

Managing mining fatality risk

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ABSTRACT

In 2017 to 2019, and again in 2023 we administered a survey in which participants (n=3607 participants) at the West Australian Government Mines Safety Roadshows scored their perception of their employers' effectiveness to control fatality risk. Our survey is based on the Michael Quinlan 2014 book "Ten pathways to death and disaster", which is the outcome of an analysis of catastrophic incidents in the mining industry. Professor Quinlan's analysis for the book, and subsequently, has shown that most fatalities have 5 or more of the 10 pathways, although several incidents, including near misses have 8 to 10 of the pathways.

Our survey tool asks participants questions for each of the 10 pathways, using a score from 1 (low: little has been done) to 10 (high: well embedded systems), which enables us to create a 'fatality risk' profile for each participant. We then group participant responses by categories such as organisational role and geographic location.

Interestingly, in general there has been insignificant change in the fatality risk profiles when the 2017 and 2023 surveys are compared. In this paper we will present more details of the findings for each of the 10 pathways, and groups of participants.

Since the 10 pathways are based on an analysis of mining industry fatal incidents, the survey tool asks people to score their perception of their employers' effectiveness in each of these, and the overall scores are not improving, we suggest some guidance to assist improvement is needed. In this paper we will present a series of practical suggestions to assist the development of the fatality risk profile.

Our paper is designed to communicate information to assist the mining industry improve fatality risk using the structure of the 10 pathways.