Preventative and Holistic Management of Health in a Global Mining Industry

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Health Performance data - Employees

- Despite reduction in occupational illness continue to have concern on exposures
  - NOISE
    - exposures stable - 53% / 54% of employees potentially exposed above Occupational Exposure Limit (OEL). Level at which illness will expect to occur throughout working life.
  - OTHER EXPOSURES
    - 50 to 100% of OEL - increase in last reporting period of 27% to 30% of employees. Illness is possible at this level
    - > 100% of OEL - increase in last reporting 23% to 28%
- Strong reliance on PPE
- Concern regarding long term health - Carcinogens

Company Health Targets – Exposure based

- Understand and measure exposures
  - Met June 2003 target of baseline survey implementation
  - Close out of baseline exposure surveys across all sites by June 2008
- Reduce exposures year on year
  - Have not been showing reduced annual exposures as yet
  - Use of hierarchy of control other than PPE – 15% reduction by June 2012
- Reduce occupational illness
  - Met June 2007 target of 20% reduction on 2003 baseline
  - New target of 30% reduction by 2010 on 2006 baseline
2006 Mitsubishi Lecture
Diesel Particulate Initiative
Raw Exhaust Gas & Particulate Testing Equipment

Projects - Carcinogens
- Diesel Particulate Initiative
  - All company underground operations
  - Service / Maintenance oriented – low cost / high gain
  - External recognition / New technology developed
- 3M Acid Mist Reduction trial
  - Recent reduction in OEL for Sulphuric acid mist
  - Introduction at OD Copper processing prior to other sites
- Nickel – recent cancer claim / site based initiatives on dust exposure in NiW

Noise Community of Practice
- Noise most common occupational exposure exceedance
  - 53% of employees > 85 dB(A)
  - 19,000 workers, excluding contractors
- Noise induced hearing loss most common occupational disease
  - 235 cases in last 2 years
- Establish a Community of Practice
  - Leadership group from sites which have excellence in some aspect of noise control
  - Operate through Occupational Hygienists Network

Noise Project
- > 50% workforce potentially exposed / 235 new NIHL cases in 2 years
- Company wide Survey – who / what / where
- Maintenance has high exposure – pneumatic tools / welding and gouging
- Pursue activities with Global Maintenance Network
- Initiatives through Occupational Hygienists CoP / Noise CoP
- Initiatives with Global Supply – “Buy Quiet”

Noise Community of Practice
- Strategy
  - to identify the main sources of noise exposure by survey
  - to identify and promote centres of excellence within the company and share controls
  - to work with suppliers and manufacturers to develop quieter equipment options
  - to provide a networking focus for noise control
  - to develop noise management guidelines
  - to develop a noise control library

SUMMARY – EXPOSURE MANAGEMENT
- Sound Principles and Practices
  - Company Procedures / Guidelines
  - Site and Regional Workshops / Networks
  - Development of professionals / Graduate Program
- Company wide reporting process – Track targets
  - Understanding of exposure status
  - Progress to real time IT systems
- Exposure reduction initiatives
  - Workshop activity / site based initiative sharing
  - Company wide projects / Asset and site projects
Fit for Work / Fit for Life

- The Fit for Work/Fit for Life CoP was established to develop generic guidelines and associated toolkits for the Company on this important area of health.

- A consultative approach between members delivered the following guidelines and toolkits:
  - Fatigue Management Programs
  - Drug and Alcohol Programs
  - Employee Assistance Programs
  - Health Promotion Programs
  - Medical Assessment Programs
  - Occupational Rehabilitation Programs
  - Travel Health Programs
  - Ergonomic Analysis

Fatigue

- Vast area – challenging to develop
- Guideline linked to toolkits – scope for further development in Community of Practice (CoP) environment
- CoP - link to variety of external resource documents

Drug and Alcohol Programs

- Recent survey indicated variability in program management
- Programs will still need to be linked to local regulation, culture and work environment

All Significant Health Incidents by Fit For Work Category July 2001 – September 2005

- Fatigue - 52 (61%)
- Medical Event - 26 (31%)
- Drug and Alcohol - 5 (6%)
- Ergonomic - 1 (1%)
- Travel Health - 1 (1%)

Fatigue

Road train Rollover - Fatigue Related Incident

“When he awoke a short time later the truck was still traveling at approximately 100km/h on the wrong side of the road with the nearside wheels on the bitumen and the offside wheels on the gravel off of the road.”

Fatigue

Truck Tips Over

After traveling ~ 300m, the operator fell asleep behind the wheel. CH 24 was slowed down and stopped when it drove into a 7 metre high safety berm. The horse of the Coal Hauler came to a stop within metres of a 25 metre high highwall.

Fatigue

APTV Rollover

As he moved forward with the vehicle, he momentarily fell asleep. He was woken when the APTV had climbed on top of a pallet of butts. He tried to steer the vehicle back on to floor and at this point the cabin of the APTV overturned.
Fatigue

An off highway truck driver fell asleep whilst travelling on the Cattle Gorge haul road from the crusher to the Cattle Gorge ROM pad. The truck subsequently crossed the road and mounted a windrow on the side of the road and came to rest on the windrow.

Fatigue Risk Assessment Toolkit

- Work / Time Arrangements
- Employee Fitness for Work
- Monitoring and Controlling Potential for Fatigue
- Effect of Activities Carried out during Rostered and Overtime Hours
- Effect of Activities Carried out during Non Rostered Hours
- Programs to Improve Worker Awareness and Provide Support

Drug and Alcohol

- Truck Tips Over
  - The operator started to reverse to discharge the load from his truck as he lifted the loading bin; he felt that the truck was going to fall over, he opened his door and jumped out of the door of the truck before it fell.
  - Driver tested positive for drugs.

- Vehicle Collision
  - An oncoming private vehicle swerved in front of him. To avoid a head on collision the mine vehicle driver took evasive action by steering to the left onto the road shoulder. The incoming private vehicle collided with the mine vehicle causing extensive damage.
  - Driver of private vehicle under the influence of alcohol

Drug and Alcohol

Tool Kits

- Fatigue Management Risk Assessment Toolkit
- Fatigue Impairment Assessment Intervention (Tool kit 26)
- Fatigue Education (Tool kit 27)

PERSONAL HEALTH DISABILITY ATTRIBUTABLE LIFE YEARS

- Figure 1: Attributable risk factor DALY’s as a proportion (% of total DALY’s) (ATIPW, 2009)

- DALY’s
- Physical activity
- Occupational
- Alcohol use
- Tobacco
- Overweight and obesity
- Lack of schooling
- High blood cholesterol
- Breast cancer
- Tuberculosis
- Unsafe sex

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People consuming one to two alcoholic drinks a day were 50% less likely to suffer strokes than those who didn’t drink at all. Columbia University study of 677 stroke patients and 1139 controls.

Men who consumed chocolate three times per month lived almost a year longer than those who either abstained or indulged three or more times each week. Harvard School of Public Health (1998) from a five-year study on 8,000 American men aged around 65.

Performance and Stress / Workload
- Under-performance
- Peak performance
- Diminished performance
- Absenteeism / illness
- Turnover / ?

...The Effect of Personality Type

...The Effect of Improved Health

Travel Health - Offshore
BHP BILLITON GLOBAL HEALTH ASSIST

What is provided?

- Global Health Assist Card
- Health and Medical Advice
- Medical Monitoring and Case Management
- Evacuation and Repatriation
- Pre and post travel care
- Corporate Care for International Assignees and dependants
- Employee Assistance Program

Avian Flu - Predictions

- The current median estimate is that there is a 10% possibility of a pandemic in the next 12 months
- Fatality rate globally of that similar to the Spanish Flu of 2.8 - 5.0%
- In Australia it was estimated that this could be reduced to as low as 0.5 - 1.0%
- Fatality rates will be much higher in developing countries. During the Spanish Flu the fatality rate in Fiji was 14% of the population
- The current H5N1 virus is showing similar genetic changes to the Avian virus that resulted in the Spanish Flu Pandemic of 1918
- The genetic structure of that virus has now been published to assist researchers in vaccine development despite the potential bioterrorism aspects attached to this.

Avian Flu Documentation

- CEM Protocol
- Pandemic Contingency Plan
- Business Unit Checklist *
- Pandemic FAQ’s
- Avian Flu PowerPoint Presentation

Environmental Health - ? Dust /Noise /Odour
BHP Billiton is an organisation in which:

• All relevant individuals are protected from health hazards associated with company operations
• Leaders at all levels recognise that effective management of health risks is good business
• Workplace exposures are understood, managed and reviewed
• Health surveillance programs are in place, assessed and reviewed
• People are aware of the risks to their health in the workplace and act accordingly
• “At risk” behaviours are not acceptable and are addressed when observed
• Programs are in place to promote a healthy lifestyle

Conclusion

• The BHP Billiton Charter expresses the Company’s view of the importance of people by stating an overriding commitment to health, safety, environmental responsibility and sustainable development.
• People are valued within the organization and fitness for work issues and health exposures must be managed so as to not adversely impact the safety or well-being of the workforce.

DESIRED OUTCOMES

• Occupational Illnesses and Health related incidents reduced with associated impact on improving Safety
• Workplace health focus = improved Safety = ALL WORKFORCE STAYS Fit for Work / Fit for Life.