Summary Report: Mental Health and Mining Research Forum
26-27 November 2013, Newcastle NSW
About the report

This report represents a summary of presentations and key discussions as part of a Mining and Mental Health Research Forum held in Newcastle on 27 November 2013. The report outlines a summary of key conclusions and recommendations from the day.

The report was written by the Hunter Institute of Mental Health and the University of Newcastle. We would like to acknowledge the presenters and attendees for contributing their expertise and knowledge to the forum and their discussions which form the basis of this report.

About the forum

The forum was attended by mental health professionals, representatives from peak mining bodies and researchers, with the following objectives:

1. To identify effective mechanisms for mental health researchers to engage with the mining industry.
2. To review with industry, current research priorities and needs relating to the mental health of the workforce.
3. To explore challenges in undertaking mental health research in mining or similar industries.
4. To identify strategies to maximise translation of research to improved health of the mining workforce.
5. Explore opportunities for research collaborations.

Forum structure and presentations

A series of presentations formed a foundation for discussion about key issues relevant to research investigating mental health in the Australian coal mining industry. The presentation titles are listed below and the key themes discussed are detailed in this report. This report also includes additional information provided by stakeholders who completed the online questionnaire following the forum.

1. Mental Health in Defence: Lessons for Mining and Mental Health - Professor David Dunt, University of Melbourne.
2. Industry Partnerships - Dr Alan Broadfoot, Director, Newcastle Institute for Energy and Resources (NIER).
3. The Science and Art of Dissemination Research - Professor John Wiggers, University of Newcastle.
5. Working Well: Mental Health and Mining. An Australian Coal Association Research Program (ACARP) - Ms Robyn Considine, Mining and Mental Health, University of Newcastle.
7. Developing a Mental Health Workplace Intervention for the Mining Industry. What to do and how will we know if it works? - Ms Katie McGill, Hunter Institute of Mental Health.
Key Conclusions

- Researchers need to build and maintain strong collaborative relationships with industry partners and sector advocates.

- Researchers need to embrace the principles of effective dissemination research to assist industry partners to integrate evidence-based knowledge into their routine operations.

- It is vital to align research objectives with current business imperatives to effectively engage with the mining industry.

- Researchers need to be flexible and open to negotiation and discussion with industry partners about research design.

- Further investigation is needed to confirm the validity of common measures and predictors of mental health and mental ill-health in the mining workforce.

- While there are unique characteristics of the mining industry that must influence methodological and intervention design, researchers should also be able to use research from other settings.

- For research to be useful to the wider mining community there is a need for good quality, representative prevalence data combined with information gathered by qualitative methods to yield a rich and full understanding about the mental health and wellbeing of the mining workforce and the implications for industry.

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Partnerships and dissemination research

This session focused on the role of partnerships and understanding how to establish effective collaborative relationships by working with industry priorities.

The session included presentations by Professor David Dunt, Dr Alan Broadfoot and Professor John Wiggers. These presentations highlighted the importance of having an effective multi-dimensional mental health strategy in the workplace, the need for researchers to form strong collaborative partnerships with industry bodies and for consideration to be given to the dissemination of research findings into workplace policies and procedures.

Professor Dunt presented findings from two reviews on mental health and suicide in the Defence Force and ex-service community. He discussed the implications of these studies for mental health in the mining workforce given that they share some important occupational health characteristics. In particular, both workforces are required to work and perform at a high physical and psychological level, frequently in remote settings. Professor Dunt identified the need for a mental health strategy that identifies the following:

1. Prevalence of mental health ill-health;
2. Any systemic workplace contributors to mental ill-health;
3. Gaps in service delivery relevant to improving the mental health of the workforce; and

Some issues that can inform the development of and/or engagement with workplace mental health programs include:

1. The extent that mental health problems can be addressed as an occupational health problem;
2. The presence of the ‘healthy worker effect’;
3. Whether there are existing effective mental health programs and services in place;
4. Whether current programs and services represent evidence-based best practice; and
5. The degree to which the interests and impacts on families has been considered.

Dr Alan Broadfoot, Director of NIER, University of Newcastle, emphasised the importance of academics embracing a multidisciplinary model of collaboration that engages both academia and industry in a common platform for effective research in the energy and resources industry. Challenges of engaging with industry include: the industry perception of who is responsible for employee wellbeing; engagement and access to industry; understanding the sector’s current imperative; and liability, accountability and regulatory constraints. Dr Broadfoot spoke of how these challenges can be mitigated by having a strong engagement with industry partners and sector advocates, ensuring research outcomes are aligned to organisational objectives, and having a strong insight and understanding of operational issues in the sector.

“Despite a large body of evidence-based knowledge ... it may take as long as two decades for original research to be translated into routine clinical practice” Larry Green (2009).

Professor John Wiggers discussed the art and science of dissemination research. Dissemination research is the research that identifies effective strategies for ‘institutionalising’ evidence-based policies and programs into routine service delivery. Professor Wiggers spoke about how partnerships are essential for effective dissemination and that there needs to be significant investment in the
intangibles of relationship establishment and management. Elements presented about designing an intervention that maximises likelihood of engagement and integration is discussed in a later section.

**Discussion themes:**

Discussion focused on **how engaging with the industry is the key to establishing an effective research partnership.** This can be done by ensuring research objectives align with current business imperatives. Historically, research has been framed within the economic cost of the problem (i.e. losses from absenteeism and presenteeism) as a way of engaging companies with research about mental health and mental illness. However, there is also a need to recognise that industries move through cycles of priorities and knowledge about the industry’s current priorities (i.e. increase productivity, increase efficiency, achieve savings) will help frame the research in a way that resonates with the industry.

The onus remains on the researcher to develop different skills and processes so they can be flexible with providing solutions to identified problems. Furthermore, **industry research requires researchers to be open to discussion and negotiation with the industry partners.** This can be a challenge for academics as it requires a move away from traditional approaches in other forms of research. There are also considerable structural impediments to engaging in dissemination research (e.g. funding and timeframes).

**There are risks for both researchers and companies when exploring mental health and mental ill-health in the workforce.** For researchers they must make a considerable investment, with minimal tangible return, into establishing and maintaining the relationship. Researchers must also cede some control of the project and this may bring uncertainty to the research outcomes. A considerable risk to the industry is that factors related to the workplace (e.g. a focus on productivity and efficiency) may be revealed as contributing to the mental health issues of their workforce. It is important this is managed by researchers by alerting the organisation of potential risks early in the project and working through solutions and potential industry responses. This approach also helps prime the industry for change. The organisation itself will already be aware of potential problems, what needs to change and how outcomes could be achieved.

Every industry has **peak bodies and other organisations that work to ensure the health and well-being of the workforce.** These bodies can assist with engaging with the industry, may have existing data of interest and could also be potential funding sources. For example, the NSW Mine Safety Advisory Council (MSAC) has a framework for promoting best practice health and safety to the industry, as well as delivering research based, innovative health and safety programs to industry representatives. Furthermore, other stakeholders and infrastructure (e.g. the ‘COMET’ database, Coal Mines Insurance, Employee Assistant Providers, Human Resource Managers) may also be sources of information that can help us better understand the mental health of the mining workforce.
Methodology

This session focused on factors that must be considered in the methodological design of research in the mining industry. It included presentations by Dr Jennifer Bowers and Ms Robyn Considine.

Dr Bowers described the specific strategies that have been integral to the success of the ‘Minds in Mines’ program managed by the Australasian Centre for Rural and Remote Mental Health. Some of the key factors she identified were establishing trust and credibility with the workers by understanding the worker’s environment and working conditions, having clear mechanisms in place to ensure the confidentiality of worker’s information and being visible at the site. Dr Bowers also highlighted the importance of clearly communicating the rationale for the study, how the information will be used and ensuring early and regular feedback was provided to the workers and management. Dr Bowers also spoke of the importance of a capacity building approach in any mental health research project involving the minerals industry, whereby individuals are empowered and workplace structures are designed to facilitate an environment that fosters good mental health.

Ms Considine spoke about some key issues related to mining research, using the ACARP funded Working Well research as a case study. She reiterated the critical role of forming strong partnerships in the industry and matching research objectives with current industry imperatives. Ms Considine identified the need to be thoughtful about what we are measuring and the measurement tools used. She also spoke about the importance of further investigation of the key predictors of mental health and well-being in the workplace as well as evaluation of the measurement tools. Ms Considine emphasised the need to balance the practicalities of the research to fit with the industry, while still ensuring scientific rigour to accurately understand the extent of mental ill-health and the unique characteristics within the industry.

Discussion themes:

There are unique characteristics of the mining industry that will influence methodological design. These include:

- That researchers need to understand and adapt to the industry and site’s cultural norms, and work requirements, in order to understand data and promote engagement with intervention. For example, the nature of mining means that there is a focus on the team unit (e.g. stress may occur due to a sense that you are letting the team down); and the bonus system may influence individuals’ willingness to engage with a mental health intervention because if production is slowed for any reason, for example for mental health training, this can interfere in achieving productivity targets linked to bonuses. Similarly, it is important to be aware of differences between underground and open-cut mines, e.g. the team structure in underground mines is likely to be stronger than management structure;

- Demographics of workforce. How much do they vary across mines? Gender, age, relationship status and work role need to be accounted for in design;
• The nature of work e.g. length of swings (shifts) have been found to impact on well-being. Researchers must also be careful to consider potential confounding factors such as workers’ level of responsibility;

• Using common measures will enable pooling of data. However, **many of the measurement tools have not been well-evaluated for the industry**. It was identified that it would be useful to have further investigation on the utility of various measures in the field;

• **Before applying results of studies to inform implementation design, the representativeness of the research to the industry in general needs to be carefully evaluated.** For example, some previous research in workplaces (e.g. construction industry) has found that there is a difference between the stressors felt by managers and those that they supervise. However, this remains a contentious issue, as other researchers have found evidence to suggest that the stressors are quite similar for all workers regardless of occupation or status.

A range of issues specifically related to data collection, management and interpretation were also covered. Issues related to **prevalence data**, including how prevalence statistics that identify the rates of mental health problems, levels of mental health literacy, stigma surrounding mental health, drug and alcohol use, levels of workplace productivity, and markers of psychological distress are important to informing intervention designs and also alerting industry to current or potential problems.

However, it was noted that **prevalence data collected from a particular mine cannot be extrapolated to the industry in general unless it is based on a representative sample, as each mine site will have unique characteristics**. It was identified that researchers need to investigate which differences are important predictors for mental health and well-being and which are relatively unimportant. Furthermore, while prevalence data is important, presenting it in an aggregate form can hide the nuanced information that can show the differences between sites. There is a need to be innovative in presenting data in ways that are meaningful for the individual site and the wider industry. It is important when designing programs that researchers think about ways to capture the diversity and commonalities between sites and be mindful of how the data will be used and the risk of misuse.

Members of the forum also discussed the tendency to repeat studies to get representative prevalence data for every industry. Many questioned whether the mining industry and its workforce were sufficiently different to other domains, or whether information derived from research in other industries were suitable for applying to the mining industry. For instance, some of the predictors of mental health problems have been comprehensively characterised, so researchers may be able to learn something from research conducted in other areas. While the utility of ‘other domain research’ for the mining context will need to be evaluated, **established research on the relationship between predictors and the mental health outcomes should be able to be extrapolated to the mining context.** This process of using ‘other domain’ research has been done in a number of Australian studies in different settings.

The **role of qualitative data collection in designing an effective research strategy was also highlighted.** Many felt that qualitative data was particularly useful for overcoming difficulties in determining how to calculate prevalence rates, and what to survey, due to having an inadequate understanding of the population. Qualitative research helps to identify diversity and commonalities, may uncover issues that are missed by a quantitative survey and allows people to more actively

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participate, which can help foster a sense of contributing to and engaging with the project. Thus, qualitative methods can help develop a deeper understanding of the industry that can then inform subsequent surveys.

**Interventions**

This session focused on the design of interventions to improve mental health in the mining workforce. Presentations on intervention design, the evidence base and factors to be considered in interventions for the mining industry were provided by Mr Nick Arvanitis and Ms Katie McGill followed by general discussion. We have also included here information that was presented in an earlier session that is relevant to this theme.

In his presentation on ‘The science and art of dissemination research’, Professor Wiggers provided a summary of key steps to designing an intervention to maximise likelihood of sustainable change. Key stages include:

1. Identifying what needs to change; determining the set of key determinants to be addressed;
2. Identifying the evidence available about changing the key determinants; and
3. Short term evaluation along with measurement of longer term institutional change.

**Mr Arvanitis** from beyondblue presented the results of a systematic review that examined the mental health of male and females in male dominated industries. Key findings included:

1. Prevalence rates of mental illness varied between industry groups;
2. Construction and mining industry workers may have elevated prevalence rates;
3. Prevalence rates varied substantially between occupational groups within the same industry;
4. Some non-male dominated industries/occupations may have higher mental illness prevalence rates than non-male dominated industries; and
5. Suicide rates appear higher in some male dominated industries including agriculture, transport and construction.

**Ms McGill** described specific factors that need to be considered for interventions in the mining industry. She noted that with very few well evaluated workplace mental health interventions in the mining industry it will be necessary to apply the evidence base from other workplace domains. Characteristics of the workforce and industry that need to be taken into account or that can provide opportunities to build upon include that the intervention:

1. Must be engaging to men;
2. Should account for shift work and varying levels of worker interest;
3. Builds on industry existing Work, Health and Safety (WH&S) platforms; and
4. Must work within industry imperatives.

The need to consider outcomes of interest to both the industry and researchers was also highlighted.
Discussion themes:

The issue of what else can be learnt from intervention research done with other industries was raised. It was noted that researchers should think broadly and use analogous evidence to establish overarching generic models of change and then take into account local differences in the implementation. If there are gaps in prevalence data and lack of evidence about interventions that is an opportunity to be innovative and look to what has worked in other domains. For example the ‘Mates in Construction’ program in the construction industry is an example of an innovative mental health intervention in the workplace.

Characteristics of the mining workforce that may impact on engagement or relevance of workplace mental health interventions were identified, including: age subgroups; DIDO and FIFO workers; occupational subgroups; site operational subgroups; and ‘culture’ at different mines and within teams. Industry structural factors such as swing lengths, roster patterns, remoteness, and fatigue were also noted as likely to vary between mines.

It was identified that increasing acceptability and uptake of interventions must be a priority in intervention design. Engagement with industry and peak industry bodies early is vital to achieving high participation rates and organisations need to be involved in shaping and promoting the intervention to enhance acceptability, relevance and to encourage uptake.

Finally, it was noted that interventions to improve mental health cannot be just an ‘add on’. Strategies need to be embedded into industry policy and workplace structures. Improving the mental health of employees is not only a good mental health practice but also integral to good workplace practices. In terms of the obligation of the employer to support the mental health of their employees, they are only required to do what would be considered ‘reasonably practicable’ to ensure workers are not exposed to mental health risks. Employees also have an obligation to take reasonable care of their own health. There exist many opportunities for researchers and the mining industry to work together to develop and implement strategies that support the mental health of the mining workforce that also offer industry benefits.
Other

An overarching theme that emerged was the lack of evidence pertaining specifically to mental health in the mining industry. Issues discussed included:

- Advancing knowledge of dissemination strategies that work;
- Building on what we know has worked and what has not worked in other domains;
- Building research evidence regarding the efficacy of established mental health training packages in this sector;
- Documenting examples of good practices that could be used as models for future programs and research; and
- Continuing to build and disseminate the evidence base, specifically for stakeholders as a group to contribute their learning and findings publically where possible and appropriate.

A second theme that permeated all discussions was how to translate the results of research to institutional change in the workplace and the impediments to dissemination research.

Key points discussed included that a major challenge for researchers in dissemination research is to build the evidence through appropriate peer review and publication that will promote broader distribution of findings. Furthermore, as the stakeholder who knows the language of journals, the onus is on researchers to work with organisations to contribute to the evidence base and write about experiences in a scientific way. A final theme was the need to be significant time investment in dissemination research in establishing and maintaining the collaborative partnership. This time is not readily translated into tangible, reportable results, which means that researchers need to be thoughtful about how to ensure all stakeholders’ interests and priorities are addressed.

Conclusion

Experiences of developing and implementing successful programs in the Defence Force, schools and police force show that there are multiple strategies from other domains that can inform mental health approaches in the mining industry.

Researchers need to be working actively with the industry at all stages of research from inception to dissemination of findings, to identify questions, consequences, risks and gains associated with potential research projects. Future collaboration with the industry, mental health researchers, policy makers and service providers is vital to effective research in the mining setting. This forum identified some common challenges and potential solutions that may form the basis of exciting opportunities.