Job Role Criteria (JRC)

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Abstract
Proactive health and injury management systems provide a framework to ensure employees are placed in roles that minimise the risk of injury/illness and promote sustainable, durable and faster recovery in the event of injury/illness. Health and injury management systems assist with identifying, analysing and ultimately mitigating injury risk in business.

Xstrata North Queensland has developed an innovative intranet based multimedia tool. As part of the health and injury management system, this tool assists in meeting our strategic objective of an 'Injury Free Safe Work Environment'.

The Job Role Criteria (JRC) was developed to meet emerging demands from the working population. This tool facilitates functional insight into the role requirements including physical, cognitive, sensory and hygiene hazard management requirements; providing human resources, medical staff, external specialists, allied health and injury management providers with an evidence base for informed decision making.

This vocational evidence base also provides insight into whether an individual employee's personal exposure limit to a hazard may be elevated to an unacceptable level, therefore increasing the individual's susceptibility to occupational health and hygiene hazards and injury risk.

The Job Role Criteria is a living document and provides ongoing opportunity to improve the quality and quantity of communication, health, rehabilitation and injury management outcomes and support internal health management systems.

Introduction
640,700 Australians experienced a work-related injury or illness in 2009-10, equating to 5.3% of the 12 million people employed during this period (Australian Bureau Statistics (ABS) 2010). The impact of work related injury is not solely borne by the worker; the workplace also experience impacts in a variety of ways. The far reaching effects of workplace injury justify the value of and commitment to workplace health and safety functions. Per capita injury statistics in the mining sector are amongst the highest when compared to other industries (ABS 2010). The most common cause of compensable injury in mining relate to muscular stress due to manual handling or repetitive movements (Mining Technology Australia 2007-8). These injuries are largely preventable. Although safety and health in the Australian mining industry could be considered acceptable when compared to international standards,

the absence of a sustained improvement in fatalities in the Australian mining industry led the Minerals Council of Australia in 1998 to identify safety and health as its number one priority (ABS 2000).

With a vision of an industry free of fatalities, injuries or diseases going into the 21st century, Xstrata has committed to pursue a number of initiatives to realise this vision. Substantial resources have been dedicated to health promotion and injury prevention strategies to ensure the wellbeing of our workforce. The Job Role Criteria (JRC) is an example of one such strategy.

This innovative, proactive injury prevention and injury management tool provides a multimedia presentation of the physical, environmental, cognitive and sensory performance components associated with each role across Xstrata's North Queensland Operations. The JRC is a living document which incorporates photographic and digital video media providing a reference for general physical and postural indications; consideration of appropriate functional role requirements; and, understanding of work environments. The outlined criteria allow consideration of vocational hazards that may present during day to day operations. Compliance with and exceedance of the outlined policy and legislation (Queensland Mining and Quarrying Safety and Health Act 1999) enables each employee to carry out employment in his or her allocated role without facing and/or creating an unacceptable level of injury risk. The effects and benefits of the JRC can be seen throughout our recruitment, health, safety, injury management and return to work processes moving us further along the road of achieving our goal of zero harm and 'Injury Free Safe Work Environments.'

Background

Xstrata is committed to provide industry leading safety and health strategies to promote the wellbeing of their workforce. This is pertinent given the inherent risks associated with open cut and underground metalliferous mining. Rather than simply complying with stipulated legislation, Xstrata aims to consider and implement innovative approaches to further manage the risk. This focus on health and safety is evident throughout Xstrata's Sustainable Development Policy, where developing and maintaining safe workplaces is a key element. Commitment to these aims is the responsibility of individuals at all levels of the organisation.

Maintaining current role specific knowledge among both new and experienced staff has historically been challenging given the variety of roles across the organisation. To address this, the development of an educational tool to enhance insight and knowledge regarding role specific requirements was undertaken. The Job Role Criteria has evolved into an education tool to improve assessments, observations, treatment and considerations relating to the daily vocational exposures of employees - thus enhancing injury prevention potential, general safety and health and rehabilitation outcomes. The JRC also complies with and exceeds the expectations of relevant legislation - particularly the Mining and Quarrying Safety and Health Act 1999 (Qld) which suggests that employers must ensure persons are not exposed to unacceptable levels of risk; and, that employees "work at the mine only if the worker is in a fit condition to carry out the work without affecting the safety and health of others".

Development

The original concept for the JRC was designed by the Xstrata North Queensland Safety & Health Department in 2001. The JRC began in hard copy format as physical and environmental criteria statements, bound in folders and provided a very basic one page written summary of specific roles within Mt Isa Mines. The document stated the role title, aim

of role, core tasks, main work area, primary equipment, and personal protective equipment (PPE) requirements. Despite good intentions the resource was not well utilised due to the lack of access, and the fact that role details were limited and quickly became outdated.

With the addition of an on site Occupational Therapist to Xstrata's Mt Isa Operations, the document transitioned to be a computer based tool to improve access. Hence, 2006 saw the JRC develop into a PowerPoint presentation. The role list broadened to cover Mt Isa Mines Copper and Zinc Operations. The resource content also expanded to include assessment of manual task risk factors (exertion, posture, repetition, movement); more detailed reference to work environment and tools/equipment; and the integration of digital images. The document, although a step forward, still presented issues with accessibility and maintenance, reducing uptake and limiting the benefit of the tool.

Over time operational roles changed, new roles developed, and the tool became outdated. It also became apparent that the resource needed to be available not only as an internal tool, but supplied to offsite specialists. In 2010 a decision was made to update the JRC, transform it into an Intranet based tool, and to greatly expand its content to provide comprehensive role descriptions. The following details the current format of the new JRC tool:

- Basic role description – role name, shifts and hours, primary tasks.
- Manual tasks risk matrix - Musculoskeletal risk assessment and quantification tool to identify the acute and cumulative injury risk associated with role participation.
- Environment – Environmental context of role participation including: psychosocial environment; work area; floor surfaces; stairs; stress/lack of control/pressure; Thermal Work Limit (TWL); vibration; ventilation; lighting; noise; and hygiene hazards. Includes photographic media to provide context for role participation.
- Equipment – tool list and characteristics (size, weight etc). Includes photographic media.
- PPE – standard requirements for designated work area. Includes photographic media.
- Cognitive and Sensory – Cognitive and sensory performance components for participation in each role.
- Video footage – 3 minute streaming clip of core tasks to provide visual insight into role demands.

These advances have transformed the Job Role Criteria into a comprehensive, interactive, user friendly and highly accessible evidence based tool that relates specifically to our operations. The JRC was also expanded to over 200 roles and includes all Xstrata's operational areas within North Queensland (Bowen Coke; Townsville Copper Refinery, Port Operation; and, Ernest Henry Mine, Cloncurry). All roles were reviewed, requiring extensive observation and analysis. The JRC development process exposed Occupational Therapist's to all operational areas and enabled them to gain extensive role based knowledge. A secondary benefit of these role observations was the ability to identify risks to workplace safety during the process and strategise solutions to eliminate or minimise these risks immediately. Throughout development, consideration has been given to ensure consistency with organisational policies, procedures and other relevant documents.

Utilisation

The JRC is an educational resource accessed by a wide audience throughout all levels of our organisation, in addition to external providers. Each user has a different application for the JRC and content has been tailored to meet these requirements. In broad terms, the primary

applications include injury prevention and injury management. The following tables outline the main user groups and their uses of the JRC.

Injury Prevention: Pre-employment	
User Group	**Means of use**
Human Resources	• Comparison of applicant data to the role being applied for ensuring a fit with past experience and qualifications. • Identification of the required pre-employment assessment process. • As a reference tool to increase understanding of the roles across the organisation.
Medical and nursing	• Identification of role specific physical, cognitive, sensory, hygiene and environmental factors ensuring tailored screening to identify areas of increased risk based on health factors that may be contraindicated to role requirements. • Health issues identified during screening are evaluated against role requirements and environmental conditions to determine a risk rating for the applicant.
Allied Health	• Identifying levels of musculoskeletal and neurological risk associated with individual roles and applicants and to tailor assessments according to criteria. • Ensures any orthopaedic or neurological issues identified can be evaluated and a level of risk determined with regard to specific role requirements.
Safety and Health	• Provides information allowing for the evaluation of the pre-employment screening undertaken and the accuracy of risk types and levels identified.
Injury Prevention: Post-employment	
User Group	**Means of use**
Human Resources	• Identification of at risk staff and ensuring appropriate Health Management Plan development, implementation and assessment as required.
Safety and Health	• Identification and addressing of high risk roles and tasks through the development of targeted health and injury prevention programs. • Identification of high risk roles with the view to conduct further targeted environmental, ergonomic and biomechanical assessment and address through the implementation of controls. • Injury and incident investigation to identify potential high risk areas, roles and tasks.
Safety and Training	• Enables the identification of high risk roles and tasks to assist in the development of new, and the evaluation of existing, safety and training materials. • Assists in the development of targeted programs and initiatives aimed at injury prevention and health maintenance.

Injury Management	
User Group	**Means of use**
Human Resources	• Provides information for intra-organisational transfers to ensure role suitability in the case of identified risk. • Identification of suitable roles in the case of decreased functional capacity as a result of illness or injury. • As a reference tool to increase understanding of the roles across the organisation.
Medical and nursing	• Greater accuracy of suitable duties and general medical restrictions due to increased knowledge of specific role and task requirements. • Increased efficacy of treatment and referral pathways with a focus on specific role and task requirements. • As a reference tool to increase understanding of the roles across the organisation.
Medical Specialist	• Information provision to specialists about the role demands of specific workers to support efficacy in vocationally focussed treatment and rehabilitation planning. • Ensures the provision of relevant information from specialists in developing suitable duties and planning for Return to Work following injury. • As a reference tool to increase understanding of the roles across the organisation.
Allied Health	• Provides information to assist in the development of functional and role specific rehabilitation and treatment plans. • Development of tailored Functional Capacity Evaluation (FCE) design ensuring tasks assessed provide accurate and relevant information with regard to workers roles. • Access to information relevant to worksite and job role assessments and reporting. • As a reference tool to increase understanding of the roles across the organisation.
Rehabilitation and Return to Work Coordination	• Development of knowledge about the inherent role and task requirements of injured workers, assisting in rapport development, communication, mutual understanding and empathy. • Assistance in the development of Suitable Duties Plans and identification of task specific recommendations. • Increased ease of communication with Supervisors and workers due to increased knowledge of role requirements. • As a reference tool to increase understanding of the roles across the organisation.

From medical clinicians to human resources and safety staff, there are significant differences in the types and complexity of the information required. In one case, an Occupational Physician may be required to determine the risk of a Timberman returning to duties following a shoulder reconstruction, where the specific postural and exertion demands must be understood to ensure that any return to duties is timely with regard to rehabilitation and progression in range of motion, muscle strength and joint stability. For these reasons, the JRC covers specific physical and postural demand information, including frequency and

repetition which are vital pieces of information required by the Occupational Physician. Despite the depth and complexity of the information available, simple interpretation of the inherent risks is also made clear by the method of presentation.

As illustrated the JRC provides numerous users the information required to assist in the prevention of injury by proactively identifying risk during the recruitment process. This is followed by providing up to date and relevant information to identify high risk roles and tasks to ensure ongoing management of injury risk. In the unfortunate instances where injury does occur, information is available to assist in rehabilitation and return to work planning and implementation, and also in the possible subsequent event of redeployment or transfer within the organisation.

Maintenance and updating

As with any tool of this type, it is important that the information provided is up to date, and that changes are made to ensure currency with best practice principles and developing knowledge. This is a constant challenge which is influenced by business needs and the allocation of resources. Site Occupational Therapists utilise ongoing day to day engagement across the organisations operational areas to monitor the accuracy and modify JRC content as identified. Individuals utilising the program are encouraged to provide feedback if changes to roles are required, new roles are formed, or problems are identified in the criteria. However consideration must be given to the fact that any change to the content and or format of the JRC must be applied across all operational areas of our business and any change must consider the depth and complexity of the information required to suit all user groups.

Strengths

The JRC has been hugely advantageous. This is particularly evident within Xstrata's medical and health areas. With the ease of access via the intranet or other electronic format, and the ease of navigation, the amount of relevant information able to be accessed has increased. This has been realised through improvements in the understanding of job role requirements as evidenced by the reports and recommendations received from treating doctors and specialists with access to the JRC. Although not available to all treating specialists, those who have been able to utilise the program demonstrate a greater understanding of the roles and working environments they are assessing against, and in the confidence with which specific functional recommendations are made. With the advantage of electronic access, the requirement for specialists to physically visit the operations has reduced as they are able to make informed decisions based on the information provided in the JRC.

Given the format of the program, dissemination to those without access to the site intranet can easily be achieved through delivery via email or mass storage device (USB, CD, DVD, etc). This results in a "plug and play" function which requires little if any background information in order to navigate and utilise the program. All JRC pages are also available in a print format which allows for dissemination in the case that computer access or the delivery of large amounts of data is not available.

The use of digital images and video streaming is a key element of the program. The provision of photographic and video evidence of role requirements clearly illustrates elements of the environment and tasks that cannot be adequately described in words. Comments from many users who simply want to get an understanding of a particular role suggest that this is the most valuable and most utilised element of the program.

Functional Capacity Evaluation is used widely in the injury management and return to work process. These assessments provide a systematic process of measuring, recording and analysing an individual's functional performance. Viewing of the JRC is a valuable tool in assisting with the design of FCE's to ensure correlation with role demands, therefore greatly increasing the efficacy of the evaluation. Development of recommendations is also improved as functional risk can be directly related to the role and specific tasks.

Limitations

Paradoxically, some of the strengths of the program can also present as limitations. This is evidenced by feedback received relating to the amount of data available and the perceived complexity that this creates. Given the wide and growing audience, information requirements continue to expand, hence the increase in content. Although this may be a legitimate limitation, the strengths presented as a result of the availability of the information are deemed to outweigh any limitation.

Identification of changes and ongoing maintenance of the program has proven challenging and time consuming. Currency of the tool is dependant on: consistent communication channels across the organisation; awareness of developments in underlying evidence; changes to industry and organisational policies and procedures; and, changes in safety, training and recruitment requirements. Despite these challenges, all efforts are made to ensure the accuracy and relevance of content.

With the comprehensivity of the information available in the JRC, it is imperative that dissemination is limited to those requiring the information and that access is controlled. Although no issues regarding the unauthorised access or use of the tool have arisen, it must be considered as a potential intellectual property risk.

Although there has been concerted effort to raise awareness of the JRC and its implications with regard to injury prevention and injury management, uptake and integration into day to day use is a gradual process requiring a concerted effort. Efforts continue in educating and advising individuals across the organisation of the potential benefits in utilising the JRC in the development and implementation of programs.

Future Directions

Although the challenges of developing and maintaining the JRC may at times seem overwhelming due to the operational contact time required, there are also numerous opportunities. Currently the program only covers Xstrata's North Queensland Zinc and Copper operations and is only available to those with intranet access across these operations. Ideally, all roles across all of Xstrata's commodity businesses globally would have a similar program available to support their injury prevention and injury management systems.

Dissemination and utilisation of the program has been successful, however there is still opportunity to broaden and normalise its use as a part of day to day operations. Not only would this make information more broadly available and impact on the delivery of safety and health strategy, it would also support the provision of feedback regarding the program ensuring continual improvement, evaluation and ongoing maintenance of the JRC.

The JRC currently provides generic hygiene information however does not describe or rate the associated health risks or influence on pre-existing conditions, relying on the presence of

this information in other formats. It has been identified that access to this information is relevant to treating medical officers in specific cases and must be made available in a user friendly format. It may be the case that a worker has presented with a respiratory condition and the treating medical officer is able to identify that the presence of particular airborne hygiene hazard significantly increases risk of exacerbation. As is obvious, this type of information, in particular circumstances, can be very important.

Conclusion

The JRC is an innovative, industry leading tool that will assist Xstrata North Queensland Operations to manage health and injury risk through new, proactive and digital strategies. From its initial development in 2001 as a simple paper based document to its current incarnation as a dynamic multimedia tool, the JRC has moved us further towards achieving our goal of zero harm. Significant opportunity exists to refine the JRC content and broaden its application across Xstrata's commodity business units globally and for the JRC to be adopted across the mining industry internationally.

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