



# Safety Effectiveness Indicators: Measuring construction industry safety performance

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# Aims and Significance

- Construction industry workers' compensation premiums are the highest in each of the state and territory jurisdictions of Australia.
- Nationally the construction industry has far more injuries than the Australian average, and pays one of the highest workers' compensation premium rates in Australia

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- Based on current workers' compensation claims and incidence of injury there is a clearly demonstrable need to achieve higher levels of competency for key personnel on construction sites in order to enhance safety performance and productivity.

# Aims and Significance

There are several objectives this project intends explore to improve safety performance:

- a) To de-emphasise industry reliance on 'lag' indicators such as Lost Time Injuries (LTIs).
- b) To investigate the efficacy of 'lead' indicators, in particular Positive Performance Indicators (PPIs).
- c) To develop a mechanism which will incorporate both lead and lag measures and measures of safety performance and safe behaviours we termed Safety Effectiveness Indicators (SEIs).



# The Research Project

- Cipolla, Dingsdag, Biggs, and Sheahan (2005-06) as well as identifying essential leadership attributes, communications and desired safe behaviours as necessary elements of safety culture identified the measurement of safety effectiveness as a requirement for measuring safe behaviours and safety performance for the construction industry.

# The Research Challenge

- Currently the only method or 'tool' available to measure safety performance is PPIs.
- PPIs need to be measured according to the positive safety actions they generate.
- However, currently, there are no standard national or international PPIs that are accepted by the construction industry (or any other industry) notwithstanding that their application was advocated in 1994 by the then National Occupational Health and Safety Commission (NOHSC) at a national symposium attended by all industry sectors' representatives.

# The Research Challenge

- A series of subsequent workshops and papers commissioned by NOHSC (between 1994 and 2002) resulted in a consensus that, based on an industry wide framework, individual organisations should develop PPIs to achieve improved OHS performance.
- Unfortunately no guidance was established relative to the development, application and valid measurement of PPIs.
- Significantly, for this research project even though safety culture change was identified by NOHSC, the use of safe behaviours as performance indicators was not considered other than in remote references.
- Essentially PPIs were linked to non-behavioural processes and measure numbers of activities only and do not provide an indication of activity effectiveness.



# The Research Challenge

Briefly, common limitations identified between 1994 and 2002 were that PPIs:

- may not directly reflect actual success in preventing injury and/ or disease
- may not be easily measured
- may be difficult to compare for benchmarking or comparative purposes
- may be time-consuming to collect and collate
- may be subject to random variation
- may encourage under or over reporting depending on how they are measured; and;
- that the relationship between PPIs and LTIs was arbitrary
- PPIs only measure the number of events and do not provide any indication or measure of effectiveness of each measured event.

Another issue that militated against the uptake of PPIs was that for legislative purposes, such as recording and reporting injuries, only LTIs and the like are required under the nine disparate Australian OHS jurisdictions.





# Research Objectives

- As a consequence of the vagueness and broadness of PPIs and their measurement, what is proposed for this project is to investigate the development of a guidance framework for performance measurement that can be applied by individual organisations suited to their particular organizational objectives and environment.

# Research Objectives

- We propose to develop a mechanism which will incorporate both lead and lag measures and measures of safety performance and safe behaviours that will have the core components applicable to the industry generally and yet have the flexibility to adapt to customized solutions for individual organisations and individual projects.
- Simply stated, this research project seeks to create a mechanism (SEIs) to standardize and customize the measurement of safety effectiveness with academically valid and user-friendly industry supported indicators that measure the effectiveness of specific proactive safety activities each company undertakes.

# Methodology

- Data from a two year national research project investigating the motivators of safety culture and safety behaviours in the construction industry has provided a data base (Dingsdag, Biggs, Sheahan, Cipolla, 2006) which identifies measurable safety behaviours informing the future formulation of SEIs.
- Based on interviews with managing directors, other senior management, semi-structured focus groups consisting of line management of Australia's eleven largest principal contractors have identified 39 safety management tasks that are considered critical to enhancing safety performance by the industry.

# Methodology

- Two survey instruments consisting of a management and worker questionnaire were administered nationally to the participating construction companies.
- All of the findings were validated through interviews with senior officials of the ACTU, the principal construction sector union, the CFMEU and senior managers of each of the OHS regulators in every State and Territory.
- After the qualitative and quantitative data were collated and analysed the results were taken back to each participating organisation for comment, suggestions for change and or validation.
- To create SEIs was outside the scope of the completed research project, but the standardised measurement of safety actions and associated safety behaviours is seen by industry as a necessary complement to the 39 SMTs.

