Mine Health Indices

Prepared By: Micromex Research

Date: September 2011

Engaged by:

NSW GOVERNMENT Trade & Investment

On behalf of:

NSW MINE SAFETY ADVISORY COUNCIL

micromex research

OUT11/18786

Preface

This report demonstrates the commitment of the NSW mining industry in working towards achieving world-leading worker health. This report focuses on lead indicators and provides a snapshot of the management of workers' health on-site in the NSW mining industry.

In 2010, the NSW Mine Safety Advisory Council (MSAC) developed a set of health indices and commissioned two reports. One on lag health indicators in mining and the other on lead health indicators in mining. Lead indicators monitor actions on site to prevent incidents while lag indicators monitor incidents that have already occurred. The two reports commissioned can be used to examine progress by the industry in reducing worker exposure to health risks arising at work.

MSAC determined that these reports would focus on six key areas: MSD (musculoskeletal disorders); fatigue; noise; diesel particulates; dust, and health management plans.

The Lag Indicator Report[(1)] showed a reduction in the rate of workers' compensation claims related to manual handling accidents, slips and noise-induced hearing loss in the mining industry over a 10-year period. The lag indicator report when examined in combination with a reduction in the Fatal Injury Frequency Rate and Lost Time Injury Frequency Rate (*Trade and Investment Performance Measures Report 2010-11* [(2)]), indicate that the industry has made improvements in its work health and safety performance over the last ten years.

This Lead Indicators Report is the result of extensive consultation between stakeholders within MSAC, about what key areas need to be focused on in health risk management.

[(1)] Health Lag Indicators Report Trade and Investment June 2011
http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0004/409765/Workcover-claims-data-Health-Lag-Indicator-Report-June-2011.pdf
[(2)] NSW Mine Safety Performance Report Trade and Investment December 2011
http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0017/421406/NSW-Mine-Safety-Performance-Report-2010-11.pdf

Preface

NSW Trade and Investment engaged Micromex Research, on behalf of MSAC, to conduct a lead indicator survey regarding health management at mine sites throughout NSW, in August 2011. The findings of the lead indicator survey are found in this report.

Sites included both underground and open-cut coal mines, metalliferous mines and extractives sites. A total of 224 sites responded out of a total number of 352 sites contacted.

The findings in this report will contribute to the body of information that will assist MSAC in making informed decisions when developing targeted education and assistance programs for the industry. These programs will focus on making a real difference and extend to all workers on a mine site, including contractors.

In summary, this lead indicators report findings for the six key areas are:

Health Management Plans

A majority of mines have a formal health management plan in place and nearly all those who don't, still address some health issues in other relevant site plans. During the last five years, 66% of sites implemented a health management plan.

Most sites are aware of the MSAC Health Management Guide, and although less than 50% of sites follow it closely, most follow it to some extent.

It would be beneficial to collect data relating to the application of site health management plans to fulltime contractors, although this may need to be collected and analysed separately.

Making sure health management plans are implemented, particularly in small mines, will continue to be a priority.

Musculoskeletal Disorders (MSD)

Of the five priority areas MSD demonstrates the lowest levels of systematic assessment and management.

The role of vibration in the causation of MSD is hard to recognize and control, and mine personnel responsible for safety and health management could reasonably be expected to need assistance in this area.

Fatigue

Fatigue is difficult to assess and there is scope for better recognition and control of fatigue-causing work practices.

Fatigue should continue to be a priority area for focus by HMAC, including use of the MSAC guidelines for fatigue management in small mines.

Noise

Given that noise-induced hearing loss is irreversible, can be severe and is avoidable, it should continue to be a major priority for further activity, especially in underground mines.

Diesel particulates

Most underground sites carried out some type of risk assessment and control actions. However, nearly a third of underground mines did not have a formal management program. This suggests that systematic monitoring and control of exposure to diesel exhaust could be improved.

Preface

Dust

The industry's assessment and control of risks associated with dust exposure appears to be very good and a focus needs to continue including health surveillance.

Other matters

Strategies to promote systematic risk management of the identified priority issues, particularly Musculoskeletal Disorders, will continue to be developed by MSAC in a collaborative manner.

Smaller mines will benefit from targeted assistance in developing a more comprehensive approach to health risk management.

Background

Background & Core Research Objectives

The NSW Department of Trade and Investment, Regional Infrastructure and Services (DTIRIS NSW) on behalf of the NSW Mine Safety Advisory Council (MSAC), appointed Micromex Research to develop, conduct and analyse a survey of mine site management representatives in order to measure current health indices for identified priority health issues within the NSW Mining and Extractives Industry.

This survey is designed to monitor industry progress toward effective management of identified hazards with health impacts. The resultant health indices will be utilised to assess actions being undertaken on-site and benchmarked against the desired approach for managing those risks intended by the legislation and MSAC endorsed guidance material.

The outcomes of the research program will allow evaluation of the indices by industry sector, and detail the following key occupational health areas:

- Noise
- Dust
- Diesel Particulate
- Fatigue
- MSD
- Health Management Guide

Methodology & Sample

In August 2011, Micromex Research surveyed, via telephone, operators responsible for a total of 224 mines in NSW

Specifics of the Survey

Questionnaires
Micromex Research, together with the MSAC, developed the questionnaire.

Sample size
A sample size of 224 mines, out of a total number of 352, provided a maximum sampling error of approximately +/-3.95% at 95% confidence. At the subset level (by mine type) a maximum sampling error of approximately +/-4.9% at 95% confidence was achieved, with the exception of metalliferous, where the lower sample size resulted in an error rate of greater than +/-12% at 95% confidence.

Data collection period
The surveys were completed during August 2011. Where respondents were uncontactable by phone after a minimum of 5 attempts, a reminder letter was sent to the mine operator requesting their participation. This resulted in a total of 38 surveys being received via email or fax.

Statistically significant differences by mine type
Within the report, statistically significant differences by mine type were identified by use of the 'One-Way Anova Test' and identified as follows:

- A significantly higher percentage (by group)
- A significantly lower percentage (by group)

NB: All percentages are calculated to the nearest whole number and therefore the total may not exactly equal 100%.

The methodology ensured a strong understanding of health risk management in the NSW Mining and Extractives Industry

Mine Health Indices

Key Measures

Mine Health Indices – Key Measures

Health Management Plan

Sites with a specific Health Management Plan as required under current legislation		92%
Health management planning that follows the MSAC Health Management Guide		44% fully 39% partially
Health hazards with a formal and written assessment	Dust	75% fully 14% partially
	Hazardous substances	66% fully 26% partially
	Noise	63% fully 27% partially
	Fatigue	63% fully 29% partially
	MSD	29% fully 47% partially
	Diesel exhaust fumes	25% fully 27% partially
Health issues included in the training of all new employees		71% fully 28% partially
Perception of worker training in the control of health issues		3.83 out of 5 (where 5 is high)
Perception of how well people in positions with specific OH&S responsibilities are trained		4 out of 5 (where 5 is high)
Pre and post employment health screening carried out on the workforce		39% fully 43% partially

Mine Health Indices – Key Measures

Health Management Plan

Health hazards monitored by health surveillance	Dust	75% fully 21% partially
	Noise	63% fully 27% partially
	Fatigue	49% fully 36% partially
	Hazardous substances	45% fully 36% partially
	MSD	25% fully 46% partially
	Diesel exhaust fumes	24% fully 31% partially
Inclusion of illness management and rehabilitation in health management planning		63% fully 33% partially
Inclusion of education and awareness of other health issues in health management planning	Drug and alcohol abuse	75% fully 19% partially
	Fatigue	61% fully 33% partially
	Health	51% fully 35% partially
	Fitness	41% fully 42% partially
	Wellbeing	38% full 36% partially
	Cardio-vascular risks	30% fully 39% partially
	Nutrition	29% fully 35% partially

Mine Health Indices – Key Measures

Health Management Plan

Formal employee assistance program accessible by all on-site	71% fully 17% partially
Inclusion of ongoing monitoring and evaluation of the effectiveness of the health management plan	26% all site workers/ 61% limited to employees
Purely reactive approach to health management planning	4%
Indicators follow a set protocol	45% full 32% partially

Occupational Noise Management

Identified occupational noise risks	67% fully 29% partially
Purely reactive approach to noise management	7%

Musculoskeletal Disorder

Program to identify risks in MSD	37%
Purely reactive approach to MSD	21%

Mine Health Indices – Key Measures

Diesel Particulate Management (Underground mining only)

Program to identify risks in diesel particulate management	73%
Purely reactive approach to diesel particulate management	7%

Fatigue Management

Program to identify risks in fatigue management	76%
Purely reactive approach to fatigue management	8%

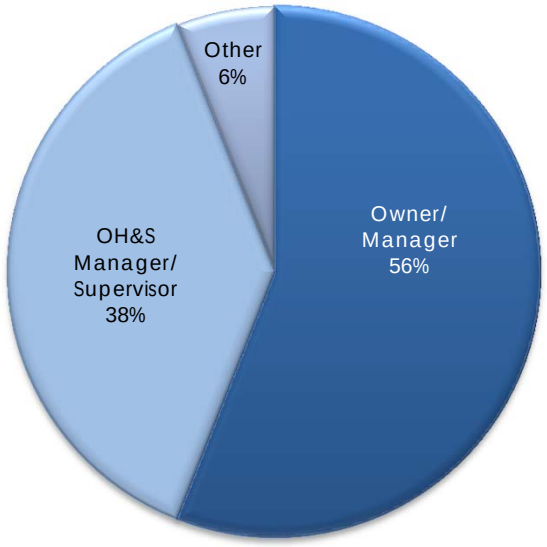
Dust Management

Program to identify risks in dust management	89%
Purely reactive approach to dust management	2%

The Detailed Response
General Information

Respondents were generally identified as Owner/Manager (56%) or OH&S Manager/Supervisor (38%)

Q. What is your current position or job title?



Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Owner/Manager	90	67%	17	52%	18	32%
OH&S Manager/Supervisor	35	26%	13	39%	37	65%
Other	9	7%	3	9%	2	4%
Total	134	100%	33	100%	57	100%

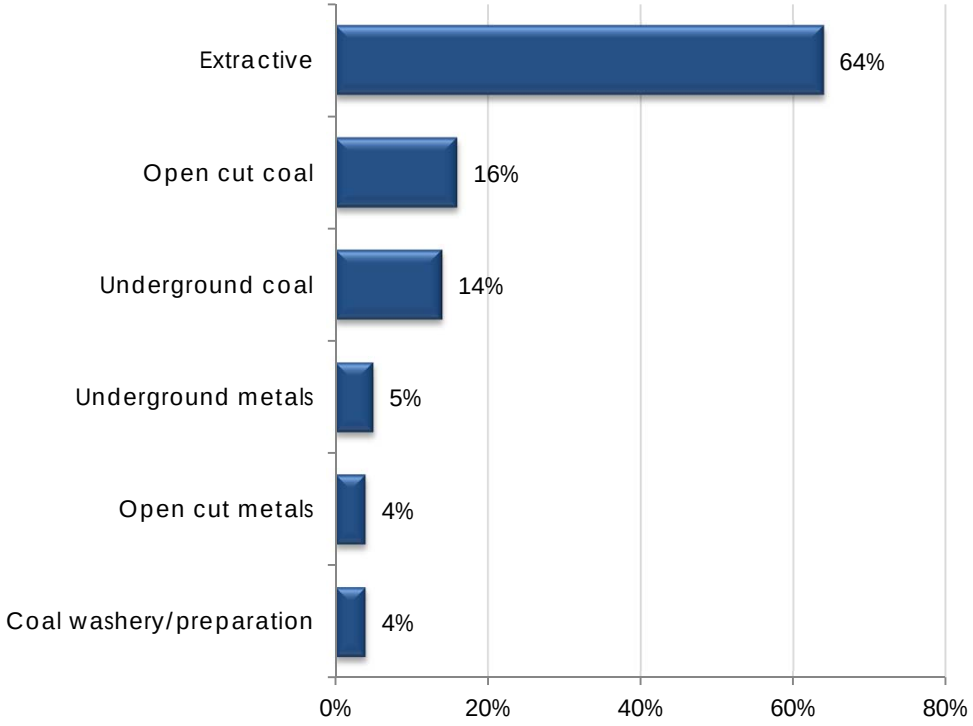
Correlations by sector	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Owner/Manager	15	37%	12	39%	93	64%	6	33%	125	56%
OH&S Manager/Supervisor	23	56%	19	61%	42	29%	11	61%	85	38%
Other	3	7%	0	0%	10	7%	1	6%	14	6%
Total	41	100%	31	100%	145	100%	18	100%	224	100%

Base: n = 224

The fewer employees a mine had, the more likely the respondent was to be an owner/manager

Respondents are identified as being predominantly from the extractives sector

Q. Which of the following sectors are you employed in?



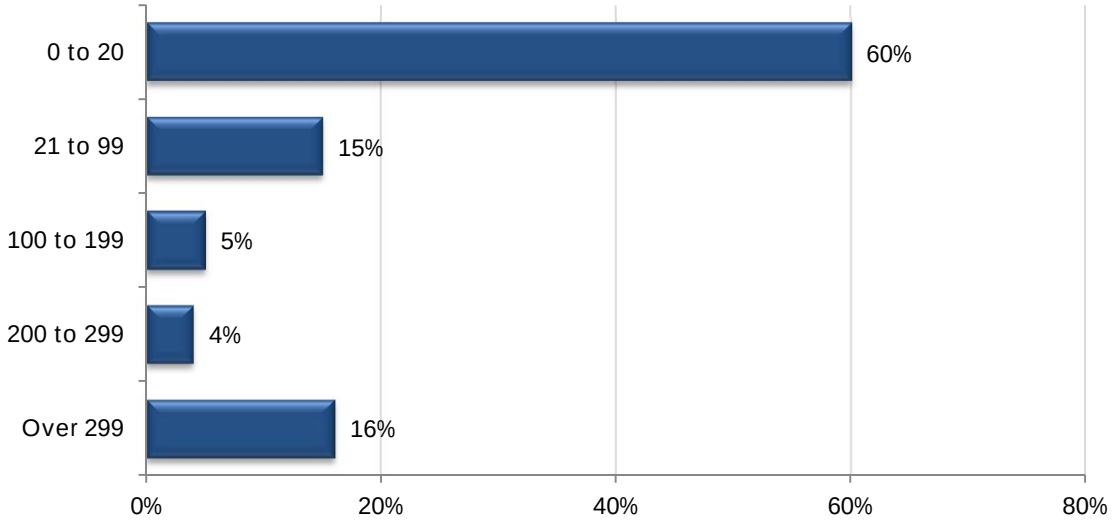
For the purpose of correlations throughout the report, respondents were further sorted into the following groups:

	Total #of mines in the database	Total # of mines surveyed	% of all mines surveyed
Extractive	210	145	65%
Open cut coal	51	41	18%
Underground coal	33	31	14%
Metalliferous	58	18	8%
Total	352	224	100%

Base: n = 224

A variety of mine sizes is represented with the predominant being 0-20 employees (60%)

Q. How many full time equivalent employees and permanent contractors work at the site?



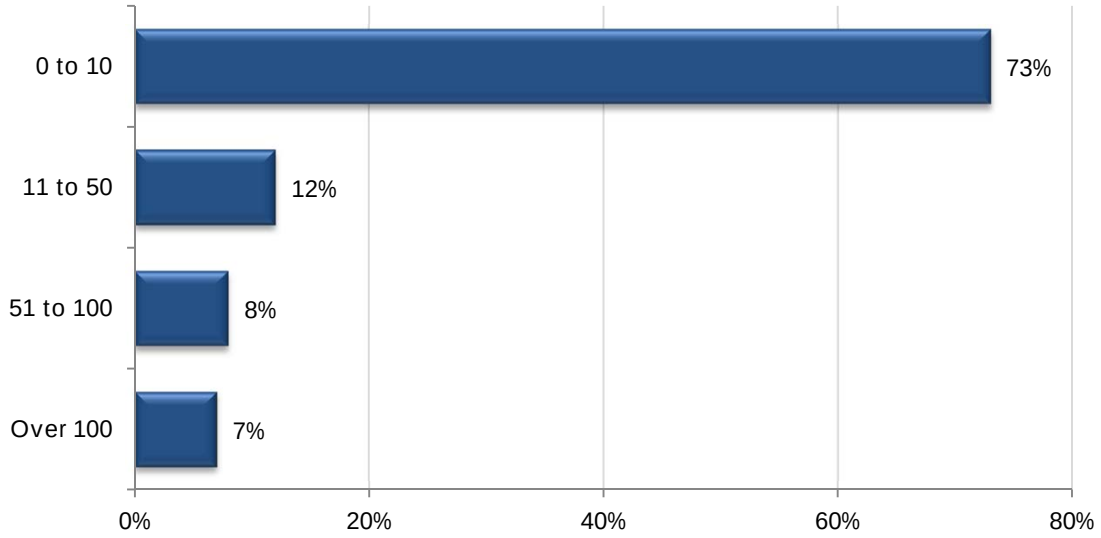
Correlations by sector	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
0 to 20	2	5%	0	0%	126	87%	6	33%	134	60%
21 to 99	12	29%	4	13%	15	10%	4	22%	33	15%
100 to 199	6	15%	5	16%	0	0%	0	0%	11	5%
200 to 299	2	5%	8	26%	0	0%	0	0%	10	4%
Over 299	19	46%	14	45%	4	3%	8	44%	36	16%
Total	41	100%	31	100%	145	100%	18	100%	224	100%

Base: n = 224

16% of all mines surveyed employ 300 or more full time equivalent employees and permanent contractors

Respondents were not generally large employers of part time contractors

Q. How many part time contractors are in your operation on site?



Correlations by sector	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
0 to 10	12	31%	15	48%	131	90%	9	50%	162	73%
11 to 50	8	21%	9	29%	9	6%	0	0%	26	12%
51 to 100	9	23%	1	3%	5	3%	6	33%	18	8%
Over 100	10	26%	6	19%	0	0%	3	17%	16	7%
Total	39	100%	31	100%	145	100%	18	100%	222	100%

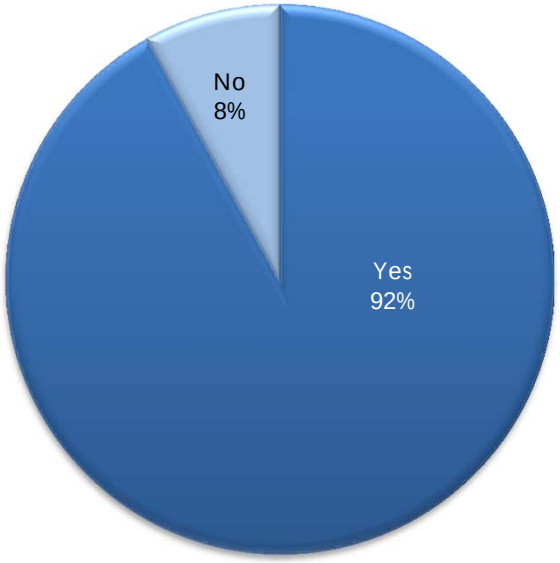
Base: n = 222

The extractives sector is the least likely to be an employer of part time contractors

Health Management Plan

The large majority of respondents (92%) stated that their mine had a specific Health Management Plan as required under current legislation

Q. Does your site have a specific Health Management Plan as required under current legislation?



Smaller mines were significantly more likely to answer this question in the affirmative

Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Yes	129	96%	31	94%	46	81%
No	5	4%	2	6%	11	19%
Total	134	100%	33	100%	57	100%

Correlations by sector	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Yes	35	85%	23	74%	140	97%	18	100%	206	92%
No	6	15%	8	26%	5	3%	0	0%	18	8%
Total	41	100%	31	100%	145	100%	18	100%	224	100%

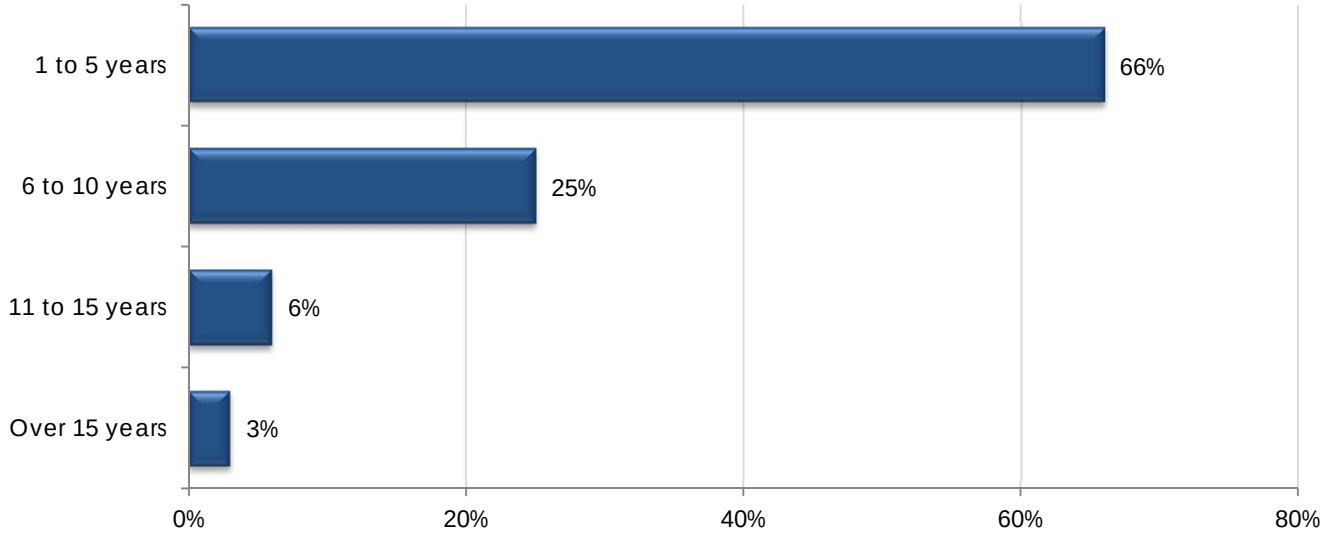
Base: n = 224

Respondents from the metalliferous and extractives sector were the most likely to state that their mine had a specific Health Management Plan

For sites with a specific health management plan, the majority have been in place for 1 to 5 years

Q. Does your site have a specific Health Management Plan as required under current legislation?

Q. (If yes), how long has it been in place?



Correlations by sector	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
1 to 5 years	22	76%	18	86%	80	62%	12	75%	126	66%
6 to 10 years	5	17%	3	14%	36	28%	3	19%	47	25%
11 to 15 years	2	7%	0	0%	8	6%	1	6%	11	6%
Over 15 years	0	0%	0	0%	6	5%	0	0%	6	3%
Total	29	100%	21	100%	130	100%	16	100%	190	100%

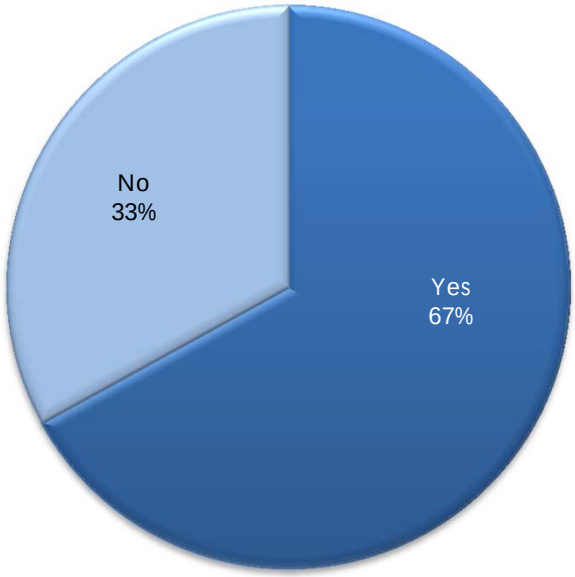
Base: n = 190

There were no statistically significant differences by sector or by mine size

The majority of sites without a specific health management plan are still aware of the MSAC Health Management Guide

NB: This question was only asked of those respondents whose sites did not have a specific health management plan.

Q. Are you familiar with the Mine Safety Advisory Council Health Management Guide?



Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Yes	2	40%	2	100%	8	73%
No	3	60%	0	0%	3	27%
Total	5	100%	2	100%	11	100%

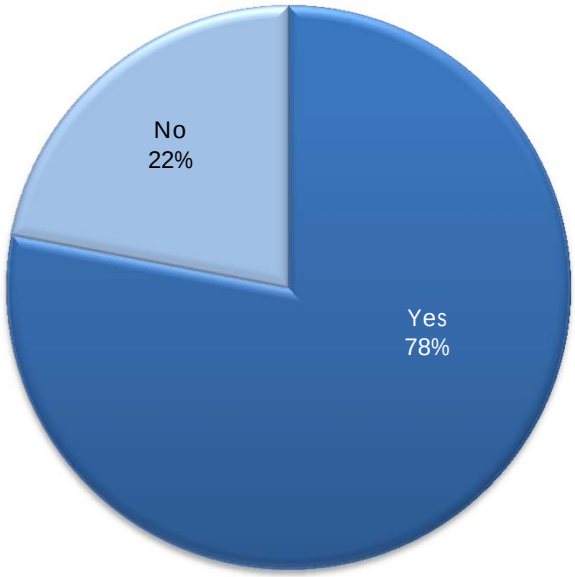
Correlations by sector	Open cut coal		Underground coal		Extractive		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Yes	6	100%	5	63%	2	40%	12	67%
No	0	0%	3	38%	3	60%	6	33%
Total	6	100%	8	100%	5	100%	18	100%

Base: n = 18

The majority of sites without a specific health management plan include health in other management plans (78%)

NB: This question was only asked of those respondents whose sites did not have a specific health management plan.

Q. Is health specifically included in any other management plan?



Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Yes	4	80%	2	100%	8	73%
No	1	20%	0	0%	3	27%
Total	5	100%	2	100%	11	100%

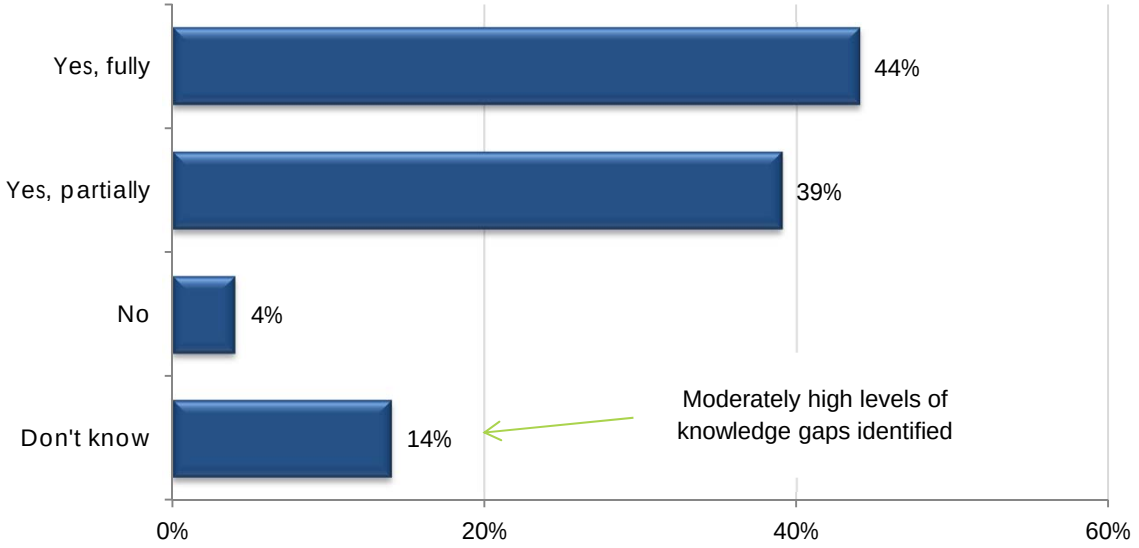
Correlations by sector	Open cut coal		Underground coal		Extractive		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Yes	4	67%	7	88%	4	80%	14	78%
No	2	33%	1	13%	1	20%	4	22%
Total	6	100%	8	100%	5	100%	18	100%

Base: n = 18

Only 22% of sites are identified as not including health in other management plans

44% of sites identify that their health management planning 'fully' follows the MSAC Health Management Guide

Q. Does your health management planning follow the Mine Safety Advisory Council Health Management Guide?



With regards to 'fully' following , there were no statistically significant differences by sector

Correlations by sector	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Yes, fully	12	31%	13	43%	67	47%	7	39%	97	44%
Yes, partially	18	46%	7	23%	59	41%	5	28%	85	39%
No	6	15%	5	17%	2	1%	0	0%	8	4%
Don't know	3	8%	5	17%	16	11%	6	33%	30	14%
Total	39	100%	30	100%	144	100%	18	100%	220	100%

Base: n = 220

39% of sites are identified as only 'partially' following the MSAC Guide

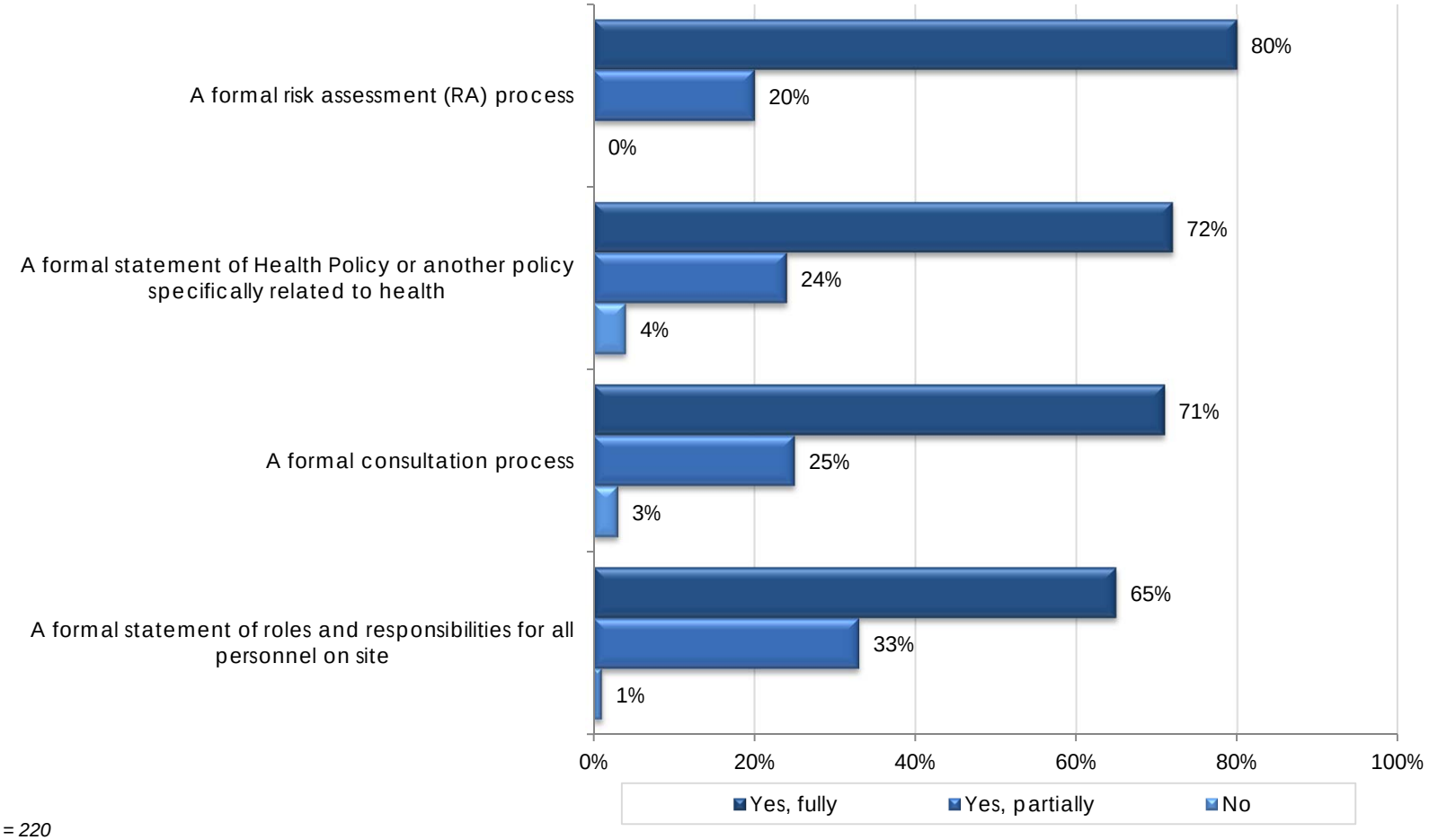
20% of mines with 100 or more full time employees 'don't know' if their health management planning follows the Guide

Q. Does your health management planning follow the Mine Safety Advisory Council Health Management Guide?

Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Yes, fully	61	46%	13	39%	23	43%
Yes, partially	55	41%	16	48%	14	26%
No	2	2%	0	0%	6	11%
Don't know	15	11%	4	12%	11	20%
Total	133	100%	33	100%	54	100%

Health Management Plans are predominantly identified as including all of the prompted processes or statements

Q. Does your Health Management Plan specifically include:



Base: n = 220

The Health Management Plan is most likely to include a formal risk assessment process and least likely to include a formal statement of on site personnel's roles and responsibilities

The open cut and underground coal sectors are identified as the most likely to have a plan that 'fully' includes a formal consultation and risk assessment process

Q. Does your Health Management Plan specifically include:

Correlations by sector		Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
		Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
A formal consultation process	Yes, fully	35	90%	27	90%	93	65%	11	61%	157	71%
	Yes, partially	2	5%	1	3%	47	33%	6	33%	56	25%
	No	2	5%	2	7%	4	3%	1	6%	7	3%
	Total	39	100%	30	100%	144	100%	18	100%	220	100%
A formal statement of Health Policy or another policy specifically related to health	Yes, fully	28	72%	23	77%	101	70%	15	83%	159	72%
	Yes, partially	6	15%	3	10%	41	28%	3	17%	53	24%
	No	5	13%	4	13%	2	1%	0	0%	8	4%
	Total	39	100%	30	100%	144	100%	18	100%	220	100%
A formal statement of roles and responsibilities for all personnel on site	Yes, fully	22	56%	19	63%	93	65%	13	72%	144	65%
	Yes, partially	17	44%	11	37%	49	34%	4	22%	73	33%
	No	0	0%	0	0%	2	1%	1	6%	3	1%
	Total	39	100%	30	100%	144	100%	18	100%	220	100%
A formal risk assessment (RA) process	Yes, fully	36	92%	29	97%	104	72%	18	100%	176	80%
	Yes, partially	3	8%	1	3%	39	27%	0	0%	43	20%
	No	0	0%	0	0%	1	1%	0	0%	1	0%
	Total	39	100%	30	100%	144	100%	18	100%	220	100%

Open cut and underground coal sites are identified as the least likely to have a formal statement of Health Policy

Generally, the larger the employer, the more likely they are to have a plan that 'fully' includes a formal consultation and risk assessment process

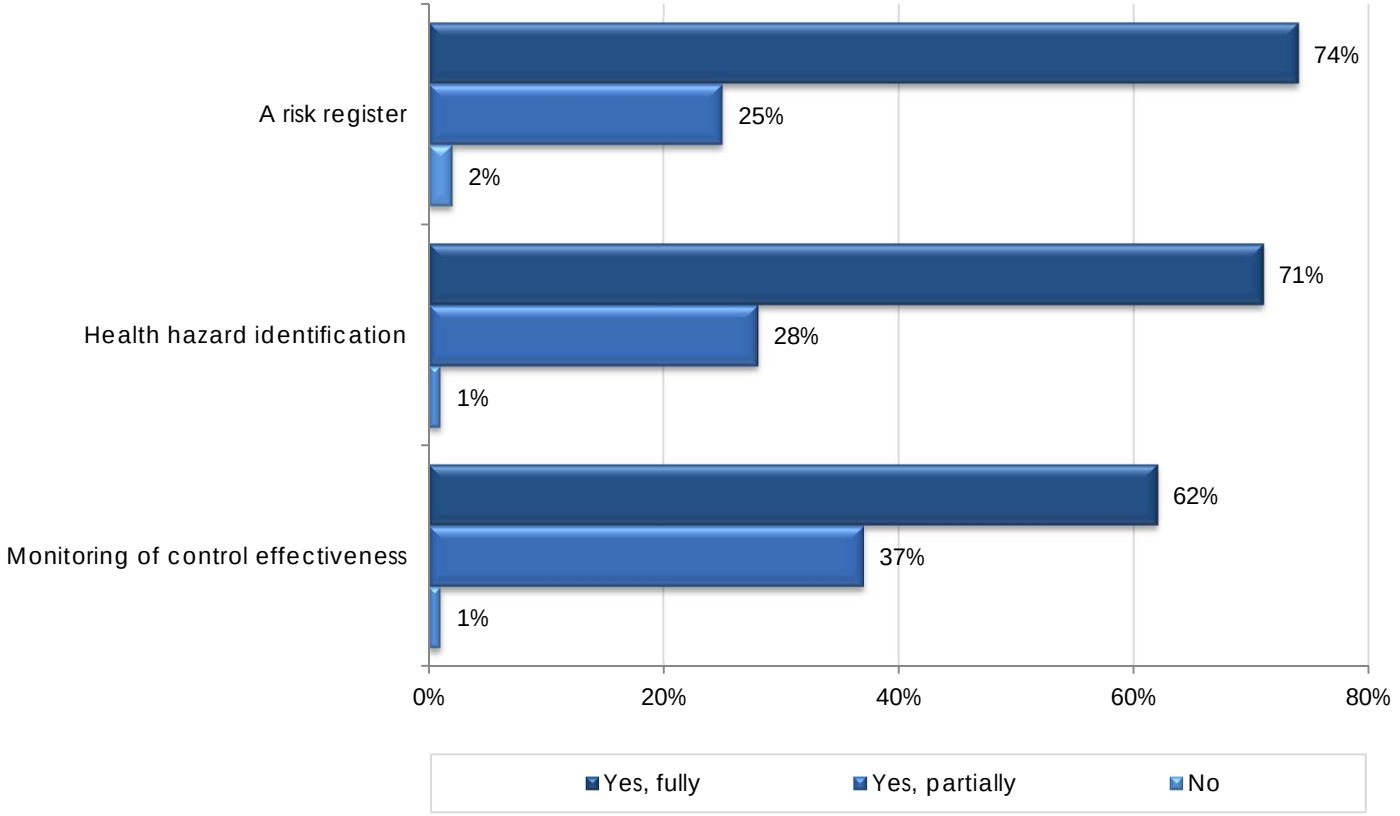
Q. Does your Health Management Plan specifically include:

Correlations by full time employees/permanent contractors		0 to 20		21 to 100		100 or over	
		Count	Column %	Count	Column %	Count	Column %
A formal consultation process	Yes, fully	82	62%	31	94%	44	81%
	Yes, partially	46	35%	2	6%	8	15%
	No	5	4%	0	0%	2	4%
	Total	133	100%	33	100%	54	100%
A formal statement of Health Policy or another policy specifically related to health	Yes, fully	89	67%	28	85%	42	78%
	Yes, partially	43	32%	4	12%	6	11%
	No	1	1%	1	3%	6	11%
	Total	133	100%	33	100%	54	100%
A formal statement of roles and responsibilities for all personnel on site	Yes, fully	88	66%	20	61%	36	67%
	Yes, partially	43	32%	13	39%	17	31%
	No	2	2%	0	0%	1	2%
	Total	133	100%	33	100%	54	100%
A formal risk assessment (RA) process	Yes, fully	94	71%	30	91%	52	96%
	Yes, partially	38	29%	3	9%	2	4%
	No	1	1%	0	0%	0	0%
	Total	133	100%	33	100%	54	100%

Sites with over 100 employees are identified as the least likely to have a formal statement of Health Policy

Sites with a formal risk assessment process, identified that the process generally included a risk register, health hazard identification and the monitoring of control effectiveness

Q. (If the site has a formal risk assessment process), does this risk assessment specifically include:



Base: n = 219

Inclusion of these measures within the risk assessment process was often identified as only 'partial', particularly in the case of the monitoring of control effectiveness

There were few statistically significant differences in responses by sector

Q. (If the site has a formal risk assessment process), does this risk assessment specifically include:

Correlations by sector		Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
		Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Health hazard identification	Yes, fully	31	79%	21	70%	93	65%	15	83%	156	71%
	Yes, partially	8	21%	8	27%	49	34%	3	17%	61	28%
	No	0	0%	1	3%	1	1%	0	0%	2	1%
	Total	39	100%	30	100%	143	100%	18	100%	219	100%
A risk register	Yes, fully	34	87%	26	87%	95	66%	17	94%	161	74%
	Yes, partially	4	10%	2	7%	47	33%	1	6%	54	25%
	No	1	3%	2	7%	1	1%	0	0%	4	2%
	Total	39	100%	30	100%	143	100%	18	100%	219	100%
Monitoring of control effectiveness	Yes, fully	25	64%	20	67%	80	56%	15	83%	136	62%
	Yes, partially	14	36%	10	33%	60	42%	3	17%	80	37%
	No	0	0%	0	0%	3	2%	0	0%	3	1%
	Total	39	100%	30	100%	143	100%	18	100%	219	100%

Larger employers are identified as more likely to have a risk register and control effectiveness monitoring

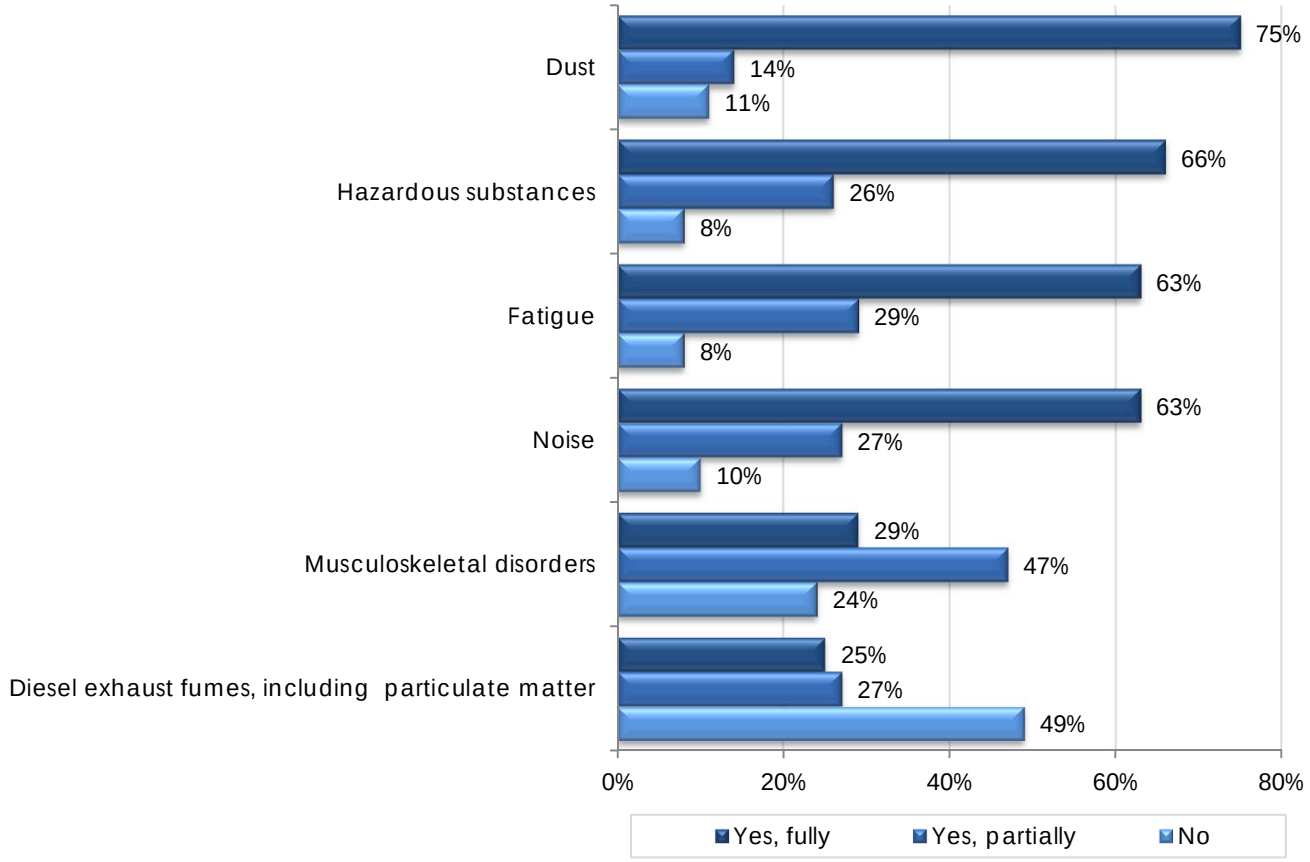
Q. (If the site has a formal risk assessment process), does this risk assessment specifically include:

Correlations by full time employees/permanent contractors		0 to 20		21 to 99		100 or more	
		Count	Column %	Count	Column %	Count	Column %
Health hazard identification	Yes, fully	87	66%	28	85%	41	76%
	Yes, partially	44	33%	4	12%	13	24%
	No	1	1%	1	3%	0	0%
	Total	132	100%	33	100%	54	100%
A risk register	Yes, fully	88	67%	26	79%	47	87%
	Yes, partially	43	33%	5	15%	6	11%
	No	1	1%	2	6%	1	2%
	Total	132	100%	33	100%	54	100%
Monitoring of control effectiveness	Yes, fully	79	60%	14	42%	43	80%
	Yes, partially	50	38%	19	58%	11	20%
	No	3	2%	0	0%	0	0%
	Total	132	100%	33	100%	54	100%

Smaller employers were more likely to only 'partially' have a risk register or health hazard identification

Dust, hazardous substances, fatigue and noise are identified as the health hazards most likely to have a formal and written assessment

Q. Which of the following health hazards have a formal and written assessment?



Base: n = 224

Particular opportunities to increase formal and written assessments are identified in relation to musculoskeletal disorders and diesel exhaust fumes

Significant differences by sector in the assessment of health hazards are identified

Q. Which of the following health hazards have a formal and written assessment?

Correlations by sector		Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
		Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Noise	Yes, fully	22	54%	12	39%	98	68%	13	72%	142	63%
	Yes, partially	15	37%	10	32%	36	25%	5	28%	60	27%
	No	4	10%	9	29%	11	8%	0	0%	22	10%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Musculoskeletal disorders	Yes, fully	12	29%	9	29%	36	25%	8	44%	64	29%
	Yes, partially	21	51%	11	35%	72	50%	10	56%	106	47%
	No	8	20%	11	35%	37	26%	0	0%	54	24%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Hazardous substances	Yes, fully	29	71%	17	55%	88	61%	14	78%	147	66%
	Yes, partially	10	24%	10	32%	44	30%	3	17%	59	26%
	No	2	5%	4	13%	13	9%	1	6%	18	8%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Dust	Yes, fully	30	73%	21	68%	105	72%	16	89%	168	75%
	Yes, partially	2	5%	1	3%	26	18%	2	11%	31	14%
	No	9	22%	9	29%	14	10%	0	0%	25	11%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Fatigue	Yes, fully	36	88%	26	84%	76	52%	11	61%	140	63%
	Yes, partially	3	7%	1	3%	55	38%	6	33%	65	29%
	No	2	5%	4	13%	14	10%	1	6%	19	8%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Diesel exhaust fumes, including particulate matter	Yes, fully	10	24%	15	48%	19	13%	12	67%	55	25%
	Yes, partially	8	20%	5	16%	45	31%	3	17%	60	27%
	No	23	56%	11	35%	81	56%	3	17%	109	49%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%

The underground coal sector is identified as underperforming in relation to the assessment of noise, MSD and dust

There were only limited identified differences by employer size in the assessment of health hazards

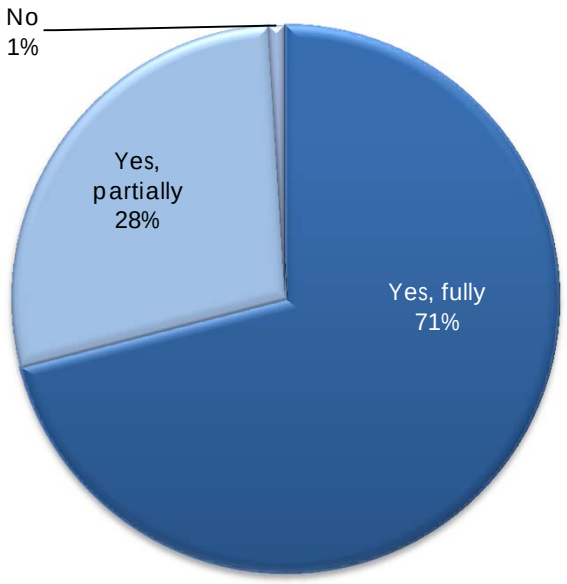
Q. Which of the following health hazards have a formal and written assessment?

Correlations by full time employees/permanent contractors		0 to 20		21 to 99		100 or more	
		Count	Column %	Count	Column %	Count	Column %
Noise	Yes, fully	87	65%	24	73%	31	54%
	Yes, partially	36	27%	6	18%	18	32%
	No	11	8%	3	9%	8	14%
	Total	134	100%	33	100%	57	100%
Musculoskeletal disorders	Yes, fully	34	25%	10	30%	20	35%
	Yes, partially	68	51%	17	52%	21	37%
	No	32	24%	6	18%	16	28%
	Total	134	100%	33	100%	57	100%
Hazardous substances	Yes, fully	81	60%	28	85%	38	67%
	Yes, partially	39	29%	5	15%	15	26%
	No	14	10%	0	0%	4	7%
	Total	134	100%	33	100%	57	100%
Dust	Yes, fully	93	69%	29	88%	46	81%
	Yes, partially	27	20%	2	6%	2	4%
	No	14	10%	2	6%	9	16%
	Total	134	100%	33	100%	57	100%
Fatigue	Yes, fully	69	51%	24	73%	47	82%
	Yes, partially	50	37%	9	27%	6	11%
	No	15	11%	0	0%	4	7%
	Total	134	100%	33	100%	57	100%
Diesel exhaust fumes, including particulate matter	Yes, fully	22	16%	4	12%	29	51%
	Yes, partially	41	31%	9	27%	10	18%
	No	71	53%	20	61%	18	32%
	Total	134	100%	33	100%	57	100%

Larger employers are identified as outperforming in relation to fatigue and diesel exhaust fumes

Health issues are identified as being included in the training of almost all new employees, however, 28% of the time this is identified as only ‘ partially’

Q. Are health issues included in the training of all new employees?



There were no statistically significant differences identified by sector or employer size

Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Yes, fully	96	72%	23	70%	39	68%
Yes, partially	35	26%	10	30%	18	32%
No	3	2%	0	0%	0	0%
Total	134	100%	33	100%	57	100%

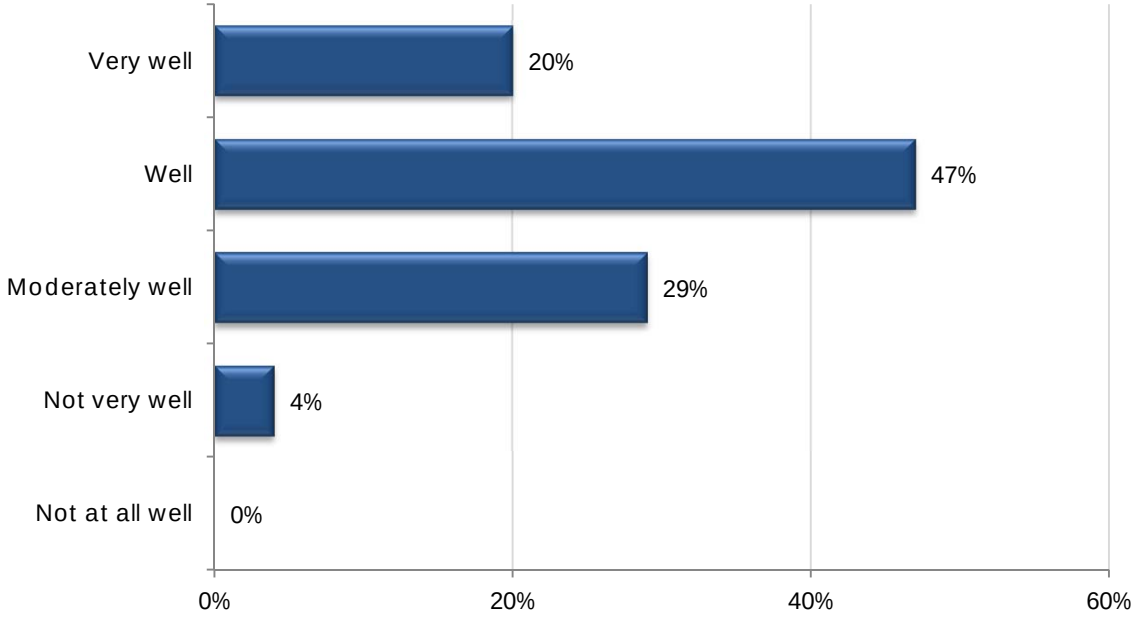
Correlations by sector	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Yes, fully	27	66%	17	55%	105	72%	16	89%	158	71%
Yes, partially	14	34%	14	45%	37	26%	2	11%	63	28%
No	0	0%	0	0%	3	2%	0	0%	3	1%
Total	41	100%	31	100%	145	100%	18	100%	224	100%

Base: n = 224

Opportunities to increase the inclusion of health training for new employees is identified

Opportunities for improving worker training in the control of health issues are identified, with 29% of sites stating that workers are only training ‘ moderately well’ and 4% ‘not very well’

Q. Overall, how well do you believe workers at your site are trained in the control of health issues?



Correlations by sector	Open cut coal	Underground coal	Extractive	Metalliferous	Overall
Mean ratings	3.59	3.65	3.86	4.33	3.83

Correlations by full time employees/permanent contractors	0 to 20	21 to 99	100 or more
Mean ratings	3.91	3.70	3.74

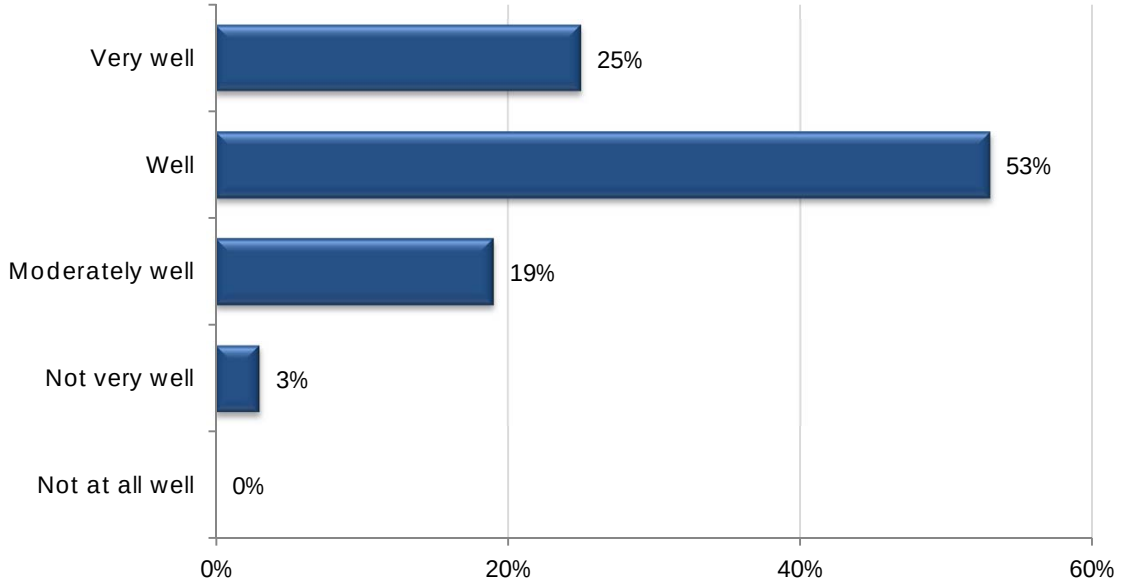
Base: n = 224

Mean ratings: 1 = not at all well, 5 = very well

Sites in the metalliferous sector are most likely to believe their workers are well trained in the control of health issues

Opportunities for improving the training of personnel with specific OH&S responsibilities are identified, with 19% of sites identifying that they are only trained ‘ moderately well’ and 3% ‘not very well’

Q. Overall, how well do you believe people in positions at your site with specific OH&S responsibilities are trained on how to carry out their roles and responsibilities?



Correlations by sector	Open cut coal	Underground coal	Extractive	Metalliferous	Overall
Mean ratings	3.76	3.81	4.01	4.44	4.00

Correlations by full time employees/permanent contractors	0 to 20	21 to 99	100 or more
Mean ratings	4.05	3.91	3.91

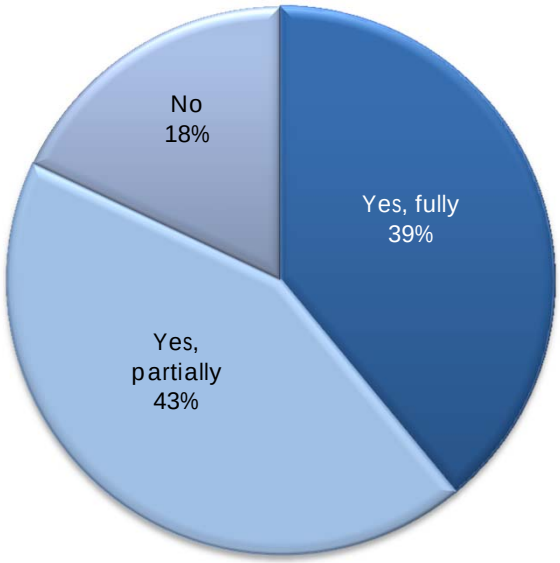
Base: n = 224

Mean ratings: 1 = not at all well, 5 = very well

Sites in the metalliferous sector are most likely to believe their OH&S personnel are well trained

Opportunities are identified to increase pre and post employment health screening, with only 39% of sites stating that they carry this out 'fully'

Q. Is pre and post employment health screening carried out on the workforce?



Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Yes, fully	47	35%	13	39%	27	47%
Yes, partially	55	41%	17	52%	24	42%
No	32	24%	3	9%	6	11%
Total	134	100%	33	100%	57	100%

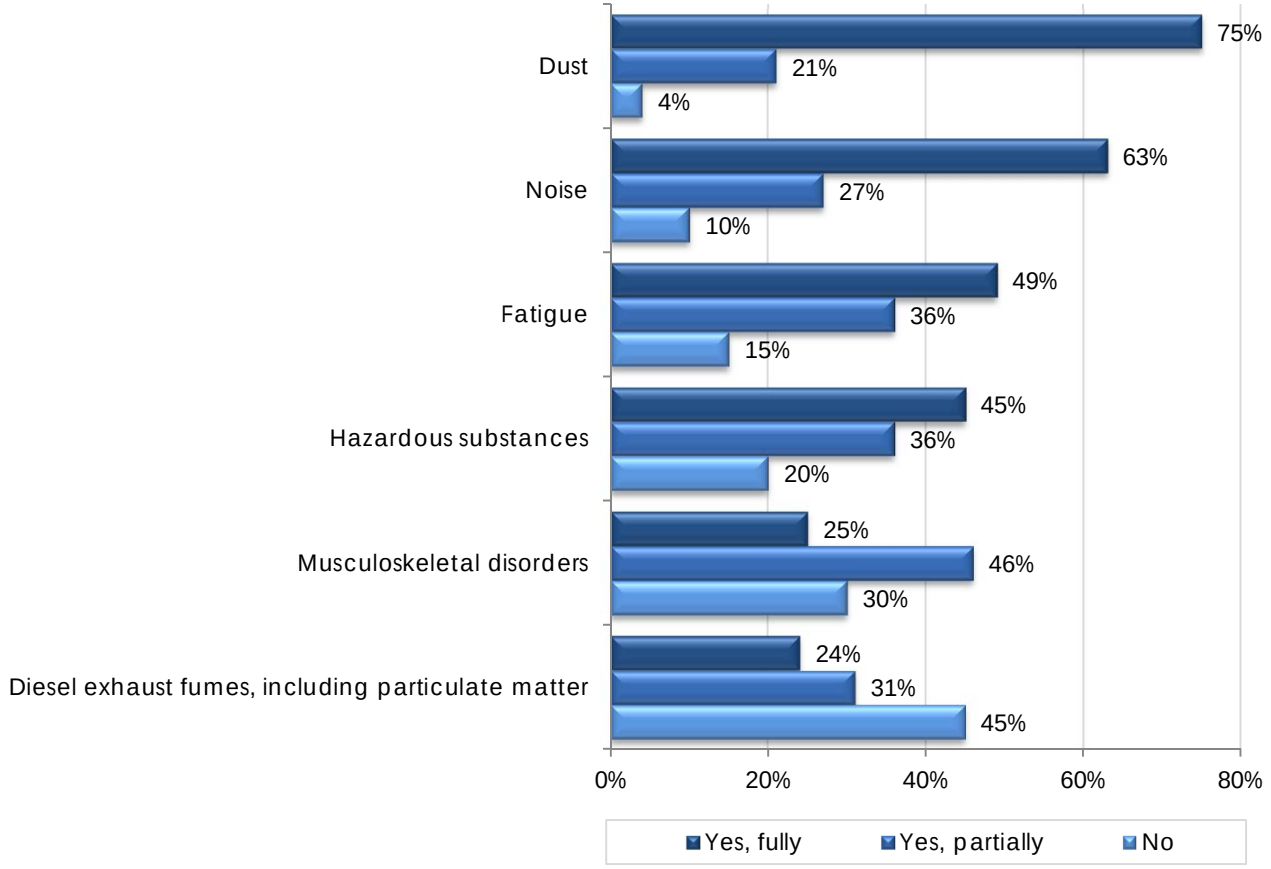
Correlations by sector	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Yes, fully	17	41%	11	35%	52	36%	9	50%	87	39%
Yes, partially	17	41%	16	52%	62	43%	8	44%	96	43%
No	7	17%	4	13%	31	21%	1	6%	41	18%
Total	41	100%	31	100%	145	100%	18	100%	224	100%

Base: n = 224

No statistically significant differences by employer size or sector were identified

Dust and noise are identified as the health hazards most likely to be monitored by health surveillance

Q. Which of the following health hazards are monitored by health surveillance?



Base: n = 224

Opportunities are identified to increase the monitoring of all health hazards

Only limited differences are identified by sector in the monitoring of health hazards

Q. Which of the following health hazards are monitored by health surveillance?

Correlations by sector		Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
		Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Noise	Yes, fully	29	71%	17	55%	90	62%	9	50%	142	63%
	Yes, partially	10	24%	9	29%	39	27%	8	44%	60	27%
	No	2	5%	5	16%	16	11%	1	6%	22	10%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Musculoskeletal disorders	Yes, fully	13	32%	10	32%	27	19%	6	33%	55	25%
	Yes, partially	17	41%	12	39%	73	50%	8	44%	102	46%
	No	11	27%	9	29%	45	31%	4	22%	67	30%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Hazardous substances	Yes, fully	15	37%	14	45%	59	41%	12	67%	100	45%
	Yes, partially	12	29%	10	32%	59	41%	3	17%	80	36%
	No	14	34%	7	23%	27	19%	3	17%	44	20%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Dust	Yes, fully	39	95%	30	97%	95	66%	16	89%	169	75%
	Yes, partially	2	5%	1	3%	42	29%	1	6%	46	21%
	No	0	0%	0	0%	8	6%	1	6%	9	4%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Fatigue	Yes, fully	26	63%	18	58%	65	45%	10	56%	110	49%
	Yes, partially	9	22%	9	29%	59	41%	3	17%	80	36%
	No	6	15%	4	13%	21	14%	5	28%	34	15%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Diesel exhaust fumes, including particulate matter	Yes, fully	6	15%	14	45%	22	15%	12	67%	53	24%
	Yes, partially	12	29%	9	29%	49	34%	1	6%	70	31%
	No	23	56%	8	26%	74	51%	5	28%	101	45%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%

Only limited differences are identified by employer size in the monitoring of health hazards

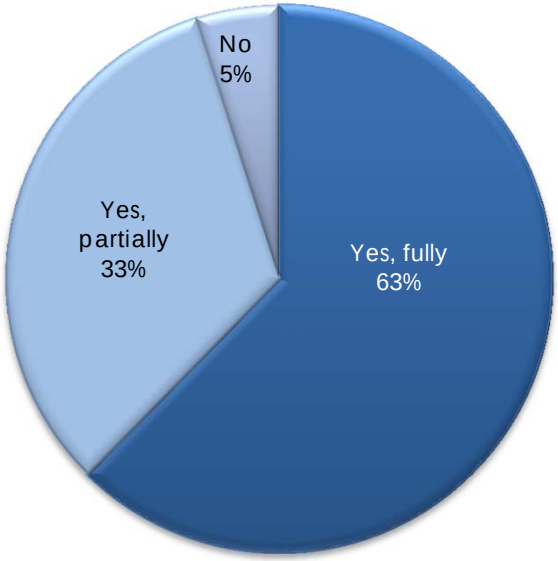
Q. Which of the following health hazards are monitored by health surveillance?

Correlations by full time employees/permanent contractors		0 to 20		21 to 99		100 or more	
		Count	Column %	Count	Column %	Count	Column %
Noise	Yes, fully	79	59%	27	82%	36	63%
	Yes, partially	38	28%	6	18%	16	28%
	No	17	13%	0	0%	5	9%
	Total	134	100%	33	100%	57	100%
Musculoskeletal disorders	Yes, fully	25	19%	11	33%	19	33%
	Yes, partially	67	50%	14	42%	21	37%
	No	42	31%	8	24%	17	30%
	Total	134	100%	33	100%	57	100%
Hazardous substances	Yes, fully	57	43%	15	45%	28	49%
	Yes, partially	50	37%	13	39%	17	30%
	No	27	20%	5	15%	12	21%
	Total	134	100%	33	100%	57	100%
Dust	Yes, fully	85	63%	29	88%	55	96%
	Yes, partially	40	30%	4	12%	2	4%
	No	9	7%	0	0%	0	0%
	Total	134	100%	33	100%	57	100%
Fatigue	Yes, fully	63	47%	17	52%	30	53%
	Yes, partially	50	37%	14	42%	16	28%
	No	21	16%	2	6%	11	19%
	Total	134	100%	33	100%	57	100%
Diesel exhaust fumes, including particulate matter	Yes, fully	21	16%	6	18%	26	46%
	Yes, partially	46	34%	9	27%	15	26%
	No	67	50%	18	55%	16	28%
	Total	134	100%	33	100%	57	100%

Smaller employers are identified as underperforming in relation to the monitoring of dust and diesel exhaust fumes

Opportunities are identified to increase the inclusion of illness management and rehabilitation in health management planning, with only 63% of sites stating that they carry this out ' fully'

Q. Does your health management planning include illness management and rehabilitation?



Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Yes, fully	68	51%	22	67%	50	88%
Yes, partially	57	43%	10	30%	6	11%
No	9	7%	1	3%	1	2%
Total	134	100%	33	100%	57	100%

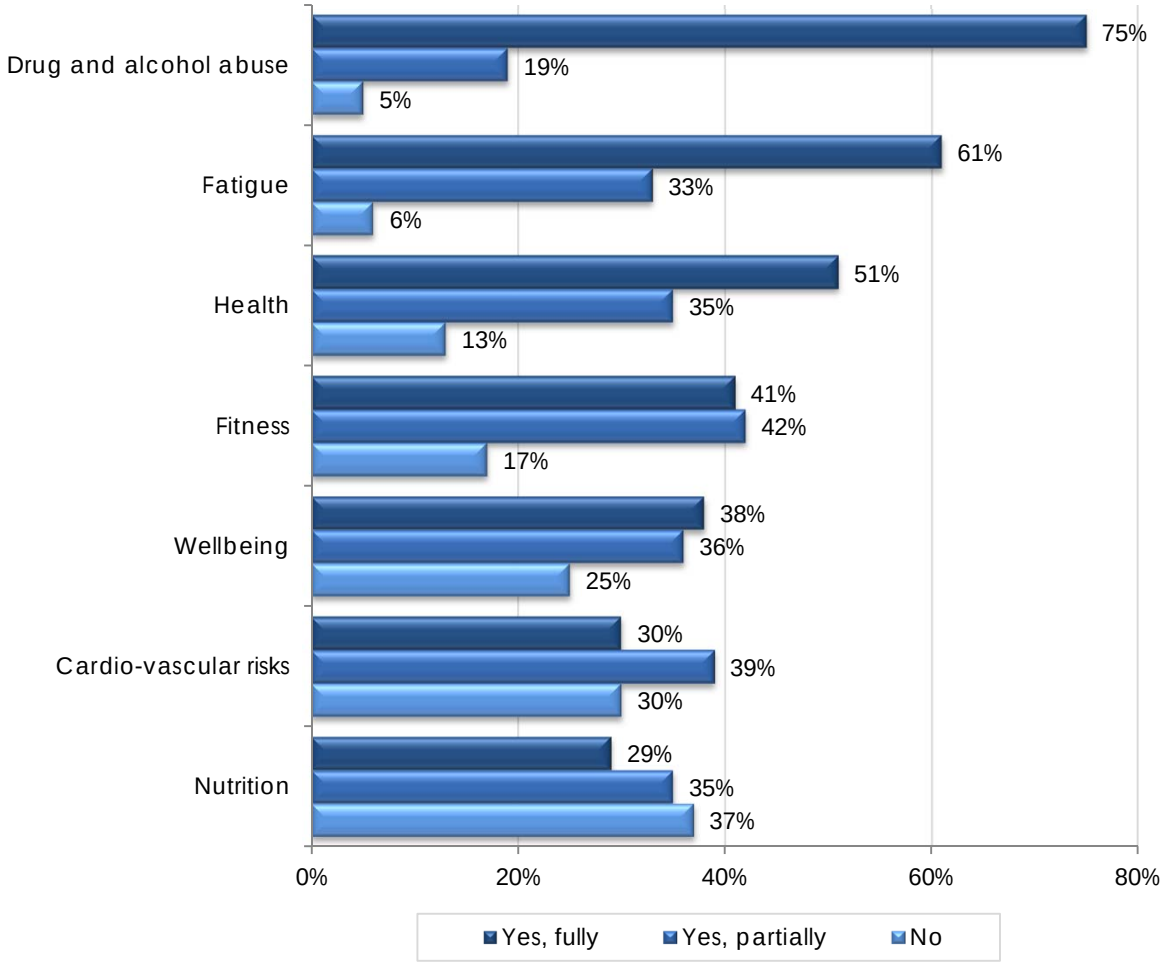
Correlations by sector	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Yes, fully	38	93%	28	90%	72	50%	10	56%	140	63%
Yes, partially	2	5%	2	6%	64	44%	8	44%	73	33%
No	1	2%	1	3%	9	6%	0	0%	11	5%
Total	41	100%	31	100%	145	100%	18	100%	224	100%

Base: n = 224

Larger employers and the open cut/underground coal sectors are identified as the most likely to 'fully' include illness management and rehabilitation in their planning

Drug and alcohol abuse, as well as fatigue, are identified as the issues for which planning includes education and awareness

Q. Does your health management planning include education and awareness of other issues such as:



Base: n = 224

Opportunities are identified to increase education and awareness across all of the health issues within health management planning

With regards to the prompted health issues, the inclusion of education and awareness did not elicit many differences between the sectors

Q. Does your health management planning include education and awareness of other issues such as:

Correlations by sector		Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
		Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Health	Yes, fully	24	59%	17	55%	65	45%	14	78%	115	51%
	Yes, partially	9	22%	8	26%	60	41%	3	17%	79	35%
	No	8	20%	6	19%	20	14%	1	6%	30	13%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Fitness	Yes, fully	23	56%	12	39%	54	37%	5	28%	91	41%
	Yes, partially	12	29%	12	39%	65	45%	8	44%	94	42%
	No	6	15%	7	23%	26	18%	5	28%	39	17%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Nutrition	Yes, fully	20	49%	14	45%	28	19%	5	28%	64	29%
	Yes, partially	10	24%	9	29%	53	37%	9	50%	78	35%
	No	11	27%	8	26%	64	44%	4	22%	82	37%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Wellbeing	Yes, fully	19	46%	13	42%	45	31%	11	61%	86	38%
	Yes, partially	8	20%	10	32%	61	42%	4	22%	81	36%
	No	14	34%	8	26%	39	27%	3	17%	57	25%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Drug and alcohol abuse	Yes, fully	31	76%	21	68%	105	72%	17	94%	169	75%
	Yes, partially	10	24%	10	32%	28	19%	1	6%	43	19%
	No	0	0%	0	0%	12	8%	0	0%	12	5%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Fatigue	Yes, fully	26	63%	21	68%	83	57%	11	61%	136	61%
	Yes, partially	15	37%	10	32%	49	34%	7	39%	75	33%
	No	0	0%	0	0%	13	9%	0	0%	13	6%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Cardio-vascular risks	Yes, fully	20	49%	15	48%	29	20%	7	39%	68	30%
	Yes, partially	8	20%	7	23%	66	46%	10	56%	88	39%
	No	13	32%	9	29%	50	34%	1	6%	68	30%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%

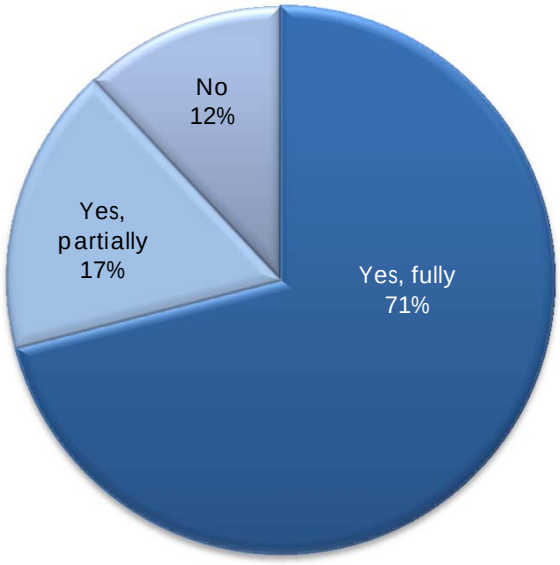
The larger the employer, the more likely that education and awareness of the prompted issues is included within health management planning

Q. Does your health management planning include education and awareness of other issues such as:

Correlations by full time employees/permanent contractors		0 to 20		21 to 99		100 or more	
		Count	Column %	Count	Column %	Count	Column %
Health	Yes, fully	57	43%	17	52%	41	72%
	Yes, partially	58	43%	15	45%	6	11%
	No	19	14%	1	3%	10	18%
	Total	134	100%	33	100%	57	100%
Fitness	Yes, fully	49	37%	13	39%	29	51%
	Yes, partially	60	45%	18	55%	16	28%
	No	25	19%	2	6%	12	21%
	Total	134	100%	33	100%	57	100%
Nutrition	Yes, fully	25	19%	11	33%	28	49%
	Yes, partially	47	35%	14	42%	17	30%
	No	62	46%	8	24%	12	21%
	Total	134	100%	33	100%	57	100%
Wellbeing	Yes, fully	42	31%	10	30%	34	60%
	Yes, partially	58	43%	13	39%	10	18%
	No	34	25%	10	30%	13	23%
	Total	134	100%	33	100%	57	100%
Drug and alcohol abuse	Yes, fully	99	74%	23	70%	47	82%
	Yes, partially	23	17%	10	30%	10	18%
	No	12	9%	0	0%	0	0%
	Total	134	100%	33	100%	57	100%
Fatigue	Yes, fully	78	58%	17	52%	41	72%
	Yes, partially	43	32%	16	48%	16	28%
	No	13	10%	0	0%	0	0%
	Total	134	100%	33	100%	57	100%
Cardio-vascular risks	Yes, fully	31	23%	8	24%	29	51%
	Yes, partially	59	44%	17	52%	12	21%
	No	44	33%	8	24%	16	28%
	Total	134	100%	33	100%	57	100%

A formal employee assistance program is identified as being 'fully' accessible at 71% of sites

Q. Is there a formal employee assistance program accessible by all at this site?



Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Yes, fully	79	59%	26	79%	54	95%
Yes, partially	30	22%	5	15%	3	5%
No	25	19%	2	6%	0	0%
Total	134	100%	33	100%	57	100%

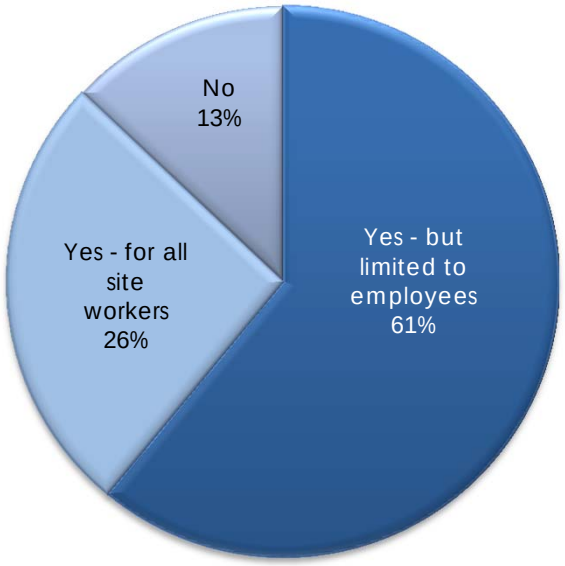
Correlations by sector	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Yes, fully	37	90%	31	100%	88	61%	14	78%	159	71%
Yes, partially	3	7%	0	0%	33	23%	2	11%	38	17%
No	1	2%	0	0%	24	17%	2	11%	27	12%
Total	41	100%	31	100%	145	100%	18	100%	224	100%

Base: n = 224

Larger employers and the open cut/underground coal sectors are identified as being most likely to have a fully accessible employee assistance program

Ongoing monitoring and evaluation of the effectiveness of the health management plan is occurring, but is limited to employees at 61% of sites, whilst at 26% of sites it is occurring for all site workers

Q. Does your health management planning include on-going monitoring and evaluation of the effectiveness of the health management plan?



Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Yes - but limited to employees	85	63%	25	76%	26	46%
Yes - for all site workers	32	24%	7	21%	20	35%
No	17	13%	1	3%	11	19%
Total	134	100%	33	100%	57	100%

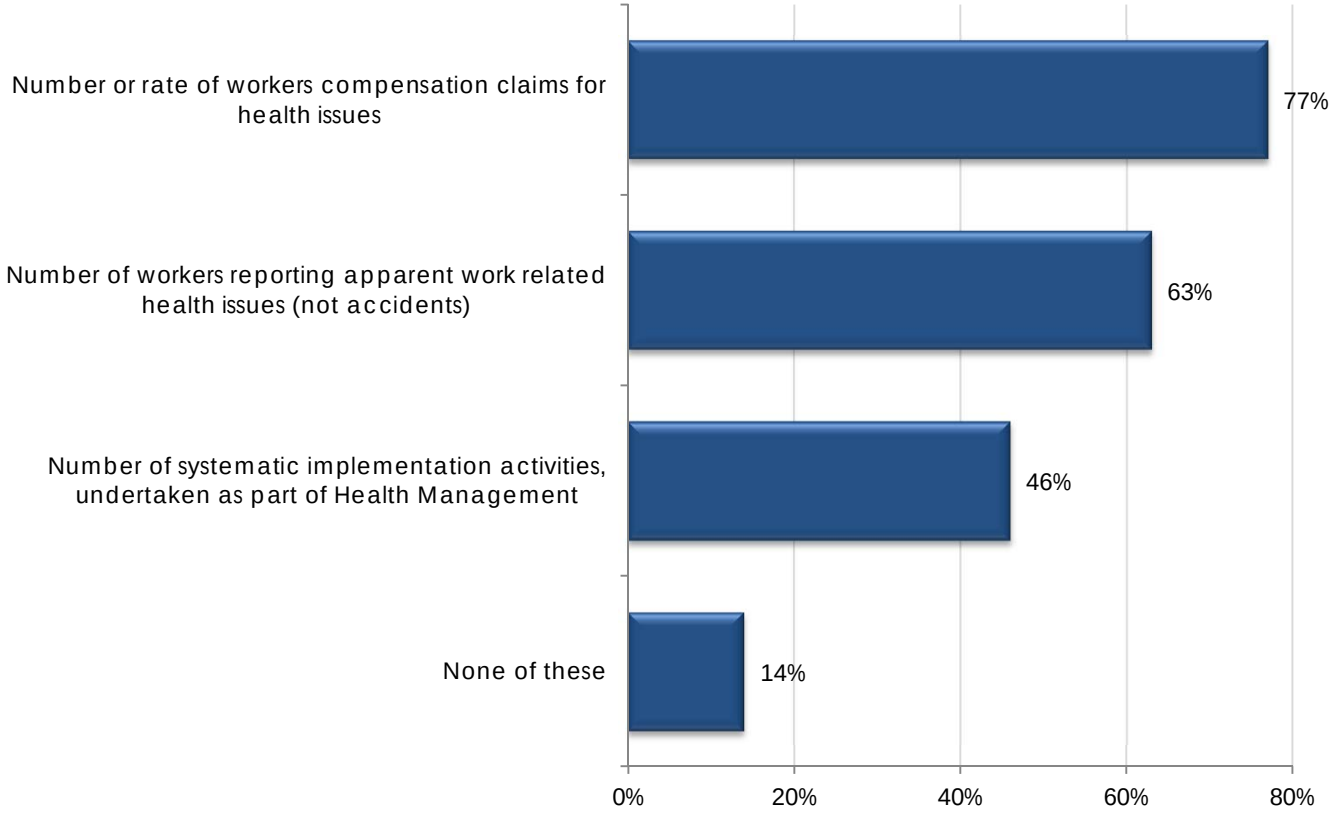
Correlations by sector	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Yes - but limited to employees	26	63%	16	52%	95	66%	9	50%	136	61%
Yes - for all site workers	8	20%	13	42%	30	21%	8	44%	59	26%
No	7	17%	2	6%	20	14%	1	6%	29	13%
Total	41	100%	31	100%	145	100%	18	100%	224	100%

Base: n = 224

Opportunities are identified to increase monitoring and evaluation of health management plan effectiveness, particularly at sites which are large employers

The effectiveness of health management planning is mainly measured through the number or rate of workers compensation claims

Q. Which of the following indicators are identified in your health management planning to monitor its effectiveness?



Base: n = 224

Open cut and underground coal sites, along with the larger employers are the most likely sites to utilise the prompted measures when analysing effectiveness

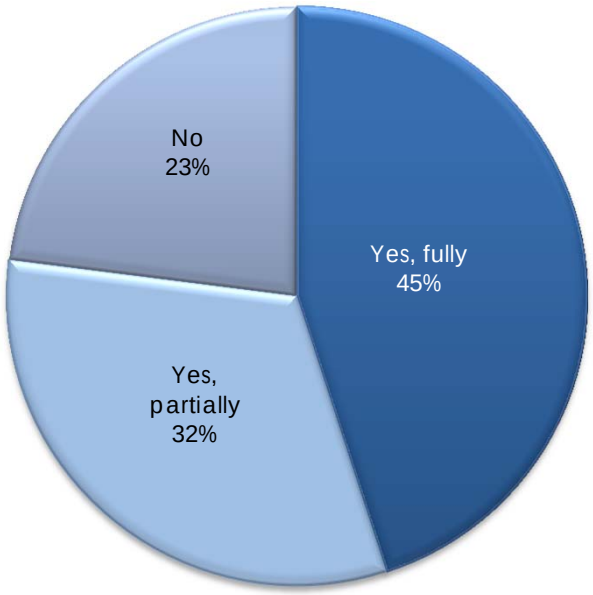
Q. Which of the following indicators are identified in your health management planning to monitor its effectiveness?

Correlations by sector	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Number or rate of workers compensation claims for health issues	38	93%	29	94%	106	73%	11	61%	173	77%
Number of workers reporting apparent work related health issues (not accidents)	36	88%	28	90%	79	54%	10	56%	142	63%
Number of systematic implementation activities, undertaken as part of Health Management	31	76%	27	87%	42	29%	13	72%	104	46%
None of these	2	5%	1	3%	27	19%	2	11%	32	14%
Total	41	100%	31	100%	145	100%	18	100%	224	100%

Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Number or rate of workers compensation claims for health issues	95	71%	30	91%	48	84%
Number of workers reporting apparent work related health issues (not accidents)	68	51%	27	82%	47	82%
Number of systematic implementation activities, undertaken as part of Health Management	36	27%	18	55%	50	88%
None of these	29	22%	0	0%	3	5%
Total	134	100%	33	100%	57	100%

Indicators are only identified as 'fully' following a set protocol in 45% of cases

Q. Do indicators follow a set protocol (e.g. global reporting index)?



Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Yes, fully	49	47%	14	42%	23	43%
Yes, partially	31	30%	11	33%	20	37%
No	25	24%	8	24%	11	20%
Total	105	100%	33	100%	54	100%

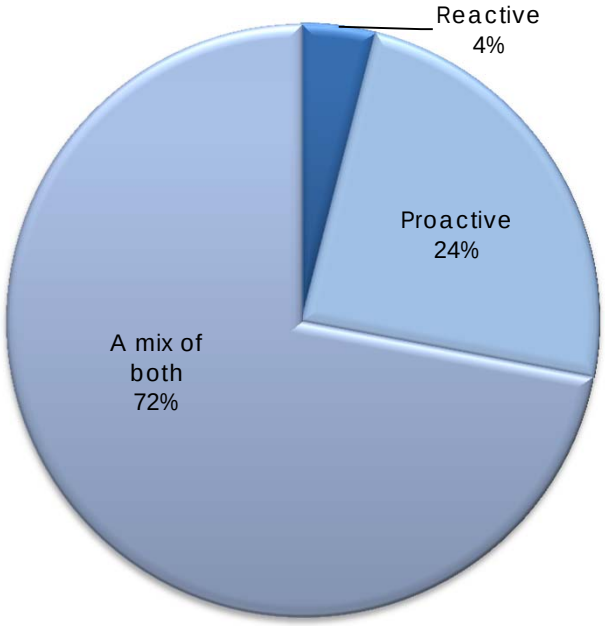
Correlations by sector	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Yes, fully	12	31%	13	43%	53	45%	11	69%	86	45%
Yes, partially	19	49%	11	37%	36	31%	3	19%	62	32%
No	8	21%	6	20%	29	25%	2	13%	44	23%
Total	39	100%	30	100%	118	100%	16	100%	192	100%

Base: n = 192

The outcomes of this question indicate no statistically significant differences by sector or employer size

Only 4% of sites consider their approach to health management planning to be purely reactive

Q. Overall, do you consider your site's approach to health management planning to be:



Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Reactive	9	7%	1	3%	0	0%
Proactive	41	31%	3	9%	9	16%
A mix of both	84	63%	29	88%	48	84%
Total	134	100%	33	100%	57	100%

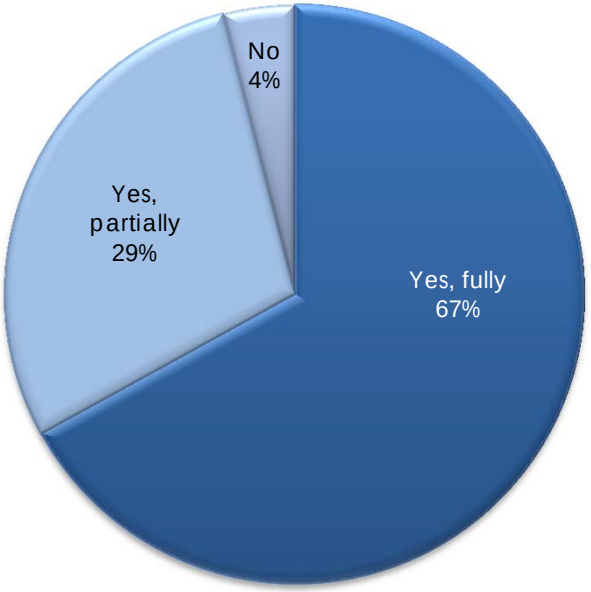
Correlations by sector	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Reactive	1	2%	0	0%	8	6%	1	6%	10	4%
Proactive	4	10%	1	3%	43	30%	5	28%	53	24%
A mix of both	36	88%	30	97%	94	65%	12	67%	161	72%
Total	41	100%	31	100%	145	100%	18	100%	224	100%

Base: n = 224

Occupational Noise Management

Identification of noise risks is moderately high (67% fully), however, 29% of sites have only partially identified their noise risks

Q. Have you identified your occupational noise risks?



Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Yes, fully	96	72%	26	79%	28	49%
Yes, partially	33	25%	7	21%	24	42%
No	5	4%	0	0%	5	9%
Total	134	100%	33	100%	57	100%

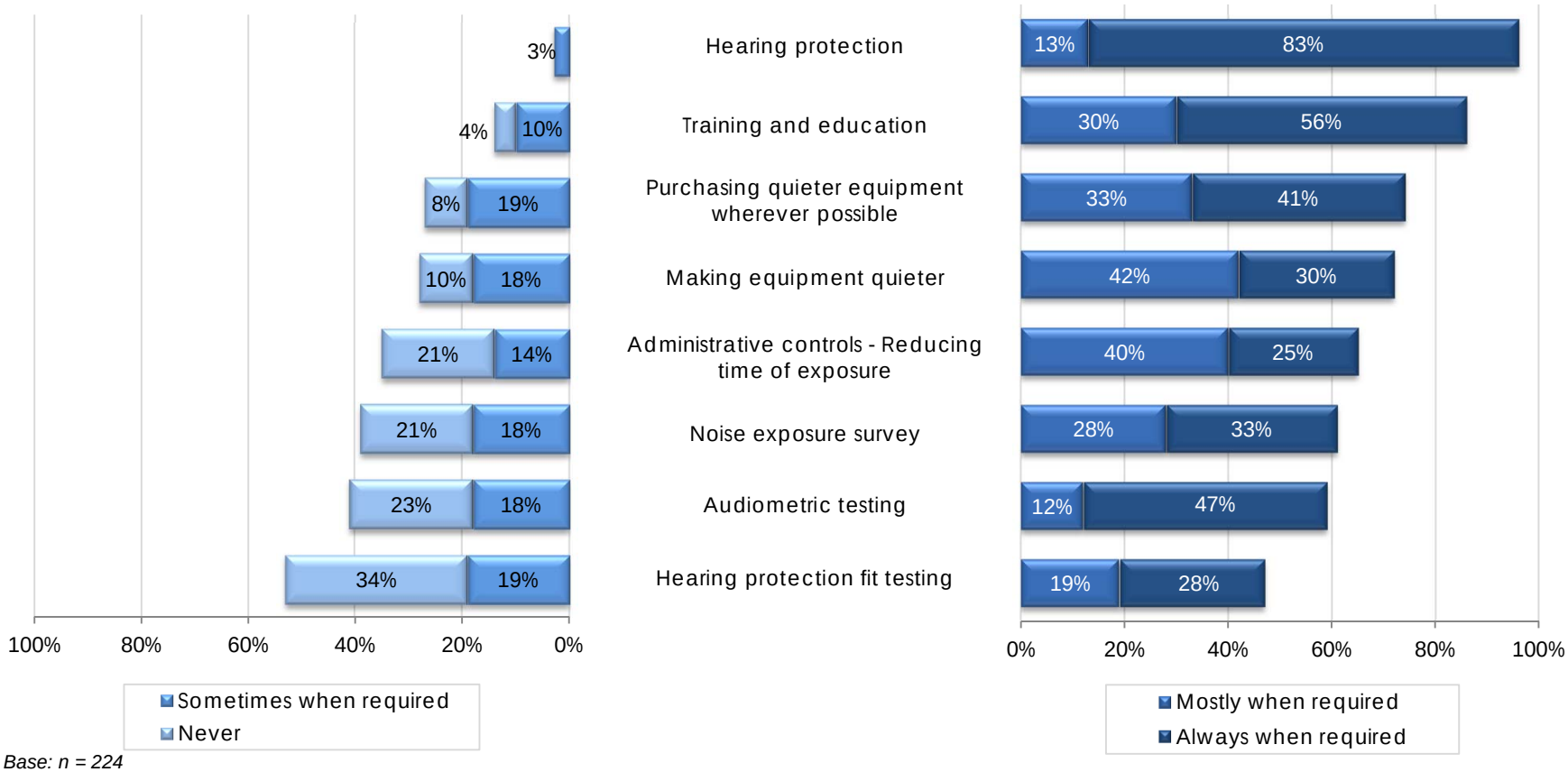
	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Yes, fully	27	66%	9	29%	101	70%	16	89%	150	67%
Yes, partially	9	22%	17	55%	39	27%	2	11%	64	29%
No	5	12%	5	16%	5	3%	0	0%	10	4%
Total	41	100%	31	100%	145	100%	18	100%	224	100%

Base: n = 224

Smaller employees are the most likely to have fully identified noise risks, whilst underground coal is the least likely sector to have fully identified their noise risks

Sites are identified as utilising a variety of measures for occupational noise management, with hearing protection the most common

Q. Which of the following do you utilise at your site for occupational noise management?



Base: n = 224

Significant opportunities for utilising further measures are identified, with over one quarter of sites never or only sometimes utilising 6 of the 8 prompted measures

Opportunities to increase hearing protection fit testing in the open cut and underground coal sectors are identified

Q. Which of the following do you utilise at your site for occupational noise management?

Correlations by sector		Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
		Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Hearing protection	Always when required	37	90%	26	84%	116	80%	17	94%	187	83%
	Mostly when required	4	10%	5	16%	21	14%	1	6%	29	13%
	Sometimes when required	0	0%	0	0%	7	5%	0	0%	7	3%
	Never	0	0%	0	0%	1	1%	0	0%	1	0%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Hearing protection fit testing	Always when required	8	20%	6	19%	43	30%	6	33%	63	28%
	Mostly when required	5	12%	2	6%	33	23%	4	22%	42	19%
	Sometimes when required	4	10%	7	23%	31	21%	2	11%	43	19%
	Never	24	59%	16	52%	38	26%	6	33%	76	34%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Audiometric testing	Always when required	35	85%	23	74%	45	31%	12	67%	106	47%
	Mostly when required	0	0%	3	10%	23	16%	1	6%	27	12%
	Sometimes when required	3	7%	2	6%	32	22%	3	17%	40	18%
	Never	3	7%	3	10%	45	31%	2	11%	51	23%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Noise exposure survey	Always when required	18	44%	11	35%	34	23%	13	72%	73	33%
	Mostly when required	3	7%	7	23%	53	37%	1	6%	63	28%
	Sometimes when required	6	15%	4	13%	28	19%	3	17%	41	18%
	Never	14	34%	9	29%	30	21%	1	6%	47	21%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%

Opportunities to increase training and education in all sectors are identified

Q. Which of the following do you utilise at your site for occupational noise management?

Correlations by sector		Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
		Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Administrative controls - Reducing time of exposure	Always when required	19	46%	8	26%	28	19%	7	39%	56	25%
	Mostly when required	8	20%	6	19%	74	51%	4	22%	90	40%
	Sometimes when required	8	20%	4	13%	18	12%	2	11%	32	14%
	Never	6	15%	13	42%	25	17%	5	28%	46	21%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Training and education	Always when required	27	66%	14	45%	76	52%	16	89%	125	56%
	Mostly when required	10	24%	10	32%	48	33%	1	6%	68	30%
	Sometimes when required	2	5%	4	13%	16	11%	1	6%	23	10%
	Never	2	5%	3	10%	5	3%	0	0%	8	4%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Making equipment quieter	Always when required	13	32%	2	6%	46	32%	8	44%	68	30%
	Mostly when required	17	41%	15	48%	66	46%	3	17%	93	42%
	Sometimes when required	9	22%	8	26%	20	14%	3	17%	40	18%
	Never	2	5%	6	19%	13	9%	4	22%	23	10%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Purchasing quieter equipment wherever possible	Always when required	16	39%	6	19%	65	45%	6	33%	91	41%
	Mostly when required	10	24%	12	39%	49	34%	9	50%	73	33%
	Sometimes when required	12	29%	7	23%	24	17%	0	0%	43	19%
	Never	3	7%	6	19%	7	5%	3	17%	17	8%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%

Whilst larger employees are identified as less likely to utilise hearing protection fit testing, they are more likely to utilise audiometric testing

Q. Which of the following do you utilise at your site for occupational noise management?

Correlations by full time employees/permanent contractors		0 to 20		21 to 99		100 or more	
		Count	Column %	Count	Column %	Count	Column %
Hearing protection	Always when required	104	78%	31	94%	52	91%
	Mostly when required	22	16%	2	6%	5	9%
	Sometimes when required	7	5%	0	0%	0	0%
	Never	1	1%	0	0%	0	0%
	Total	134	100%	33	100%	57	100%
Hearing protection fit testing	Always when required	40	30%	9	27%	14	25%
	Mostly when required	28	21%	9	27%	5	9%
	Sometimes when required	29	22%	7	21%	7	12%
	Never	37	28%	8	24%	31	54%
	Total	134	100%	33	100%	57	100%
Audiometric testing	Always when required	37	28%	24	73%	45	79%
	Mostly when required	22	16%	2	6%	3	5%
	Sometimes when required	30	22%	5	15%	5	9%
	Never	45	34%	2	6%	4	7%
	Total	134	100%	33	100%	57	100%
Noise exposure survey	Always when required	27	20%	18	55%	28	49%
	Mostly when required	48	36%	5	15%	10	18%
	Sometimes when required	28	21%	7	21%	6	11%
	Never	31	23%	3	9%	13	23%
	Total	134	100%	33	100%	57	100%

Smaller employers are identified as less likely to utilise noise exposure surveys

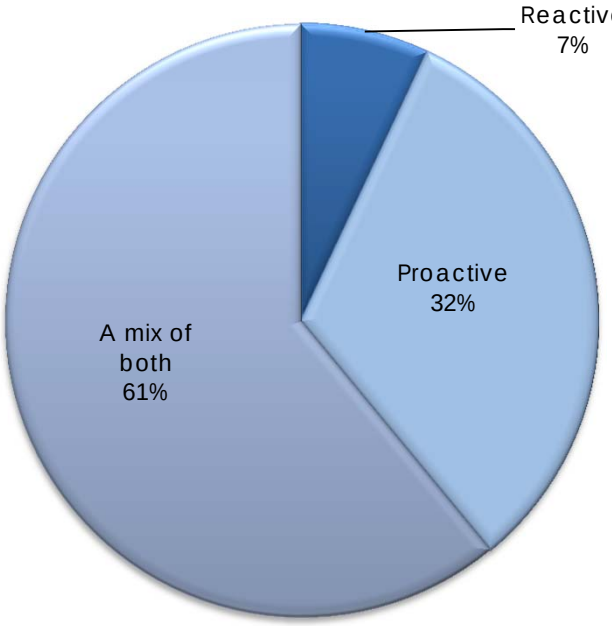
The smaller the employer, the more likely they were to state that they purchase quieter equipment wherever possible

Q. Which of the following do you utilise at your site for occupational noise management?

Correlations by full time employees/permanent contractors		0 to 20		21 to 99		100 or more	
		Count	Column %	Count	Column %	Count	Column %
Administrative controls - Reducing time of exposure	Always when required	31	23%	7	21%	18	32%
	Mostly when required	61	46%	17	52%	12	21%
	Sometimes when required	19	14%	5	15%	8	14%
	Never	23	17%	4	12%	19	33%
	Total	134	100%	33	100%	57	100%
Training and education	Always when required	71	53%	20	61%	34	60%
	Mostly when required	41	31%	10	30%	17	30%
	Sometimes when required	17	13%	3	9%	3	5%
	Never	5	4%	0	0%	3	5%
	Total	134	100%	33	100%	57	100%
Making equipment quieter	Always when required	46	34%	5	15%	17	30%
	Mostly when required	55	41%	21	64%	17	30%
	Sometimes when required	17	13%	6	18%	17	30%
	Never	16	12%	1	3%	6	11%
	Total	134	100%	33	100%	57	100%
Purchasing quieter equipment wherever possible	Always when required	59	44%	18	55%	14	25%
	Mostly when required	44	33%	10	30%	19	33%
	Sometimes when required	22	16%	4	12%	17	30%
	Never	9	7%	1	3%	7	12%
	Total	134	100%	33	100%	57	100%

7% of sites consider their approach to occupational noise management to be purely reactive

Q. Overall, do you consider your site's approach to occupational noise management to be:



Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Reactive	11	8%	2	6%	3	5%
Proactive	51	38%	6	18%	14	25%
A mix of both	72	54%	25	76%	40	70%
Total	134	100%	33	100%	57	100%

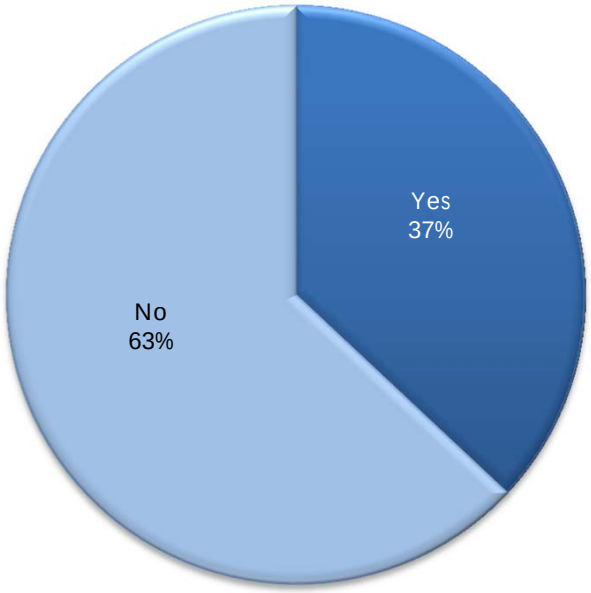
Correlations by sector	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Reactive	1	2%	4	13%	10	7%	1	6%	16	7%
Proactive	6	15%	4	13%	56	39%	7	39%	71	32%
A mix of both	34	83%	23	74%	79	54%	10	56%	137	61%
Total	41	100%	31	100%	145	100%	18	100%	224	100%

Base: n = 224

Musculoskeletal Disorder (MSD)

Only a low percentage of sites (37%) have a program to identify their risks in MSD

Q. Do you have a program to identify your risks in MSD?



Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Yes	44	33%	11	33%	28	49%
No	90	67%	22	67%	29	51%
Total	134	100%	33	100%	57	100%

Correlations by sector	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Yes	22	54%	12	39%	44	30%	6	33%	83	37%
No	19	46%	19	61%	101	70%	12	67%	141	63%
Total	41	100%	31	100%	145	100%	18	100%	224	100%

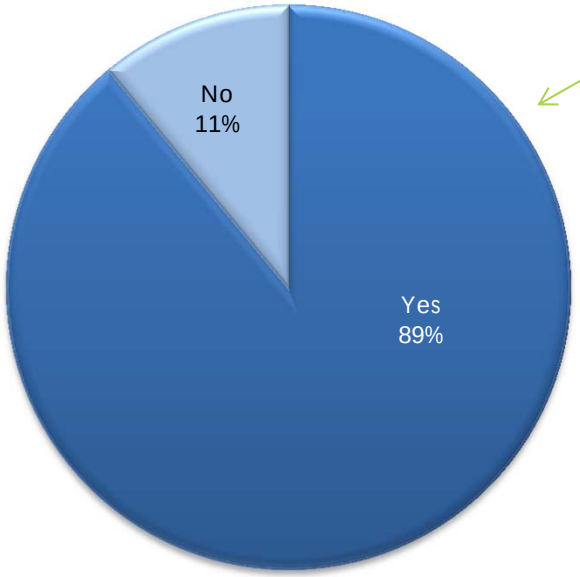
Base: n = 224

The open cut coal sector is identified as the most likely to have a program to identify their risks in MSD

Of the sites with a program to identify their risks in MSD, the majority (89%) state that this is included in their health management planning

Q. Do you have a program to identify your risks in MSD?

Q. (If yes), are they included in your health management planning?



This represents 33% of all mine sites

Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Yes	38	86%	9	82%	27	96%
No	6	14%	2	18%	1	4%
Total	44	100%	11	100%	28	100%

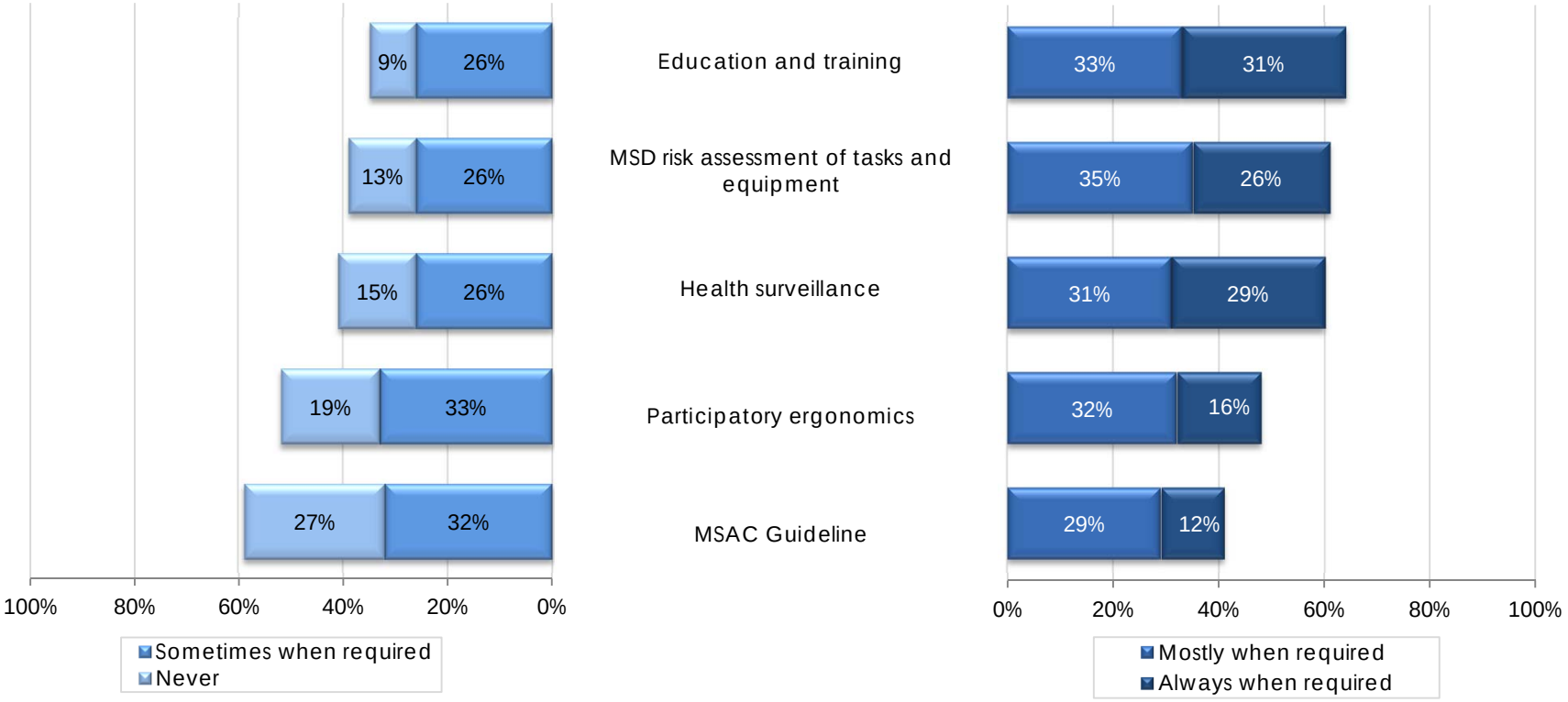
Correlations by sector	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Yes	20	91%	12	100%	37	84%	6	100%	74	89%
No	2	9%	0	0%	7	16%	0	0%	9	11%
Total	22	100%	12	100%	44	100%	6	100%	83	100%

Base: n = 83

No statistically significant differences are identified by sector or employer size

Significant opportunities are identified to increase the utilisation of all the prompted measures for MSD management

Q. Which of the following do you utilise at your site for MSD management?



Base: n = 224

Less than one third of sites are identified as 'always' utilising any of the 5 prompted measures for MSD management

The open cut coal sector is identified as the most likely to utilise any of the prompted measures

Q. Which of the following do you utilise at your site for MSD management?

Correlations by sector		Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
		Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
MSD risk assessment of tasks and equipment	Always when required	16	39%	10	32%	29	20%	8	44%	59	26%
	Mostly when required	7	17%	7	23%	58	40%	8	44%	78	35%
	Sometimes when required	10	24%	6	19%	42	29%	1	6%	59	26%
	Never	8	20%	8	26%	16	11%	1	6%	28	13%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Health surveillance	Always when required	22	54%	12	39%	27	19%	7	39%	64	29%
	Mostly when required	3	7%	5	16%	54	37%	7	39%	69	31%
	Sometimes when required	8	20%	7	23%	42	29%	3	17%	58	26%
	Never	8	20%	7	23%	22	15%	1	6%	33	15%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Education and training	Always when required	20	49%	12	39%	36	25%	6	33%	70	31%
	Mostly when required	5	12%	9	29%	53	37%	10	56%	75	33%
	Sometimes when required	10	24%	5	16%	43	30%	1	6%	59	26%
	Never	6	15%	5	16%	13	9%	1	6%	20	9%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%

The open cut coal sector is identified as the most likely to utilise any of the prompted measures

Q. Which of the following do you utilise at your site for MSD management?

Correlations by sector		Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
		Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Participatory ergonomics	Always when required	14	34%	4	13%	14	10%	4	22%	35	16%
	Mostly when required	3	7%	11	35%	51	35%	7	39%	72	32%
	Sometimes when required	9	22%	6	19%	58	40%	4	22%	75	33%
	Never	15	37%	10	32%	22	15%	3	17%	42	19%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
MSAC Guideline	Always when required	11	27%	2	6%	12	8%	1	6%	26	12%
	Mostly when required	1	2%	5	16%	50	34%	9	50%	65	29%
	Sometimes when required	11	27%	7	23%	53	37%	6	33%	72	32%
	Never	18	44%	17	55%	30	21%	2	11%	61	27%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%

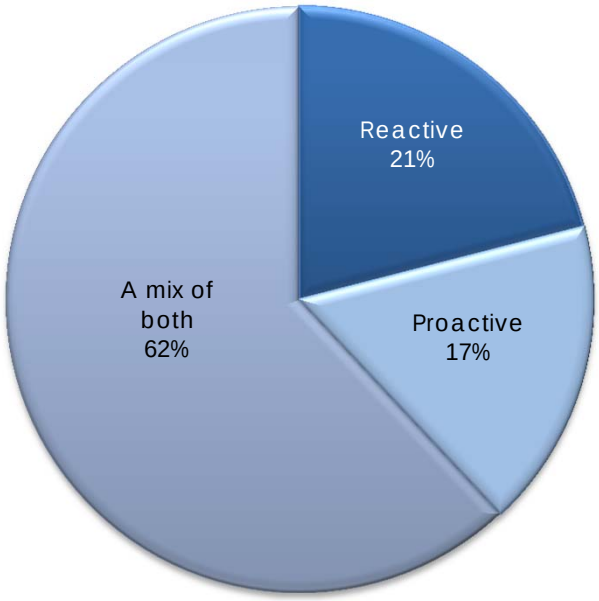
There were not identified trends by employer size in the utilisation of any of the measures

Q. Which of the following do you utilise at your site for MSD management?

Correlations by full time employees/permanent contractors		0 to 20		21 to 99		100 or more	
		Count	Column %	Count	Column %	Count	Column %
MSD risk assessment of tasks and equipment	Always when required	33	25%	8	24%	18	32%
	Mostly when required	48	36%	16	48%	14	25%
	Sometimes when required	40	30%	8	24%	11	19%
	Never	13	10%	1	3%	14	25%
	Total	134	100%	33	100%	57	100%
Health surveillance	Always when required	28	21%	12	36%	24	42%
	Mostly when required	45	34%	16	48%	8	14%
	Sometimes when required	42	31%	4	12%	12	21%
	Never	19	14%	1	3%	13	23%
	Total	134	100%	33	100%	57	100%
Education and training	Always when required	34	25%	13	39%	23	40%
	Mostly when required	46	34%	15	45%	14	25%
	Sometimes when required	41	31%	4	12%	14	25%
	Never	13	10%	1	3%	6	11%
	Total	134	100%	33	100%	57	100%
Participatory ergonomics	Always when required	13	10%	7	21%	15	26%
	Mostly when required	46	34%	11	33%	15	26%
	Sometimes when required	55	41%	6	18%	14	25%
	Never	20	15%	9	27%	13	23%
	Total	134	100%	33	100%	57	100%
MSAC Guideline	Always when required	13	10%	4	12%	9	16%
	Mostly when required	45	34%	8	24%	12	21%
	Sometimes when required	48	36%	11	33%	13	23%
	Never	28	21%	10	30%	23	40%
	Total	134	100%	33	100%	57	100%

A high level of reactivity is identified, with 21% of sites considering their approach to MSD to be purely reactive

Q. Overall, do you consider your site's approach to MSD to be:



Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Reactive	21	16%	9	27%	17	30%
Proactive	27	20%	4	12%	7	12%
A mix of both	86	64%	20	61%	33	58%
Total	134	100%	33	100%	57	100%

Correlations by sector	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Reactive	11	27%	8	26%	27	19%	8	44%	47	21%
Proactive	5	12%	4	13%	29	20%	0	0%	38	17%
A mix of both	25	61%	19	61%	89	61%	10	56%	139	62%
Total	41	100%	31	100%	145	100%	18	100%	224	100%

Base: n = 224

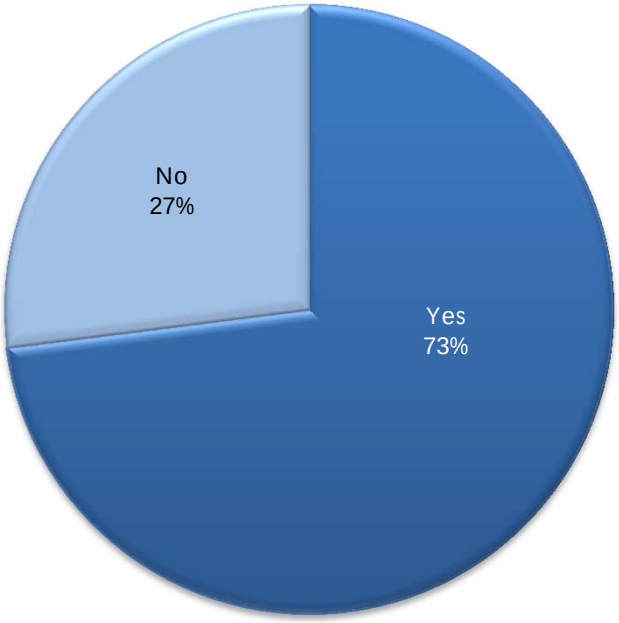
No statistically significant differences by sector or employer size were identified

Diesel Particulate Management

(Underground mining only)

A moderately high percentage of underground sites (73%) have a program to identify their risks in diesel particulate management

Q. Do you have a program to identify your risks in diesel particulate management?



Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Yes	1	50%	3	60%	26	76%
No	1	50%	2	40%	8	24%
Total	2	100%	5	100%	34	100%

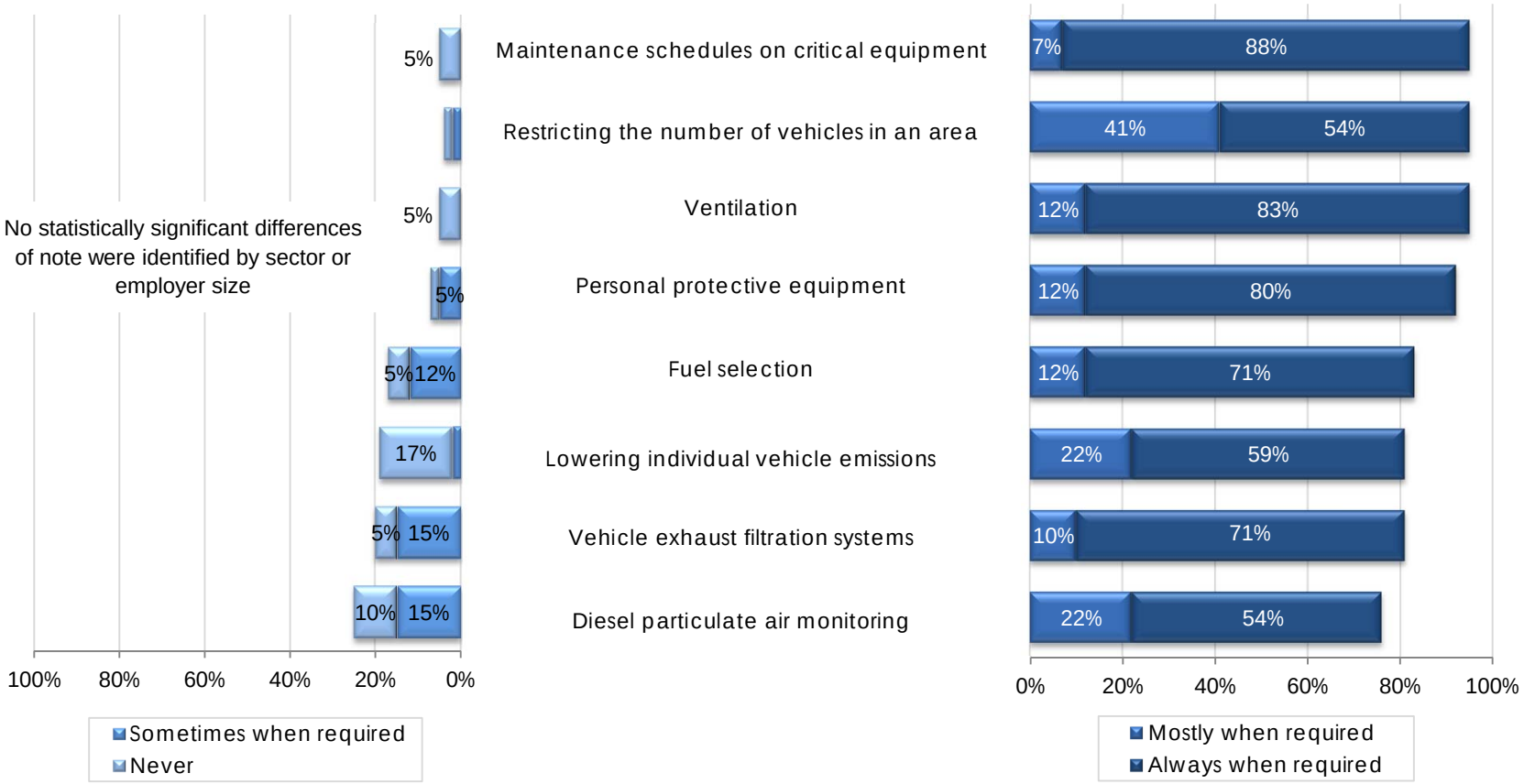
Correlations by sector	Underground coal		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %
Yes	20	69%	10	83%	30	73%
No	9	31%	2	17%	11	27%
Total	29	100%	12	100%	41	100%

Base: n = 41

The underground coal sector was less likely than the metalliferous sector to have a program to identify their risks in diesel particulate management

Strong utilisation is identified with all the prompted measures for diesel particulate management

Q. Which of the following do you utilise to ensure diesel particulate management at this site?

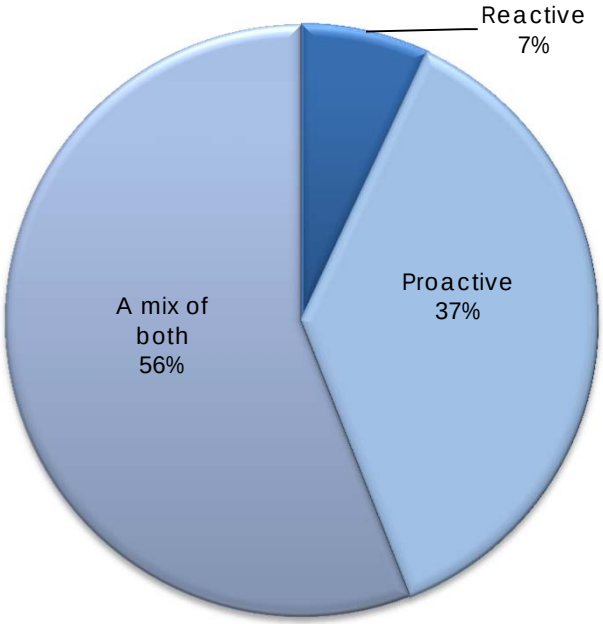


Base: n = 41

Opportunities for utilising further measures are identified, with 20% or more of sites never or only sometimes utilising vehicle exhaust filtration systems and diesel particulate air monitoring

7% of sites consider their approach to diesel particulate management to be purely reactive

Q. Overall, do you consider your site's approach to diesel particulate management to be:



Correlations by full time employees/permanent contractors	Underground coal		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %
Reactive	0	0%	1	20%	2	6%
Proactive	0	0%	2	40%	13	38%
A mix of both	2	100%	2	40%	19	56%
Total	2	100%	5	100%	34	100%

Correlations by sector	Underground coal		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %
Reactive	2	7%	1	8%	3	7%
Proactive	10	34%	5	42%	15	37%
A mix of both	17	59%	6	50%	23	56%
Total	29	100%	12	100%	41	100%

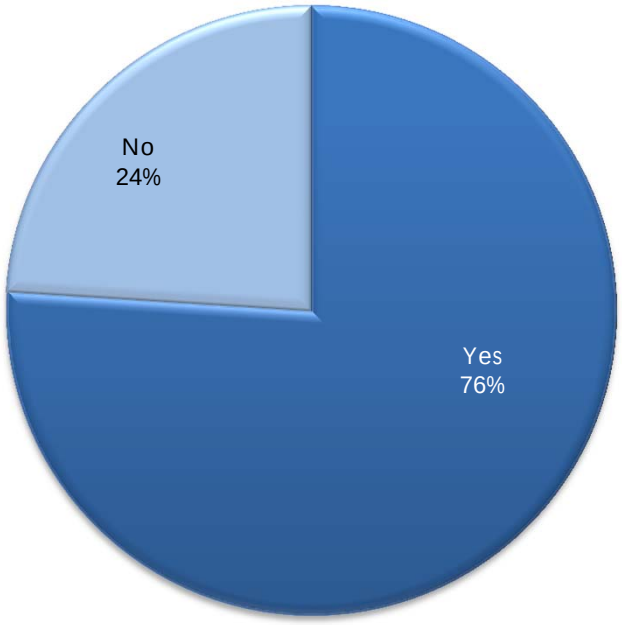
Base: n = 41

No statistically significant differences by sector or employee size were identified

Fatigue Management

A moderately high percentage of sites (76%) have a program to identify their risks in fatigue management

Q. Do you have a program to identify your risks in fatigue management?



Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Yes	85	63%	31	94%	54	95%
No	49	37%	2	6%	3	5%
Total	134	100%	33	100%	57	100%

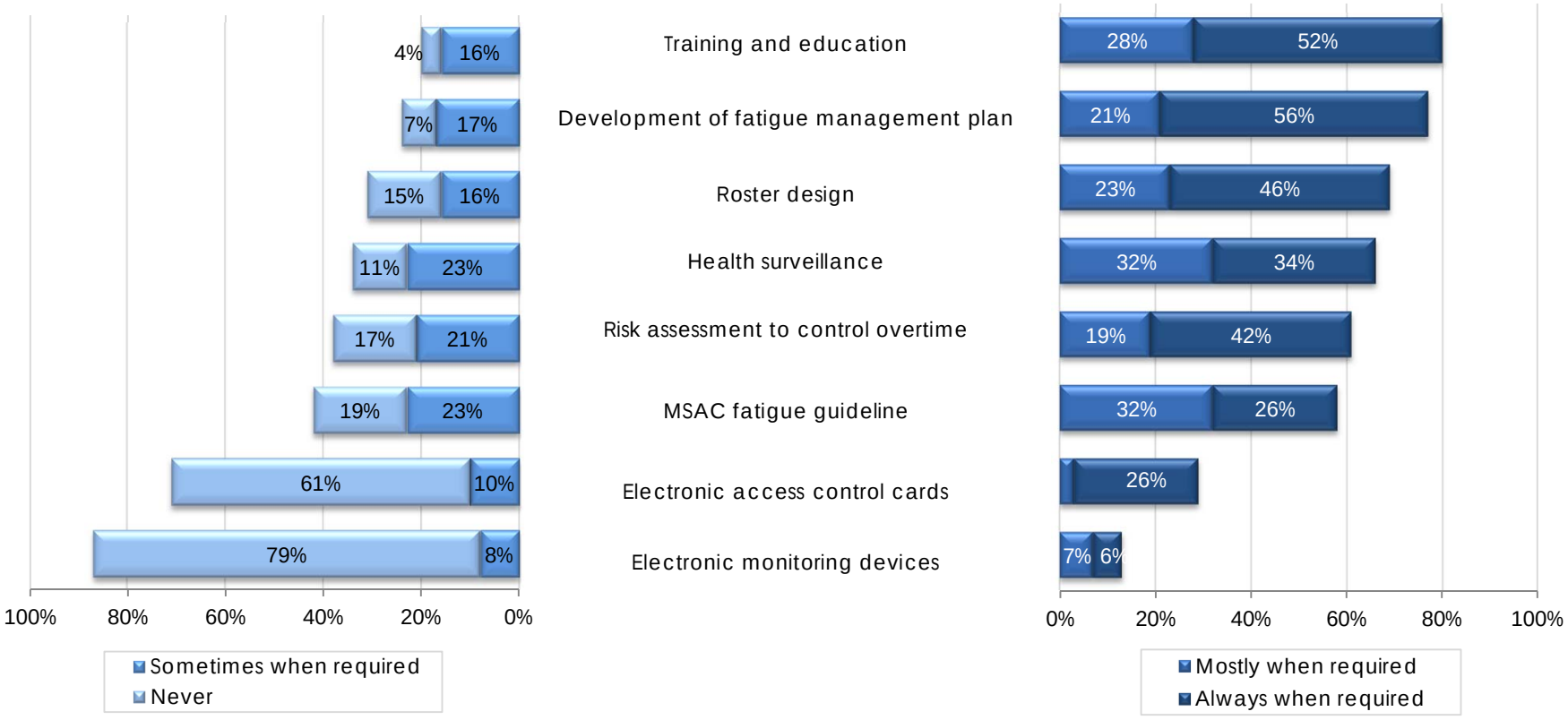
Correlations by sector	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Yes	41	100%	28	90%	96	66%	16	89%	170	76%
No	0	0%	3	10%	49	34%	2	11%	54	24%
Total	41	100%	31	100%	145	100%	18	100%	224	100%

Base: n = 224

Larger employers and the underground coal sector were identified as the most likely to have a program to identify their risks in fatigue management

Significant opportunities are identified to increase the utilisation of all the prompted measures for fatigue management

Q. Which of the following controls do you utilise for fatigue management at this site?



Base: n = 224

Over one third of sites never or only sometimes utilise 5 of the 8 prompted measures

Generally, the open cut and underground coal sectors are identified as more likely to be utilising the individual measures

Q. Which of the following controls do you utilise for fatigue management at this site?

Correlations by sector		Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
		Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Development of fatigue management plan	Always when required	37	90%	27	87%	62	43%	9	50%	125	56%
	Mostly when required	4	10%	2	6%	34	23%	7	39%	46	21%
	Sometimes when required	0	0%	1	3%	34	23%	2	11%	37	17%
	Never	0	0%	1	3%	15	10%	0	0%	16	7%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Roster design	Always when required	35	85%	25	81%	49	34%	4	22%	104	46%
	Mostly when required	2	5%	1	3%	38	26%	11	61%	52	23%
	Sometimes when required	3	7%	4	13%	29	20%	1	6%	35	16%
	Never	1	2%	1	3%	29	20%	2	11%	33	15%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Risk assessment to control overtime	Always when required	26	63%	23	74%	43	30%	12	67%	95	42%
	Mostly when required	5	12%	0	0%	35	24%	3	17%	43	19%
	Sometimes when required	7	17%	6	19%	36	25%	1	6%	48	21%
	Never	3	7%	2	6%	31	21%	2	11%	38	17%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Electronic monitoring devices	Always when required	2	5%	5	16%	7	5%	0	0%	13	6%
	Mostly when required	5	12%	5	16%	5	3%	5	28%	15	7%
	Sometimes when required	1	2%	1	3%	15	10%	1	6%	18	8%
	Never	33	80%	20	65%	118	81%	12	67%	178	79%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%

Generally, the open cut and underground coal sectors are identified as more likely to be utilising the individual measures

Q. Which of the following controls do you utilise for fatigue management at this site?

Correlations by sector		Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
		Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Electronic access control cards	Always when required	20	49%	18	58%	20	14%	10	56%	58	26%
	Mostly when required	1	2%	0	0%	5	3%	1	6%	7	3%
	Sometimes when required	1	2%	8	26%	14	10%	1	6%	23	10%
	Never	19	46%	5	16%	106	73%	6	33%	136	61%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Training and education	Always when required	30	73%	20	65%	63	43%	13	72%	116	52%
	Mostly when required	7	17%	9	29%	44	30%	3	17%	62	28%
	Sometimes when required	4	10%	1	3%	30	21%	1	6%	36	16%
	Never	0	0%	1	3%	8	6%	1	6%	10	4%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Health surveillance	Always when required	25	61%	15	48%	35	24%	4	22%	76	34%
	Mostly when required	6	15%	5	16%	53	37%	10	56%	72	32%
	Sometimes when required	8	20%	8	26%	38	26%	2	11%	51	23%
	Never	2	5%	3	10%	19	13%	2	11%	25	11%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
MSAC fatigue guideline	Always when required	19	46%	14	45%	30	21%	1	6%	58	26%
	Mostly when required	3	7%	6	19%	52	36%	11	61%	71	32%
	Sometimes when required	11	27%	4	13%	36	25%	5	28%	52	23%
	Never	8	20%	7	23%	27	19%	1	6%	43	19%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%

Generally, the larger the employer, the more likely they are to be utilising the individual measures

Q. Which of the following controls do you utilise for fatigue management at this site?

Correlations by full time employees/permanent contractors		0 to 20		21 to 99		100 or more	
		Count	Column %	Count	Column %	Count	Column %
Development of fatigue management plan	Always when required	50	37%	28	85%	47	82%
	Mostly when required	36	27%	2	6%	8	14%
	Sometimes when required	33	25%	3	9%	1	2%
	Never	15	11%	0	0%	1	2%
	Total	134	100%	33	100%	57	100%
Roster design	Always when required	38	28%	27	82%	39	68%
	Mostly when required	36	27%	3	9%	13	23%
	Sometimes when required	30	22%	1	3%	4	7%
	Never	30	22%	2	6%	1	2%
	Total	134	100%	33	100%	57	100%
Risk assessment to control overtime	Always when required	34	25%	17	52%	44	77%
	Mostly when required	32	24%	9	27%	2	4%
	Sometimes when required	36	27%	4	12%	8	14%
	Never	32	24%	3	9%	3	5%
	Total	134	100%	33	100%	57	100%
Electronic monitoring devices	Always when required	7	5%	1	3%	5	9%
	Mostly when required	5	4%	1	3%	9	16%
	Sometimes when required	15	11%	1	3%	2	4%
	Never	107	80%	30	91%	41	72%
	Total	134	100%	33	100%	57	100%

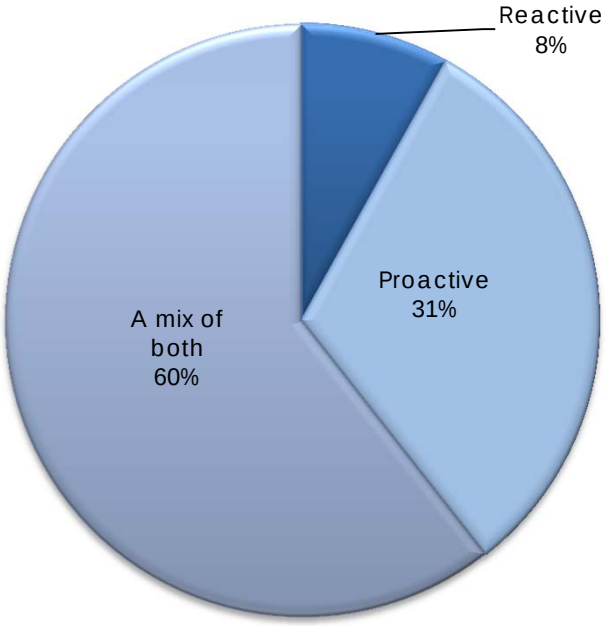
Generally, the larger the employer, the more likely they are to be utilising the individual measures

Q. Which of the following controls do you utilise for fatigue management at this site?

Correlations by full time employees/permanent contractors		0 to 20		21 to 99		100 or more	
		Count	Column %	Count	Column %	Count	Column %
Electronic access control cards	Always when required	11	8%	14	42%	33	58%
	Mostly when required	4	3%	2	6%	1	2%
	Sometimes when required	14	10%	1	3%	8	14%
	Never	105	78%	16	48%	15	26%
	Total	134	100%	33	100%	57	100%
Training and education	Always when required	53	40%	19	58%	44	77%
	Mostly when required	43	32%	9	27%	10	18%
	Sometimes when required	29	22%	5	15%	2	4%
	Never	9	7%	0	0%	1	2%
	Total	134	100%	33	100%	57	100%
Health surveillance	Always when required	34	25%	11	33%	31	54%
	Mostly when required	46	34%	17	52%	9	16%
	Sometimes when required	34	25%	4	12%	13	23%
	Never	20	15%	1	3%	4	7%
	Total	134	100%	33	100%	57	100%
MSAC fatigue guideline	Always when required	28	21%	7	21%	23	40%
	Mostly when required	49	37%	9	27%	13	23%
	Sometimes when required	30	22%	10	30%	12	21%
	Never	27	20%	7	21%	9	16%
	Total	134	100%	33	100%	57	100%

8% of sites consider their approach to fatigue management to be purely reactive

Q. Overall, do you consider your site's approach to fatigue management to be:



Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Reactive	15	11%	2	6%	2	4%
Proactive	40	30%	13	39%	17	30%
A mix of both	79	59%	18	55%	38	67%
Total	134	100%	33	100%	57	100%

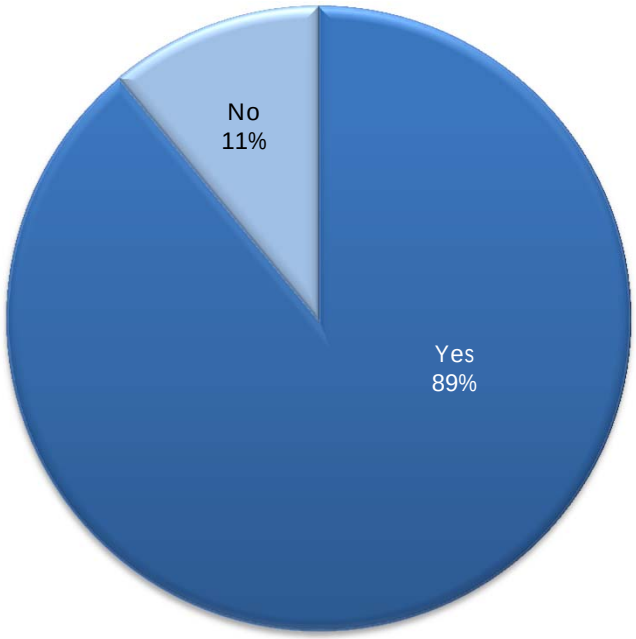
Correlations by sector	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Reactive	2	5%	2	6%	15	10%	0	0%	19	8%
Proactive	8	20%	9	29%	49	34%	6	33%	70	31%
A mix of both	31	76%	20	65%	81	56%	12	67%	135	60%
Total	41	100%	31	100%	145	100%	18	100%	224	100%

Base: n = 224

Dust Management

A high percentage of sites (89%) have a program to identify their risks in dust management

Q. Do you have a program to identify your risks in dust management?



Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Yes	116	87%	32	97%	51	89%
No	18	13%	1	3%	6	11%
Total	134	100%	33	100%	57	100%

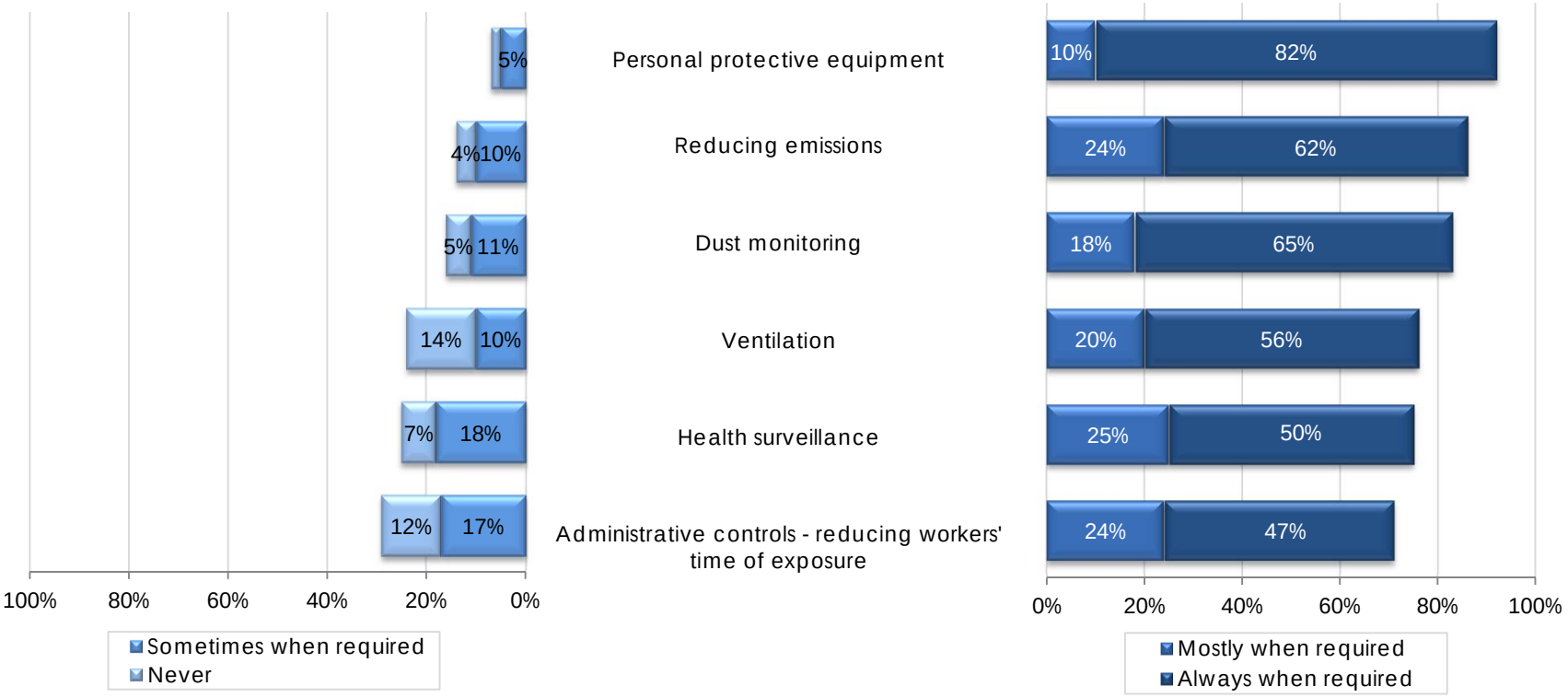
Correlations by sector	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Yes	36	88%	25	81%	127	88%	17	94%	199	89%
No	5	12%	6	19%	18	12%	1	6%	25	11%
Total	41	100%	31	100%	145	100%	18	100%	224	100%

Base: n = 224

No statistically significant differences by employer size or sector were identified

Strong utilisation is identified for the majority of the prompted dust management measures

Q. Which of the following controls do you utilise for dust management at this site?



Base: n = 224

Over 20% of all sites are identified as never or only sometimes utilising 3 of the 6 prompted measures

The underground coal sector is identified as significantly more likely to be utilising ventilation

Q. Which of the following controls do you utilise for dust management at this site?

Correlations by sector		Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
		Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Reducing emissions	Always when required	26	63%	21	68%	87	60%	7	39%	138	62%
	Mostly when required	8	20%	5	16%	37	26%	7	39%	54	24%
	Sometimes when required	6	15%	5	16%	15	10%	2	11%	23	10%
	Never	1	2%	0	0%	6	4%	2	11%	9	4%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Personal protective equipment	Always when required	35	85%	28	90%	114	79%	17	94%	184	82%
	Mostly when required	4	10%	1	3%	18	12%	0	0%	23	10%
	Sometimes when required	2	5%	2	6%	9	6%	0	0%	12	5%
	Never	0	0%	0	0%	4	3%	1	6%	5	2%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Administrative controls - reducing workers' time of exposure	Always when required	25	61%	18	58%	65	45%	9	50%	106	47%
	Mostly when required	6	15%	3	10%	37	26%	7	39%	53	24%
	Sometimes when required	6	15%	6	19%	26	18%	1	6%	39	17%
	Never	4	10%	4	13%	17	12%	1	6%	26	12%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Ventilation	Always when required	25	61%	28	90%	68	47%	14	78%	126	56%
	Mostly when required	3	7%	2	6%	38	26%	3	17%	44	20%
	Sometimes when required	4	10%	0	0%	18	12%	0	0%	22	10%
	Never	9	22%	1	3%	21	14%	1	6%	32	14%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%

The underground coal sector is identified as significantly more likely to be utilising dust monitoring and health surveillance

Q. Which of the following controls do you utilise for dust management at this site?

Correlations by sector		Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
		Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Dust monitoring	Always when required	40	98%	30	97%	77	53%	8	44%	146	65%
	Mostly when required	0	0%	1	3%	33	23%	9	50%	41	18%
	Sometimes when required	1	2%	0	0%	23	16%	1	6%	25	11%
	Never	0	0%	0	0%	12	8%	0	0%	12	5%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%
Health surveillance	Always when required	29	71%	23	74%	57	39%	7	39%	112	50%
	Mostly when required	5	12%	2	6%	40	28%	11	61%	56	25%
	Sometimes when required	5	12%	6	19%	35	24%	0	0%	41	18%
	Never	2	5%	0	0%	13	9%	0	0%	15	7%
	Total	41	100%	31	100%	145	100%	18	100%	224	100%

The larger the employer, the more likely they are to be utilising ventilation for dust management

Q. Which of the following controls do you utilise for dust management at this site?

Correlations by full time employees/permanent contractors		0 to 20		21 to 99		100 or more	
		Count	Column %	Count	Column %	Count	Column %
Reducing emissions	Always when required	81	60%	20	61%	37	65%
	Mostly when required	28	21%	13	39%	13	23%
	Sometimes when required	17	13%	0	0%	6	11%
	Never	8	6%	0	0%	1	2%
	Total	134	100%	33	100%	57	100%
Personal protective equipment	Always when required	106	79%	29	88%	49	86%
	Mostly when required	17	13%	4	12%	2	4%
	Sometimes when required	6	4%	0	0%	6	11%
	Never	5	4%	0	0%	0	0%
	Total	134	100%	33	100%	57	100%
Administrative controls - reducing workers' time of exposure	Always when required	57	43%	19	58%	30	53%
	Mostly when required	37	28%	7	21%	9	16%
	Sometimes when required	24	18%	4	12%	11	19%
	Never	16	12%	3	9%	7	12%
	Total	134	100%	33	100%	57	100%
Ventilation	Always when required	64	48%	17	52%	45	79%
	Mostly when required	31	23%	9	27%	4	7%
	Sometimes when required	17	13%	3	9%	2	4%
	Never	22	16%	4	12%	6	11%
	Total	134	100%	33	100%	57	100%

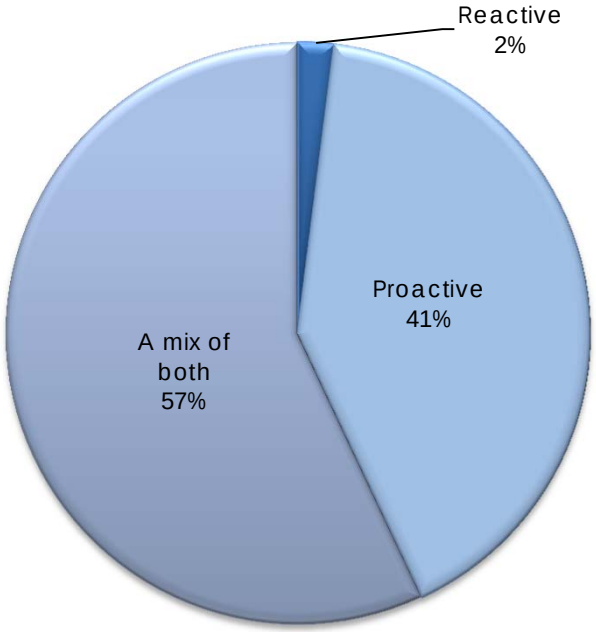
The larger the employer, the more likely they are to be utilising dust monitoring and health surveillance for dust management

Q. Which of the following controls do you utilise for dust management at this site?

Correlations by full time employees/permanent contractors		0 to 20		21 to 99		100 or more	
		Count	Column %	Count	Column %	Count	Column %
Dust monitoring	Always when required	66	49%	29	88%	51	89%
	Mostly when required	32	24%	4	12%	5	9%
	Sometimes when required	24	18%	0	0%	1	2%
	Never	12	9%	0	0%	0	0%
	Total	134	100%	33	100%	57	100%
Health surveillance	Always when required	53	40%	18	55%	41	72%
	Mostly when required	37	28%	10	30%	9	16%
	Sometimes when required	31	23%	4	12%	6	11%
	Never	13	10%	1	3%	1	2%
	Total	134	100%	33	100%	57	100%

Only 2% of sites consider their approach to dust management to be purely reactive

Q. Overall, do you consider your site's approach to dust management to be:



Correlations by full time employees/permanent contractors	0 to 20		21 to 99		100 or more	
	Count	Column %	Count	Column %	Count	Column %
Reactive	5	4%	0	0%	0	0%
Proactive	61	46%	11	33%	20	35%
A mix of both	68	51%	22	67%	37	65%
Total	134	100%	33	100%	57	100%

Correlations by sector	Open cut coal		Underground coal		Extractive		Metalliferous		Overall	
	Count	Column %	Count	Column %	Count	Column %	Count	Column %	Count	Column %
Reactive	0	0%	0	0%	5	3%	0	0%	5	2%
Proactive	13	32%	8	26%	67	46%	4	22%	92	41%
A mix of both	28	68%	23	74%	73	50%	14	78%	127	57%
Total	41	100%	31	100%	145	100%	18	100%	224	100%

Base: n = 224

There were no statistically significant differences by sector or employer size

Other Comments

Comments

Q. Do you have any other comments you would like to make with regards to the effective management of identified health hazards within the mining industry?

All machines should be fitted with the best quality air cushion seats to reduce back injuries and fatigue
Boral are introducing a new OH&S system, which will update a lot of safety issues
Employment of suitably qualified people on sites assists in effective management
Ensure consistency of approach across inspectors and mines
External providers can assist, but an internal person would be more likely to get traction
Fatigue has always have been a grey area because it becomes an infringement on workers' rights
Health management plans are dependent on the size of the site, their resources and the company
I find the courses very informative
Quarries are starting to come on board with the Plan, which is great
Smaller sites have to be very careful with all plans
The industry is having issues with back degeneration
There are a number of department guidelines that have been published and workshops that have been held, but I feel they raise more questions than answers. We go to workshops with questions but get no answers. We need the authorities to assist us with the implementation of these guidelines that are to be developed
Very old loaders should be banned from sites, as they are a health hazard
Vibration is not very well understood
We are about to roll out a new management plan, which it has health in it
We are very big on contractors using safe methods of operations

Telephone: (02) 4352 2388 Fax: (02) 4352 2117
Web: www.micromex.com.au Email: warren@micromex.com.au