key information. The added information is similar in nature to comprehensive information depending on the level of clarification required to determine liability.

TABLE 4 INFORMATION AVAILABLE IN THE CLAIM DETERMINATION PHASE

Claim determination	Type of information	Usual source of information
Injury specific	Injury description/diagnosis	Administrative (may require comprehensive follow up)
	Injury severity	
	Mechanism of injury	
	Health provider experience and capacity	
Work specific	Employer past history of claims and support for injured workers	Administrative (may require comprehensive follow up)
	Employer RTW capacity	
	Nature of work	
	Nature of employment	
Individual specific	Demographic information	Administrative
	Age, gender	
	Geographical location	
	Salary details	
	Prior claims history	

Claim Management Phase

Information in the preceding claim phases that has not been already been ascertained should be gathered as early in the claim as is feasible. The early claim management phase represents an opportunity to collect comprehensive information on a range of factors that may impact the course of a claim and to guide appropriate service delivery [Table 5] [25].

There is an identified therapeutic window of 6 to 12 weeks post injury. This time frame strikes a balance between intervening where it is not required and acting early enough to potentially avoid chronic complications.

There is an identified therapeutic window of 6 to 12 weeks post injury for a range of conditions when interventions are likely to have their greatest influence on RTW. This time frame strikes a balance between intervening where it is not required and acting early enough to potentially avoid chronic complications [11, 24].

Throughout the claim management phase risk factors should be systematically documented and monitored to identify both the emergence of new factors and changes to information previously collected. Where a model of resource allocation has been applied (such as low, medium and high input approaches), ongoing monitoring should identify whether the management approach and interventions applied are still appropriate for the risk factors identified in the claim [17].

Throughout claim management risk factors should be systematically documented and monitored to identify both the emergence of new factors and changes to information previously collected.

A key opportunity in the early claim management phase exists related to the collection of biopsychosocial factors, such as an individual's recovery expectations and attitudes to RTW [2, 20]. Case managers often report knowledge of these aspects after contacts with the injured worker, however consistently recording this information can be challenging and time consuming. A range of validated questionnaires exist that are suited to capture this type of information may be used in place of, or in conjunction with, conversational approaches [8, 18].

A key opportunity in early claim management exists related to the collection of biopsychosocial factors.

TABLE 5 INFORMATION AVAILABLE IN THE CLAIM MANAGEMENT PHASE

Claim management	Usual source of information	Usual source of information
Injury specific	Detailed injury description/diagnosis	Administrative and comprehensive
	Detailed injury severity	
	Co-morbidities	
	Health provider quality and capacity	
Work specific	Detailed employer RTW capacity	Administrative and comprehensive
	Detailed nature of work	
	Workplace culture	
Individual specific	Detailed demographic information	Administrative and comprehensive
	Biopsychosocial characteristics	

Post-claim Phase

Over the life of a claim a significant amount of information is compiled [Table 6]. This information can be applied to the pre-claim phase for future claim activity. Some of this information will be more general in nature (e.g. related to the employer's RTW capacity) and some will be more specific to the individual (e.g. previous claim history for the injured worker should another claim occur). The depth of information collected over the life of a claim can make it difficult to identify key factors to feed forward into early phases of new claims.

TABLE 6 INFORMATION AVAILABLE IN THE POST-CLAIM PHASE

Post-claim	Usual source of information	Usual source of information
Injury specific	Inform co-morbidities in future claims	Administrative and comprehensive
	RTW experience and knowledge of treatment providers involved	
	Health provider quality and capacity of those involved	
Work specific	Updated employer track record	Administrative and comprehensive
	Employer RTW capacity and experience	
	Updated workplace culture	
Individual specific factors	Prior claims history	Administrative and comprehensive
	Biopsychosocial characteristics (e.g. recovery beliefs) that may impact future claims	

Risk Factor Identification and Intervention

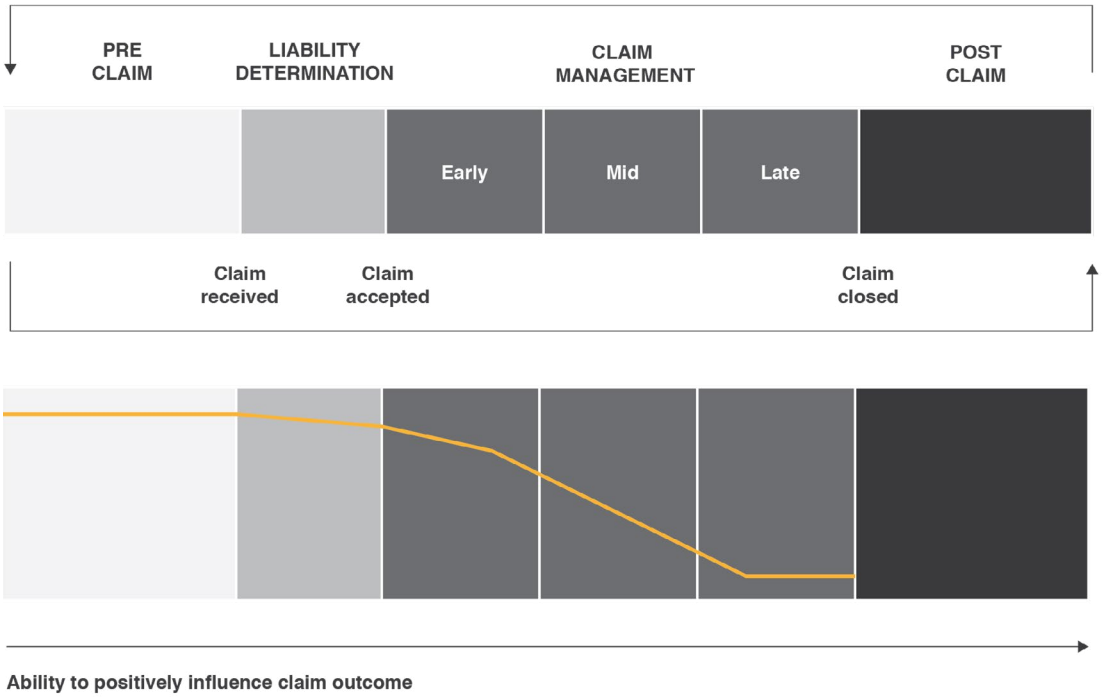
Risk factor identification aims to inform effective intervention. The likelihood of RTW diminishes the longer a worker is absent from work [11, 24], and interventions are shown to be less effective once conditions are considered chronic [Figure 3]. Strong evidence indicates that many interventions have the greatest potential to positively influence outcomes when applied between 6 and 12 weeks of injury. This suggests that the information required to inform proactive service delivery should be collected, interpreted and linked to action by 6 weeks post injury.

Information required to inform proactive service delivery should be collected, interpreted and linked to action by 6 weeks post injury.

While some risk factors for RTW are non-modifiable, they can guide interventions to increase likelihood of RTW. For example, where an injured worker lives determines proximity to health services and could be used to identify when home-based treatment may allow for earlier intervention [22]. In general, multi-domain interventions which include health-focused, service coordination and work modification components are likely to be more effective than single domain interventions [26].

Figure 3 Ability to positively influence claim outcome

The longer the duration of a claim the more difficult it becomes for intervention to achieve better outcomes.



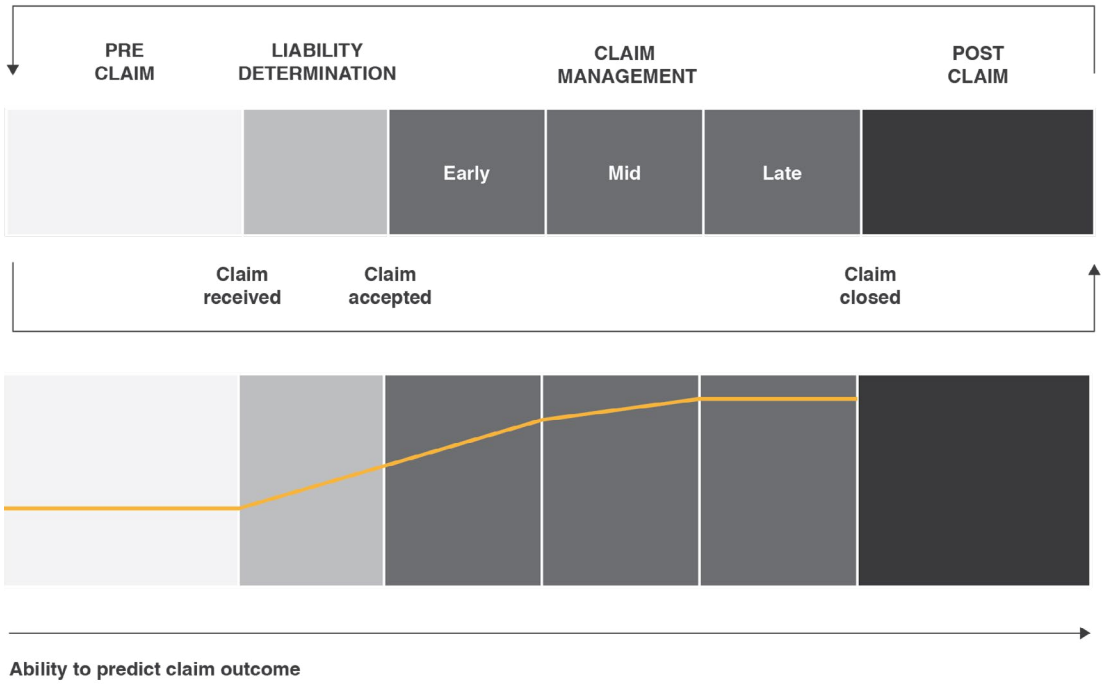
Prediction of Claim Outcome

The premise behind collecting information on risk factors for delayed RTW is to predict which claims are likely to have a poor outcome. This enables intervention in a timely manner to achieve the best possible outcomes. The majority of worker's compensation claims are satisfactorily resolved [14], however risk factor identification aims to identify the small proportion of claims that are ongoing and consume a large amount of resources with corresponding poor outcomes for the injured worker. The ability to predict claim outcomes increases with time and the amount of information collected related to the claim [Figure 4]. Since the ability to positively intervene decreases in the same time frame, risk factor identification must balance the ability to predict likely outcomes with the time frame for effective intervention. Evidence suggests the optimal time for a range of interventions is between 6 and 12 weeks after injury.

Risk factor identification aims to identify the small proportion of claims that are ongoing and consume a large amount of resources with corresponding poor outcomes for the injured worker.

Figure 4 Ability to predict claim outcome

As a claim progresses the outcome can be predicted with greater certainty.



Risk factor identification must balance the ability to predict likely outcomes with the time frame for effective intervention.

Methods and Timing of Information Collection

Some information related to the injury and work specific risk factor domains is collected as part of routine practice. Most commonly this is administrative level information that is collected in a database held by the insurer. This information is usually easy to collect and lends itself to automated processes of data entry and retrieval. Use of this information in risk factor identification usually does not represent a significant drain on resources used to manage claims.

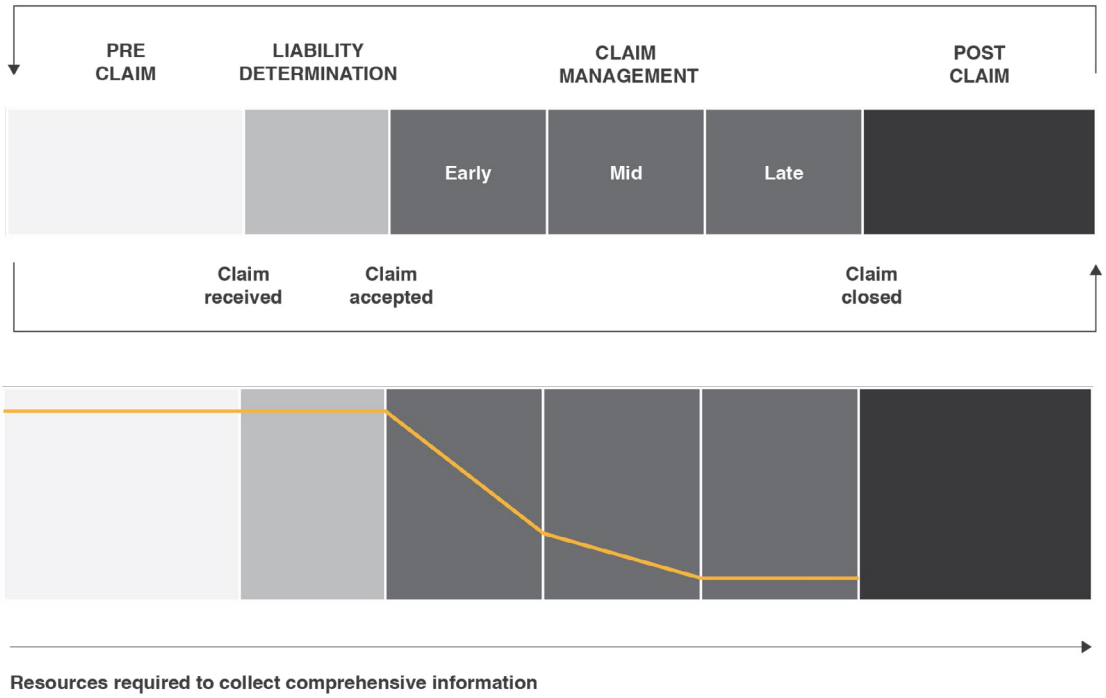
However, gathering comprehensive information requires significant time resources to complete [14]. Whether the method applied is conversational over the phone, face to face with a key stakeholder or completion of a questionnaire, comprehensive data gathering costs time. Conservational methods present the greatest depth of information, but require the most skill to conduct, record and interpret. At the other end of the spectrum, surveys or questionnaires are similar to administrative data, where responses are easily stored and retrieved. Some risk factors are suited to survey/administrative methods of collection, whereas others, such as factors related to individual beliefs, require greater resources to capture the required information. Consideration must also be given to privacy legislation and ensure only information that is relevant to the management of a claim is collected.

Risk factor identification requires information to be collected for the cases where it can inform appropriate intervention.

A key element to be considered in information collection approaches is related to the timing of information capture [Figure 5]. Gathering comprehensive information on all claims entering the system represents a huge undertaking, which for the majority of claims would make no difference to how the claim is managed or the outcomes. Collecting comprehensive information when the best opportunity to influence outcomes has passed (i.e. beyond 12 weeks after injury) also represents wasted resources. Risk factor identification requires information to be collected for the cases where it can inform appropriate intervention.

Figure 5 Resources required to collect comprehensive information

Claim phase and the resources required to capture comprehensive information for all claims.



Striking a Balance in Risk Factor Identification

To serve the two key purposes of risk factor identification (resource allocation and appropriate service delivery), a balance is required between the timing of information availability, predictability of claim outcomes, the ability to intervene in order to positively influence outcomes and the resources required to collect the information required to inform appropriate action. This presents two key opportunities for risk factor identification to guide management of a case and monitoring of progress [Figure 6]—

A balance is required between the timing of information availability, predictability of claim outcomes, the ability to intervene in order to positively influence outcomes and the resources required to collect the information required to inform appropriate action.

1. During liability determination to determine resource allocation. Risk factor identification can be applied to identify the most appropriate method of management to be applied to the claim (e.g. allocation of low, medium and high input cases).
2. During early case management to ensure that the most appropriate services are delivered during the period where they are likely to have the greatest positive influence on outcomes. This is most likely to be in the form of proactive service delivery.

The information available at these two points necessitates different approaches to risk factor identification. In the first instance, information is predominantly administrative and best used to, for example, readily identify low input and high input claims [14]. Provided mechanisms exist for monitoring of risk factors to allow movement between strategies for case management streams, appropriate information can be drawn from data available without significant requirement for collection of comprehensive information.

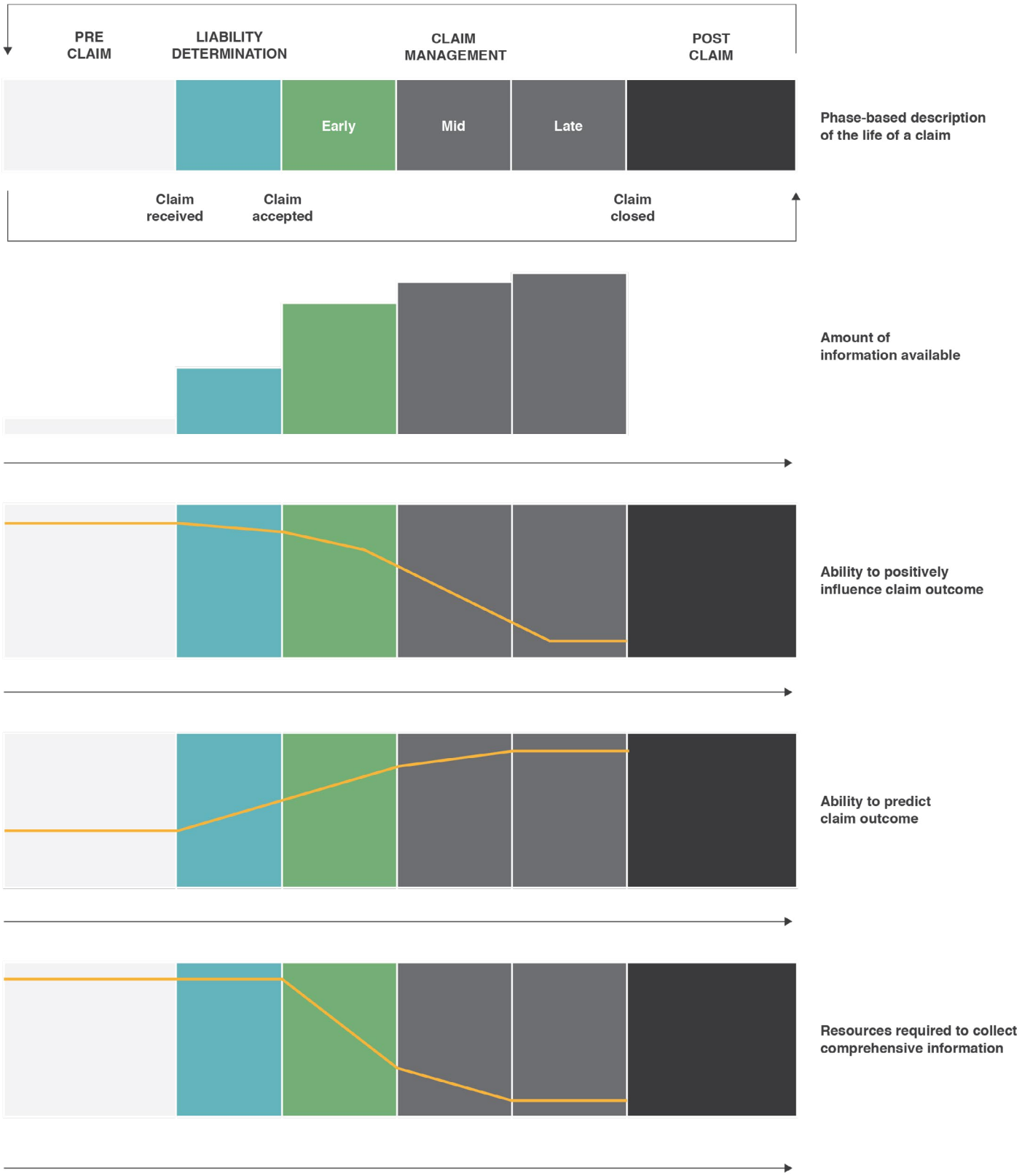
The second phase requires comprehensive information to be collected related to each domain of risk for delayed RTW. The aim of this process is to collect and interpret sufficient information to guide appropriate action throughout the 6 to 12 week period of a claim when interventions are likely have greatest impact [11, 24].

Figure 6 Resources required to collect comprehensive information

Balancing tensions highlights two key points for risk factor identification:

- During liability determination to guide allocation of resources for case management.
- During early case management to ensure appropriate service delivery during key recovery periods.

Beyond these two points ongoing monitoring of risk factors is required to ensure the approaches applied are still appropriate.



Case Studies

Case 1: Resource allocation and monitoring

SCENARIO

Richard, a 32 year old male accountant trips over at work at work and sustains a fractured left wrist. He is discharged from hospital with his left arm in a cast that is due to be removed after 6 weeks.

RISK FACTOR IDENTIFICATION APPLIED

Based on the information available at the time the claim was submitted, Richard's claim is likely to only require low input from a case management perspective. As a young male working in a low risk industry with a clearly diagnosed condition and a clear recovery timeframe, it is unlikely that Richard would to benefit from in-depth case management. Therefore his claim could be allocated to a 'low input' stream where the case management focus is on expected progress of the claim, monitored by the submission of work capacity certificates from the treating practitioner and occasional contact with Richard's employer.

IMPORTANCE OF MONITORING

Occasional contact with the employer identified that Richard could return to a full role sooner if there was a reduced need to type at his keyboard. The case manager was able to identify a short term role in conjunction with the employer that allowed for a more gradual return to the typing component once Richard's plaster cast was removed.

RISK FACTOR IDENTIFICATION NOT APPLIED

A hospital admission and diagnosis of a fracture could indicate a serious injury. This could prompt a case manager to initiate several contacts with Richard, his employer and the treating practitioner in order to develop a detailed return to work plan. The case manager, realising Richard may have an impaired ability to type at his computer arranges a workplace assessment that identifies a suitable role for Richard that would permit a full return to work and gradual return to his usual work tasks.
The case manager monitors the plan with regular contacts with Richard and his employer until Richard's claim is closed.

IMPACT OF RISK FACTOR IDENTIFICATION

Both approaches achieved a positive outcome for the claim, return to work in a modified capacity until a return to pre-injury duties was possible. Applying a risk identification approach, however, consumed fewer resources to achieve a similar outcome.

Case 2: Proactive service delivery

SCENARIO

Jennifer, a 47 year old nurse injures her back at work and is told by her usual physiotherapist that she has a disc injury. Jennifer sees her GP and is given a certificate for a week off work and recommends further physiotherapy treatment.

RISK FACTOR IDENTIFICATION APPLIED

After gathering the information required to understand Jennifer's injury and her role at work, the case manager asks Jennifer to complete a psychosocial screening questionnaire to identify if there are other factors that may impact her ability to return to work. The case manager works through the Short Form Örebro Questionnaire with Jennifer and arrives at a high score of 53 out of a possible 100. Jennifer has said to the case manager that she is worried this will happen again at work, and the implications that might have for her job and her family. Based on the risks identified by the Short Form Örebro questionnaire and the conversations with Jennifer, after 3 weeks off work the case manager arranges a referral for psychological support. With ongoing psychological input alongside physiotherapy, a return to work plan is developed that aims for a partial return after 8 weeks' absence.

RISK FACTOR IDENTIFICATION NOT APPLIED

After gathering the information required to understand Jennifer's injury and her role at work, the case manager expects that Jennifer will return to work as indicated by the certificate of capacity. However, after that period a new certificate is issued for a further two weeks off work. When the third certificate is submitted the case manager contacts Jennifer and is concerned to hear that she reports the pain is not getting better. A conversation with the physiotherapist confirms that Jennifer's progress has been slow and that further treatment will focus on exercise-based therapy to strengthen in preparation for return to work. After 6 weeks of being absent from work, Jennifer is still not progressing so the case manager arranges a case conference with Jennifer, the physiotherapist and the GP, the result of which is a referral to a psychologist for help with recovery. After Jennifer's fourth appointment with the psychologist, and ten weeks after the injury, a return to work plan is developed that aims for partial return to work after 15 weeks' absence.

IMPACT OF RISK FACTOR IDENTIFICATION

Risk factor identification enabled proactive service delivery that ultimately reduced the length of time off work. The longer a complicating factor takes to become apparent to the case manager or treating practitioner involved in Jennifer's care, the longer process will take to address the condition.

Key Enablers of Risk Factor Identification

The large amount of information that becomes available throughout the management of a claim requires data management systems that allow for recording and retrieval of key information used to guide decision making. These systems must be capable of capturing and utilising administrative and comprehensive data from internal and external sources. In terms of risk factor identification, the relevant information for the decision point needs to appear in a manner that is interpretable, consistent and timely. This is important both for decision making, and for evaluation of the effectiveness of the approaches applied.

Data systems must be capable of capturing and utilising data from internal and external sources and the relevant information for the decision point needs to appear in a manner that is interpretable, consistent and timely.

Many decisions around allocation of resources lends itself to automated methods. The nature of information available at this stage is administrative, and it is appropriate to apply previous modelling in combination with specific claim information to determine an appropriate allocation of resources. Increasing the sophistication of modelling approaches used is likely to increase the accuracy of allocation, provided the information resulting from the analysis remains interpretable to the decision maker. Ensuring methods of monitoring risk factors allowing movement between models of management provides contingency for incorrect allocations and changes in claim circumstances.

The most common method applied to developing automated approaches is statistically based, identifying the combination of risk factors that provide the most accurate prediction of the outcome. This approach has the benefit of assigning weight to different factors according to observed influence on the outcome. Other approaches involve assigning arbitrary weight to factors based on industry experience or ‘gut feel’. The recommended approach to combining variables for outcome prediction involves a theoretical model underpinning the selection of potential variables, and using statistical methods to refine the approach to arrive at the best possible prediction. Existing evidence demonstrates some consistency in the factors making up such models, but the methods of combination and the relative importance of different factors is highly variable.

Later decisions around service delivery are not as suited to automated processes and often require judgement to determine the most appropriate course of action. At this point in a claim, complexity of analysis may not improve the accuracy of decision making in the absence of information collected across all domains of risks for delayed RTW. For example, it is difficult to identify whether psychological support would benefit a worker based on the injury type alone.

Existing evidence indicates that a combination of information sources and decision types will best serve risk factor identification and associated interventions. However, the best approach to combine the information types and sources is unclear. Studies evaluating the real impact of intervention based on risk factor identification are rare. As a result, the context in which the approach is to be applied should govern how information is handled to arrive at recommendations for intervention.

Best practice in risk factor identification will provide a system that applies automated and judgement-based decision making to appropriate points in a claim, arriving at evidence-based, transparent and consistent decisions made on claims.

Best practice in risk factor identification will provide a system that applies automated and judgement-based decision making to appropriate points in a claim, arriving at evidence-based, transparent and consistent decisions made on claims

Framework to Guide Risk Factor Identification

The Risk Factor Identification Guide (RFID Guide) has been developed to assist the adaptation of the evidence around risk factor identification to the context in which it is to be applied in order to guide intervention. The framework can be used to clearly describe existing risk factor identification processes and may lead to detection of weak points in current practice. Alternatively, the framework can be applied in the planning of new risk factor identification processes to ensure appropriate consideration is given to each step from information collection to monitoring the effects of action.

The first element, Collect, describes the nature of the information used to identify risk of poor outcome. Clearly identifying the purpose of risk factor identification should guide decisions related to what is collected and when. The second element, Interpret, describes the output and meaning of the risk factor identification process and how the output is connected to intervention. The Action element then describes the steps taken to apply intervention based on the risks identified. The final element, Review, emphasises that risk factor identification processes should not be static or occur at a single point in time. A full description of each element of the RFID Guide appears in Appendix 3.

TABLE 7 RISK FACTOR IDENTIFICATION GUIDE

RFID Guide	
Collect	Who is the information being collected on?
	What is the information being collected for?
	What information is collected?
	When is information collected?
	How was it collected?
	Who is it collected by?
Interpret	What is the output?
	Who interprets the output?
	What is needed to link output to action?
Act	Who initiates action?
	When does action commence?
	What resources are needed for action?
Review	Has the collected information changed?
	Does new information need to be gathered?
	Is the original interpretation appropriate?
	Has the action been effective and should it continue?

The RFID Guide aims to describe the context-specific factors that should guide decisions around the implementation of a risk factor identification process to guide intervention. Once contextual factors have been clearly identified, what is known from existing evidence can be applied to arrive at a process that is more likely to be implemented successfully. For example, the Collect questions can assist in identifying which of 100+ existing validated questionnaires will best serve the purpose of risk factor identification. Understanding how the information collected must be interpreted and by whom can further narrow down the field to arrive at an option best matched to the context for successful application.

The RFID Guide will be applied to the assessment of current WorkCover Queensland practice, and in the design of the future approach to risk factor identification and intervention that forms the primary goal of the Recovery Blueprint project.

References

1 Steenstra IA, Munhall C, Irvin E, Oranye N, Passmore S, Van Eerd D, et al. Systematic Review of Prognostic Factors for Return to Work in Workers with Sub Acute and Chronic Low Back Pain. J Occup Rehabil. 2016.

2 Cancelliere C, Donovan J, Stochkendahl MJ, Biscardi M, Ammendolia C, Myburgh C, et al. Factors affecting return to work after injury or illness: best evidence synthesis of systematic reviews. Chiropr Man Therap. 2016;24(1):32.

3 Hemingway H, Croft P, Perel P, Hayden JA, Abrams K, Timmis A, et al. Prognosis research strategy (PROGRESS) 1: a framework for researching clinical outcomes. BMJ. 2013;346:e5595.

4 Riley RD, Hayden JA, Steyerberg EW, Moons KG, Abrams K, Kyzas PA, et al. Prognosis Research Strategy (PROGRESS) 2: prognostic factor research. PLoS Med. 2013;10(2):e1001380.

5 Steyerberg EW, Moons KG, van der Windt DA, Hayden JA, Perel P, Schroter S, et al. Prognosis Research Strategy (PROGRESS) 3: prognostic model research. PLoS Med. 2013;10(2):e1001381.

6 Haskins R, Osmotherly PG, Rivett DA. Validation and impact analysis of prognostic clinical prediction rules for low back pain is needed: a systematic review. J Clin Epidemiol. 2015;68(7):821-32.

7 Hingorani AD, Windt DA, Riley RD, Abrams K, Moons KG, Steyerberg EW, et al. Prognosis research strategy (PROGRESS) 4: stratified medicine research. BMJ. 2013;346:e5793.

8 Iles RA, Bayyavarapu S, Gibson K, Bell E. Identifying client needs: worldwide evidence review. Institute for Safety, Compensation and Recovery Research; 2017. Report No.: 174.

9 Reilly BM, Evans AT. Translating clinical research into clinical practice: impact of using prediction rules to make decisions. Ann Intern Med. 2006;144(3):201-9.

10 Wallace E, Uijen MJ, Clyne B, Zarabzadeh A, Keogh C, Galvin R, et al. Impact analysis studies of clinical prediction rules relevant to primary care: a systematic review. BMJ Open. 2016;6(3):e009957.

11 Palmer J, Feyer A, Ellis N. Best Practice Framework for the Management of Psychological Claims Project: Evidence Review and Examples of Innovation. Melbourne: SuperFriend; 2015.

12 SuperFriend. Taking Action: a best practice framework for the management of pscyhological claims. Melbourne: SuperFriend; 2015.

13 Wasiak R, Young AE, Roessler RT, McPherson KM, van Poppel MN, Anema JR. Measuring return to work. Journal of occupational rehabilitation. 2007;17(4):766-81.

14 Iles RA, Long D, Bayyavarapu S, Stewart F, Barker S. An integrated and customised approach to addressing TAC client needs and improving client outcomes: a state analysis of current thinking and emerging practices. Melbourne: Institute for Safety, Compensation and Recovery Research; 2017. Contract No.: 174.

15 Gardner BT, Pransky G, Shaw WS, Hong QN, Loisel P. Researcher perspectives on competencies of return-to-work coordinators. Disabil Rehabil. 2010;32(1):72-8.

16 Pransky G, Shaw WS, Loisel P, Hong Q, Désorcy B. Development and validation of competencies for return to work coordinators. Journal of occupational rehabilitation. 2010;20(1):41-8 8p.

17 Linton SJ, Gross D, Schultz IZ, Main C, Cote P, Pransky G, et al. Prognosis and the identification of workers risking disability: research issues and directions for future research. J Occup Rehabil. 2005;15(4):459-74.

18 Gross DP, Armijo-Olivo S, Shaw WS, Williams-Whitt K, Shaw NT, Hartvigsen J, et al. Clinical Decision Support Tools for Selecting Interventions for Patients with Disabling Musculoskeletal Disorders: A Scoping Review. J Occup Rehabil. 2016;26(3):286-318.

19 Nastasia I, Coutu MF, Tcaciuc R. Topics and trends in research on non-clinical interventions aimed at preventing prolonged work disability in workers compensated for work-related musculoskeletal disorders (WRMSDs): a systematic, comprehensive literature review. Disabil Rehabil. 2014;36(22):1841-56.
20 Gross DP, Bostick GP, Carroll LJ. Risk Identification and Prediction of Return to Work in Musculoskeletal Disorders. In: Schultz IZ, Gatchel RJ, editors. Handbook of Return to Work. Handbooks in Health, Work, and Disability. 1. Boston: Springer; 2016.
21 Hill JC, Whitehurst DG, Lewis M, Bryan S, Dunn KM, Foster NE, et al. Comparison of stratified primary care management for low back pain with current best practice (STarT Back): a randomised controlled trial. Lancet. 2011;378(9802):1560-71.
22 Bartys S, Frederiksen P, Bendix T, Burton K. System influences on work disability due to low back pain: An international evidence synthesis. Health Policy. 2017;121(8):903-12.
23 Laisne F, Lecomte C, Corbiere M. Biopsychosocial predictors of prognosis in musculoskeletal disorders: a systematic review of the literature (corrected and republished) *. Disabil Rehabil. 2012;34(22):1912-41.
24 Frank J, Sinclair S, Hogg-Johnson S, Shannon H, Bombardier C, Beaton D, et al. Preventing disability from work-related low-back pain. New evidence gives new hope--if we can just get all the players onside. Canadian Medical Association Journal. 1998;158(12):1625-31.
25 Steenstra IA, Franche RL, Furlan AD, Amick B, 3rd, Hogg-Johnson S. The Added Value of Collecting Information on Pain Experience When Predicting Time on Benefits for Injured Workers with Back Pain. J Occup Rehabil. 2016;26(2):117-24.
26 Cullen KL, Irvin E, Collie A, Clay F, Gensby U, Jennings PA, et al. Effectiveness of Workplace Interventions in Return-to-Work for Musculoskeletal, Pain-Related and Mental Health Conditions: An Update of the Evidence and Messages for Practitioners. J Occup Rehabil. 2017.
27 Casey P, Cameron I. Principles of Best Practice in Occupational Rehabilitation for AIA Australia. AIA Australia; 2014.

Appendix 1—Scheme Factors Influencing Risk Factor Identification

This section is informed by key documents examining the context in which claim management occurs [11, 12, 22, 27].

A worker's compensation claim is triggered by an incident or series of incidents that cause injury to an employee that is situated in a broader sociocultural, economic and geographical context. The relationship between the injured person and the insurer intersects within these contexts.

The context around worker's compensation, injury, return to work and recovery is complex, with RTW embedded in a multitude of factors. Scheme administrators have varying amounts of influence over these factors. These include: the legislative environment; the healthcare system and availability of health providers; the employment environment; family and community responsibilities and support; as well as individual and societal norms, beliefs and practices.

Key principles that have been identified in the literature and by industry experts as relevant to creating best practice environments for RTW include:

- Staged return to work as an important part of the injury recovery journey, rather than full recovery being a precondition for RTW
- The value of a case management approach to claims management
- The importance of timeliness in all aspects of claim management
- The central importance of clear and open communication at all stages of claims management
- Continuous improvement, through evaluation, quality assurance and 'intelligent failure' (learning from mistakes)
- Effective use of data analytics and automation
- Adopting a biopsychosocial (rather than medicalised) approach to care
- Evidence based health principles
- Health literacy for claims managers
- RTW literacy for health providers and employers (e.g. understanding of the health benefits of RTW)

There are areas in which contradictions and/or competing interests add to the complexity of predicting and responding to barriers to RTW. There are no formulaic answers to these complexities, however it is important to be aware of them, to develop strategies that acknowledge multiple interests, and to be clear about priorities.

Balancing provision of care with economic viability is a central tension within the industry. Lack of transparency around this balance is a potential contributor to perceptions of unfairness, which have been shown to be contributing factors to secondary mental illness and to engaging legal representation.

Some organisations are tasked with providing services for multiple clients or customers, sometimes with competing interests. For example, a case manager has responsibility to the injured person making a claim, the employer paying the insurance premium, the taxpayers funding the scheme, and potentially other stakeholder groups. Mapping the overlaps and conflicts of interest(s) between multiple stakeholders, and acknowledging potential competing interests, is likely to more accurately reflect the cost/care considerations of the industry, and therefore more likely to provide realistic, achievable outcomes.

Although not always openly articulated, the principles of accountability and transparency are reflected in many of the areas of accepted best practice in this space. There should be clearly defined areas of responsibility as well as effective communication channels between stakeholders.

Appendix 2—Predictive Factors for Delayed RTW

This table outlines factors in each domain that are known to have the potential to predict delayed RTW, and notes potential availability of information about those factors. These factors are a non-exhaustive summary of factors identified in existing literature [2, 20, 22, 23].

TABLE 8 APPENDIX—PREDICTIVE FACTORS FOR DELAYED RTW

Injury specific		
Diagnosis	The nature of the injury, the expected recovery trajectory, the worker's capacity/ incapacity as they are recovering.	• Initial diagnosis forms part of claim acceptance process. • Changes to a diagnosis or diagnosis of further conditions can occur during the life of the claim.
Severity	The severity of the injury and the extent to which it impairs the worker.	• Information about the severity of an injury forms part of claim acceptance process. • Information can emerge during the life of the claim regarding injury severity that may extend recovery time, such as further investigations revealing a need for surgery.
Co-morbidities	Other conditions that impact a worker's health, well-being, and RTW capacity. These can be as a result of the injury, existing prior to and exacerbated by the injury, or secondary to the initial injury.	• Information may be available at claim acceptance and in the early claim phase, or it can emerge during the life of the claim. • Data about commonly existing co-morbidities that can delay RTW can be available at the pre-claim stage.
Health care provider quality and capacity	Access to appropriately qualified and skilled health providers to meet the worker's needs.	• This information should be available at pre-claim stage. • Information about quality of health provision may emerge during the life of the claim, and if so should be captured as future pre-claim information.
RTW literacy of health providers	Health care provider knowledge and practice around enabling RTW. Whether they understand and support the value of graduated RTW, and document capacity rather than incapacity.	• If the health provider has treated workers who have had previous claims with a scheme, there may be information available about their RTW literacy. However, this may be sensitive information to capture and record. • Information about health provider RTW literacy may emerge over the course of the claim. If so, it should ideally both inform the current claim, and be made available for future claims at pre-claim stage.

TABLE 8 APPENDIX—PREDICTIVE FACTORS FOR DELAYED RTW

Work Specific

Employer track record	Employer behaviour can sit along a continuum from being actively engaged in best practice RTW through to being actively antagonistic towards supporting RTW best practice.	• If the employer has employees who have had previous claims with a scheme, there will be information available about their track record. • Ideally, this should be made available for future claims at pre-claim stage.
RTW capacity	This includes availability of suitable duties, having specialist RTW coordinator role(s) filled by appropriately trained staff and an understanding of RTW processes. Two key factors influencing RTW capacity are company size and industry.	• Information available pre-claim included employer size and industry. • Information should be easily available either pre-claim or early claim about presence of in-house or outsourced RTW coordination.
Workplace culture	Extent of support from the worker's peers, direct manager and executive management for graduated RTW; the level of support felt by the injured worker from their colleagues and workplace.	• If the employer has employees with previous claims there may be information available about their workplace culture, although this may be challenging to capture and record. • Information about workplace culture may emerge over the course of the claim. • Where information is available, ideally it would be made available for future claims at pre-claim stage.
Nature of work (job)	Requirements of the job, the usual skill levels of a person in that job.	• Broad information is available pre-claim, with more detailed information available in the early claim stage. • Further information is likely to emerge over the course of the claim.
Nature of employment	• Ongoing, fixed term, casual • Type of contract • Full time or part time • Sick leave entitlements	• Basic information should be available at claim acceptance. • Further information, nuances and complexities may become available in the course of the claim.

TABLE 8 APPENDIX—PREDICTIVE FACTORS FOR DELAYED RTW

Individual Specific

Demographics	Age, gender, geographical location	• Data is available at pre-claim stage on demographic risk factors • Individual information is available at claim acceptance.
Biological	Health of worker, nature of injury See also 'injury'	• Information available at claim acceptance and early claim, with further information emerging during the course of the claim.
Psychological	Mental health: the primary injury may be psychological, a physical injury may lead to secondary mental health problems, and other mental health factors may need to be taken into account. Recovery expectations, individual beliefs and attitudes can all impact RTW.	• Information may be available on claim acceptance or during the early claim period. It is most likely that it will emerge over the duration of the claim, particularly relating to individual expectations and beliefs. • Information related to psychological factors is typically not collected and recorded systematically.
Social	Family and community supports for the worker, dependents impacted by the injury, aspects of life outside of work impacted by the injury. Aspects of the injury or its consequences that carry social stigma or change the individual's role In the family or wider community.	• Information in this category may not emerge until late in the claim (if at all). • Information related to social factors is typically not collected and recorded systematically.
Claims history	Previous claims for compensation, previous legal claims related to worker's compensation. This may include engagement of legal representation.	• Previous claim information should be available pre-claim. • Where a claim has been made in other schemes, this information should be available upon claim acceptance. • Information on previous claims history may also emerge in the course of the claim.

TABLE 8 APPENDIX—PREDICTIVE FACTORS FOR DELAYED RTW

Scheme Specific

Communication	Good communication facilitates RTW; poor communication is a barrier to RTW.	• Whether all of the formal and informal processes are easily understood and documented in a manner that is accessible
Timeliness	Delays in diagnosis, treatment, service access and/or communication can all delay RTW.	• The timing of processes is appropriate given workload, decision support tools and availability of key information is available to case managers at the appropriate point in time.
Proactive	Optimal RTW can be facilitated by proactive case management.	• Case managers require appropriate skills, training and support tools to case manage proactively. Workloads should allow for proactive case management. Whether the organisation has a clear vision of what proactive case management looks like.
Continuity	Contact with multiple scheme employees is detrimental both to communication and worker experience.	• Whether there is continuity of contact with (ideally) one case manager. Processes are in place for handover where necessary and documentation allows another case manager to take over without having to recollect important information.
Perceived justice; satisfaction	Perceived injustice and/or dissatisfaction with the scheme is a potential cause of a worker exploring common law options.	• Levels of satisfaction and perceptions of justice should be systematically documented and recorded. • Areas that are known to lead to dissatisfaction and/or perceptions of injustice should be addressed where possible. • Transparency, accountability and scheme documentation should be appropriate to reduce perceptions of injustice and dissatisfaction with decisions.

Appendix 3—Risk Factor Identification Guide

TABLE 9 APPENDIX—RISK FACTOR IDENTIFICATION GUIDE

Collect	***Who is the information being collected on?***	Being clear on who the candidates for risk factor identification are is essential as it determines the overall approach to be used. For example, should information be collected for all claimants, or just those who represent a certain type of risk (such as risk of an extended claim). Collecting information across all claim will require a different approach to collection on a subset of claims.
	What is the information being collected for?	Being clear on the aim of the risk factor identification process will help determine whether the information aims to inform triage for resource allocation, identify problem claims in order to address costs or to stratify treatment approaches.
	What information is collected?	Typically risk factor identification includes some measure of psychosocial aspects (e.g. depression, recovery expectations or fear avoidance beliefs) that indicate a higher risk of poor outcomes. The inherent complexity suggests that service delivery based on information covering a single domain is not likely to be as effective as addressing multiple areas (e.g. work-related, socio-demographic and health-related factors) that may impact outcomes
	When is information collected?	Time influences many of the aspects typically targeted in risk factor identification (e.g. development of secondary psychosocial problems). Some tools used in approaches to proactive case management are developed to be applied a certain time after injury (e.g. Örebro was developed to be applied 6 weeks after injury).
	How was it collected?	Questionnaires are generally easiest to administer, but offer little flexibility in how the content is described or administered. Conversational sources offer maximum flexibility but vary in consistency. Administrative sources are restricted to the variables gathered for the purpose and often do not capture the type of information required for proactive service delivery.
	Who is it collected by?	The skill level of the person collecting the information may determine the nature of the information collected. A person who has had the opportunity to develop rapport with the individual may be in a better position to collect more sensitive or personal information.
	What resources are used in collection?	Gathering new information on all claims requires more resources compared to those who are yet to return to work after 3 or 4 weeks. Interview-based tools will provide the greatest depth of information, but take longer to administer.

TABLE 9 APPENDIX—RISK FACTOR IDENTIFICATION GUIDE

Interpret	***What is the output?***	If the output is an overall score, cut offs must be determined. At some point the result of gathering the information must be converted into a format that can be applied to determining appropriate action.
	Who interprets the output?	This may be the person who performed the scoring of a questionnaire. Treating practitioners may have the highest level of skill in terms of interpreting outcomes of an assessment, but present difficulties in ensuring the consistent application in practice. Case managers may represent consistent points of contact in order to provide proactive service delivery, but high turnover and varying ability to interpret findings may impact results.
	What is needed to link output to action?	Commencing action may require the input of another health professional. A summary of treatment to date may need to be provided as part of referral.
Act	***Who initiates action?***	A health practitioner may be able to initiate action immediately. Alternatively it may be another party, such as a case manager, who commences the required action.
	When does action commence?	Interventions for musculoskeletal conditions are suggested to be more effective in the sub-acute phase of the condition. The processes leading up to action should be of an appropriate length so that action is appropriately timed.
	What resources are needed for action?	Some interventions are more expensive than others and consideration of the resources available may determine whether the action proposed will suit other purposes.
Review	***Has the collected information changed?***	It is known that some risk factors change over time (e.g. recovery expectations) and that the change itself may be more important than the initial recording.
	Does new information need to be gathered?	Factors that were not evident earlier in the claim may become more important, potentially as a result of claim events (e.g. decisions), results of investigations or treatment not progressing as initially expected. In these cases is may be necessary to gather new or further information.
	Is the original interpretation appropriate?	In light of the progress to date and any changes in the information relevant to the claim, it may be appropriate to review the original interpretation. For example, different triggers may be required in the later stages of a claim as RTW becomes more difficult after longer work absence.
	Has the action been effective and should it continue?	Actions applied based on the original approach may not be achieving the desired results, potentially as a result of new complicating factors, or due to an inappropriate allocation of action in the first instance. It is important to review the effectiveness of actions to date, consider any new information and determine the best course of action at the current point in time.