

# **Functional Bridge**

A unique approach to Health, Injury  
Management and Wellness

Jennie Sutcliffe – Xstrata Zinc MIM

Helen Poyzer – Xstrata NQ

David Rose – Mount Isa Physiotherapy

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## Our Operations

- 1478 Employees and contractors
- George Fisher Mine – Underground
- Handlebar Hill Open Cut
- Blackstar Open Cut
- Zinc Lead Concentrator
- Lead Smelter
- Bowen Coke Works.

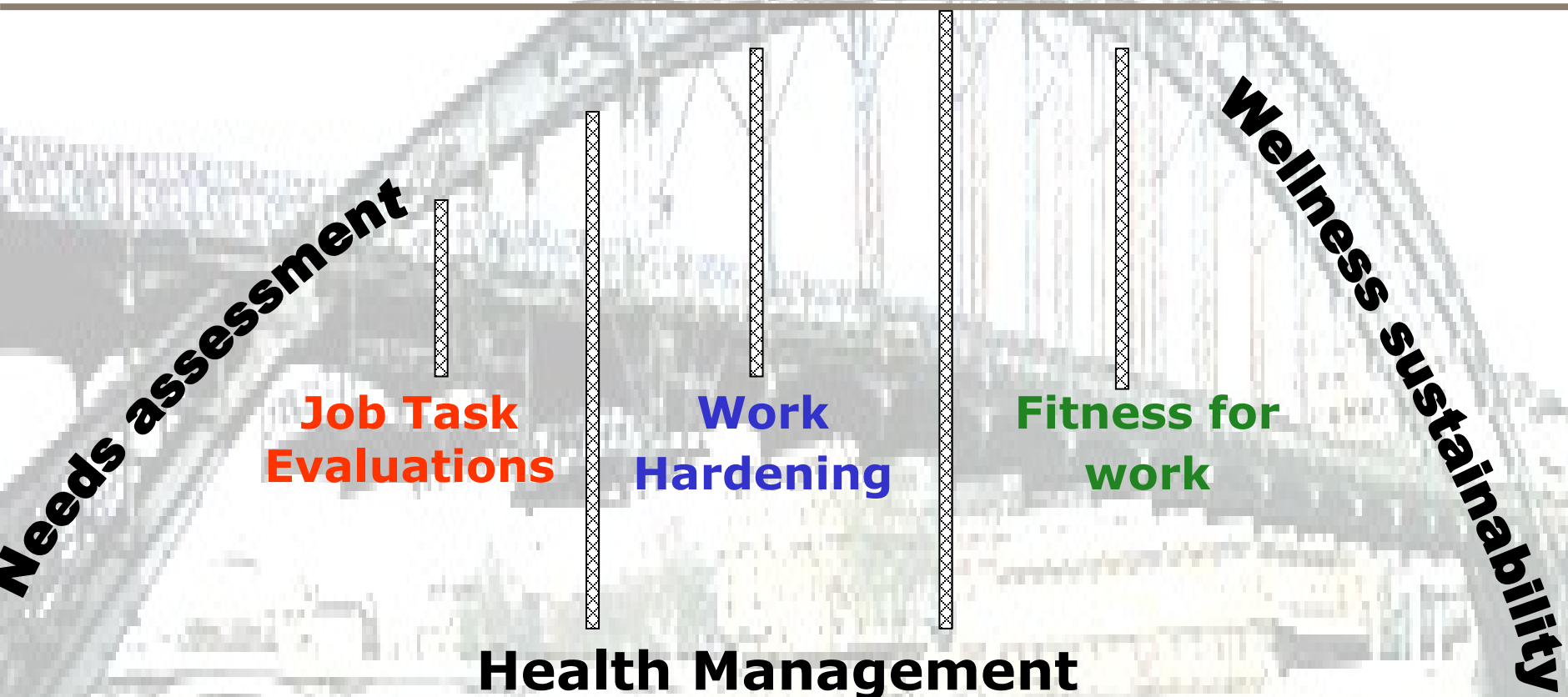




# Health Management Strategy Elements



# Functional Bridge



# Job Task Evaluation

- Function based assessments are not new to the mining industry:
  - Musculoskeletal evaluation, postural tolerance, safe maximal lifting and carrying assessments have been available for many years.
- Functional testing aims to **match the worker** to the job and job to the worker.
- The goal of **Job Task Evaluation** is to accurately **reflect the risk profile** of an individual in a proposed job role.



# Job Task Evaluation

1. Assessment of job tasks
2. Assessment of worker's overall physical capability
3. Rating of risk based on likelihood and consequence
4. Development of risk reduction strategies



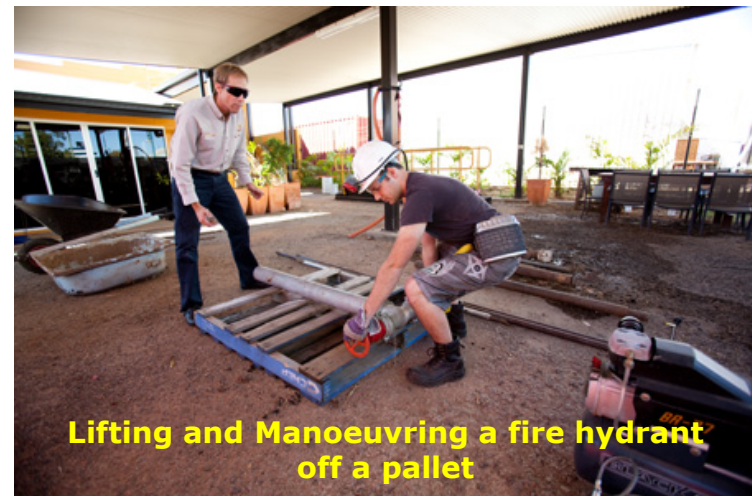
Lead smelter worker moving sulphur bags



Postural tolerance: crouching

Point of difference from  
conventional assessments

**Mining jobs are simulated  
using real mining equipment**







## Tangible benefits

- Builds a realistic picture
- Not just lift box in a clinic
- Assessor can modify/customize testing to target a worker's weakness
- Allows demonstration of compensatory strategies
- Provides valid basis for risk rating
- Instils confidence at the work place that workers are being tested



# Job task Evaluations Outcomes

## Statistics from Blackstar Open Cut Mine (BSOC)

- Low risk: 74%
- Low to medium: 13%
- Medium 10%
- High: 3%

### Injury Stats:

- Total of 41 workplace injuries reported across BSOC business unit since June 2007.
- None of these incidents involved persons previously tested with JTE'd.

# Integration: functional bridge

## Assessment for Drill and Blast Technician Role

- Prior history leg fractures from MBA
- Walks normally, no limp
- Functional testing (gravel walking pit with loads):
  - **identified knee instability on uneven ground when loaded above 22kgs**

## Outcome:

- Rated as MEDIUM RISK for Drill & Blast Tech role
- However- LOW RISK in a mining technician role – employed (truck driving)
- Health monitoring
  - Worker given home based programme of knee stability exercises to address instability identified
  - Followed up monthly for three months – compliant and improved functionally

# Work Hardening

Traditional programs (gyms) -  
often a gap exists

## **Work Hardening =**

Relevant (task related) physical rehab  
aimed at restoring/improving physical  
capacity so individual can be returned  
to, maintained at or upgraded at work



**Point of difference**

**\*\*functionally specific\*\***

both to the worker's job  
role and to the injury  
sustained



# Work Hardening



Diesel fitter using rattle gun in typical posture



Electrician hanging a Heavy copper cable



# Manual Task Risk Matrix

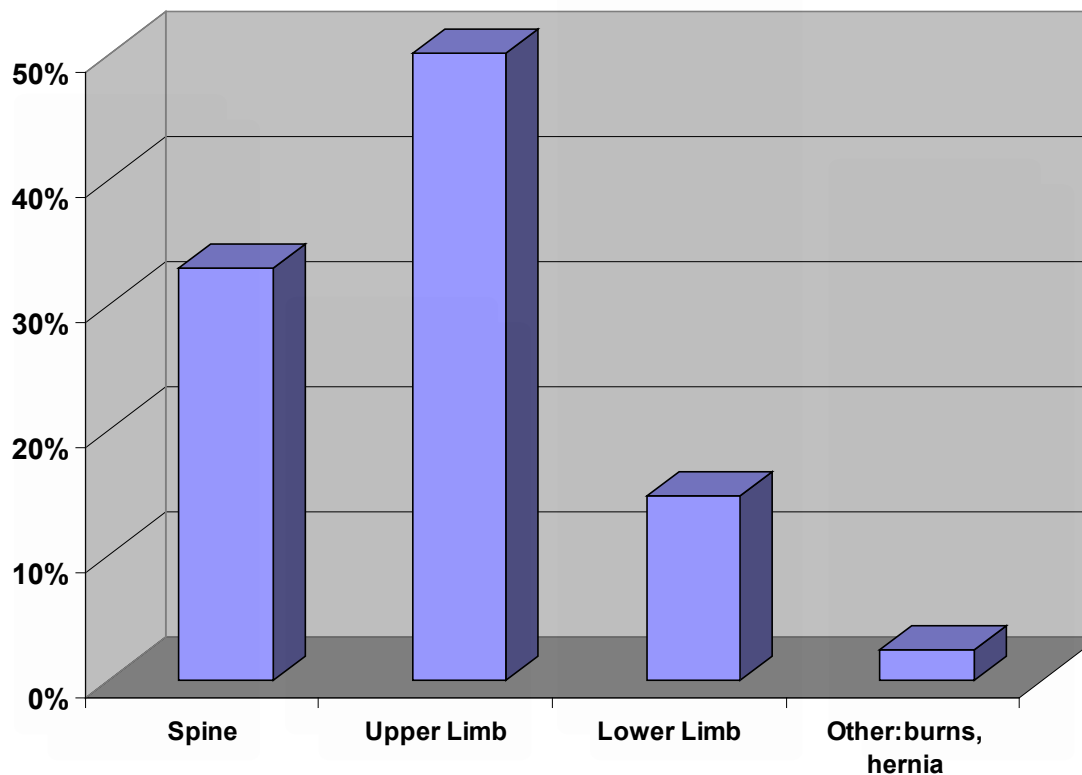
Developed/ modified by  
Robin Burgess-Limerick for  
Xstrata in 2008

- spontaneously assess and mitigate risks in **'real-time'** whilst performing functionally related work tasks
- Feedback loop to worksite for recognition of manual task risk factors and job modification
- Task then changed back at the worksite.

Task Characteristics				
	Exertion	Posture	Exposure	Movement
<b>+1</b>	Low force and speed	Comfortable postures within a normal range about neutral	Task performed infrequently for short periods	Dynamic and varied movement patterns
<b>+2</b>	Moderate force or speed, but well within capability	Uncomfortable postures, but not approaching an extreme range of motion	Task performed regularly, but with many breaks or changes of task	Little or no movement, or repeated similar movements
<b>+4</b>	High force or speed, but not close to maximum	Postures approaching or at an extreme range of motion	Task performed frequently, without breaks or changes of task	Repeated identical movement patterns
<b>+8</b>	Force or speed close to maximum		Task performed continuously for the majority of the shift	

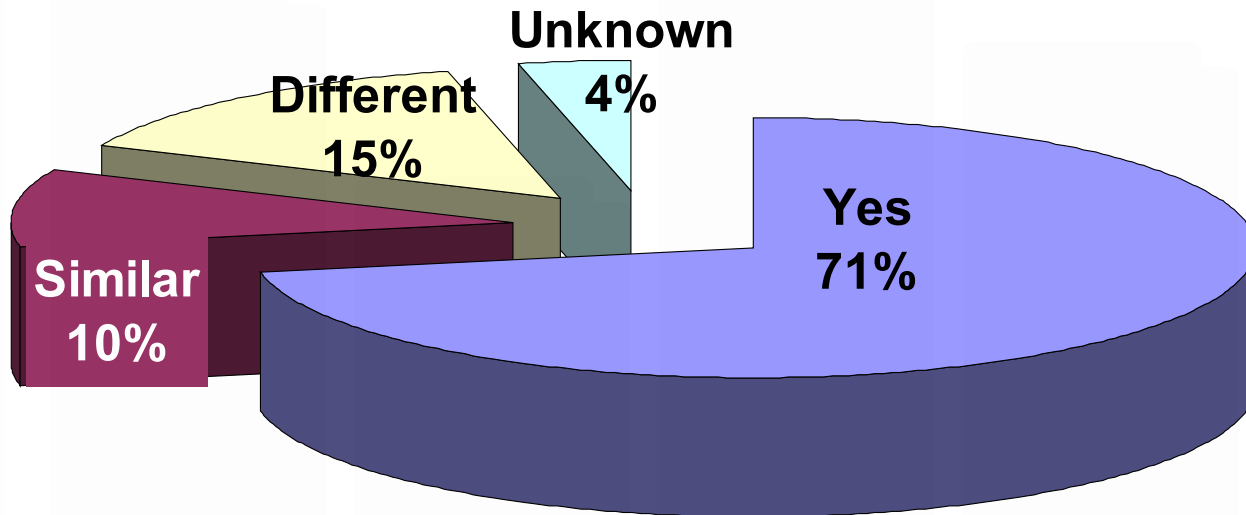
# Work Hardening

**Workers by Body Region**



# Work Hardening

**WHP Workers: Return to Pre-Injury Job Role?**





Xstrata have implemented a **multi-strategic integrated process** of empowering workers to increase ownership and improve their health.

## **Programs that are in place:**

- Targeted Monthly Health Programs
- Yearly Health Promotion Calendar
- The Health Passport - health coaching
- Telehealth

- The previous slides outlined the key steps in the development and utilization of the functional bridge system
- We see potential for Xstrata Zinc
  - Improvements in the overall health of the workforce
  - Increased motivation of the workforce to change their behaviour/attitudes towards health 'Ownership'
  - Increase cooperation and support from Operational areas.
- Potential to expose more people to the fully integrated health management system and wellness sustainability.

# Acknowledgements



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