A risk-based system to penalize and reward line management for occupational safety and health performance

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Penalizing line management for the occurrence of lost time injuries has in some cases had unintended negative consequences. These are discussed. An alternative system is suggested that penalizes line management for accidents where the combination of the probability of recurrence and the maximum reasonable consequences such a recurrence may have exceeds an agreed limit. A reward is given for prompt effective control of the risk to below the agreed risk limit. The reward is smaller than the penalty. High-risk accidents require independent investigation by a safety officer using analytical techniques. Two case examples are given to illustrate the system. Continuous safety improvement is driven by a planned reduction in the agreed risk limit over time and reward for proactive risk assessment and control.

Key words: Lost time injury; management; occupational health and safety; penalty; performance; reward; risk; risk assessment.

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Introduction

It is common practice for organizations to penalize line management for poor occupational safety and health performance, as measured by the lost time injury frequency rate [1]. Penalties are put into effect at performance reviews, resulting in reduced salary increments and promotional opportunities.

In some cases, this has led to unintended negative consequences, including:

- pressure on workers to refuse time off work following injury or, alternatively, to not report injuries [1,2];
- pressure on medical practitioners to certify injured workers as fit for alternative duties rather than temporarily unfit for all duties;
- damage to the relationship between rehabilitation officers (who normally co-ordinate graded alternative duties in the workplace, following medical advice) and injured workers, by the provision of meaningless tasks intended merely to avoid lost time certification;
- a false apparent improvement in safety when injuries of a given severity are no longer classified as lost time [2];
- resources being inappropriately expended on lost time injury issues rather than on controlling high and catastrophic risk [2];
- good managers being reluctant to manage plants with high lost time injury frequency rates.

Suggested alternative system

I would like to propose an alternative system for determining whether a penalty is appropriate.

Every time a worker sees a medical practitioner because of a new occupational injury or disease, line management must perform a risk assessment. The risk assessment uses the hazard risk assessment matrix shown in Table 1.

The numbers (termed 'risk assessment codes') represent rank order of risk and come from a hazard risk assessment matrix in the US Military Standard: System Safety Programme Requirements (MIL-STD-882C) [3]. The matrix in Table 1 has been described in detail elsewhere [4]. Risk is determined by the probability that, in the absence of further controls, such an injury or disease will occur again and the maximum reasonable consequence...
In the second example, a worker steps off a stairway onto a rough uneven surface and sprains his right ankle.

Under the current system, both injuries may be certified as lost time and the penalty incurred by line management may be the same. Pressure on medical staff to certify the second injured worker as fit for office duties would be common. It is likely, however, that the injured worker would not achieve satisfactory rest and elevation of the leg at work, and would be in more discomfort. The injured worker may be asked to do essentially meaningless tasks, or those for which he has no training. There may or may not be an investigation of the accidents, and there may or may not be control of the risks. Of course, in many countries, notification of the first accident to the government’s health and safety regulator would be required, and this might lead to appropriate investigation and controls.

Under the new system, the first accident would clearly be a high-risk event and an independent investigation would be required. This might find that there is no regular inspection and maintenance of handrails and walkways. The probability of another such accident would be classified as ‘probable’ and the maximum reasonable consequence as ‘death’. The resultant risk assessment code would be 2, which would exceed the accepted risk limit (which, for arguments sake, may be considered to be 10 in this plant). Line management promptly install new handrails, institute an improved plant maintenance system and undertake a review of working at height. The probability of recurrence is subsequently assessed as ‘improbable’, giving a risk assessment code of 12. At performance review, a penalty is given for the accident and a reward of lower magnitude is given for control of the risk of recurrence. Clearly, it would have been better to institute these controls proactively, thereby preventing the accident in the first place. The reward of proactive risk control is therefore an important part of the system.

The second accident is classified by line management as having a ‘frequent’ probability of recurrence and a maximum reasonable consequence of ‘temporary disability’. This gives a risk assessment code of 13, below the agreed limit of 10, so no independent investigation is required. Line management control the risk further by applying smooth concrete to the rough uneven surface, reducing the probability to ‘occasional’ and the risk assessment code to 18. The injured worker is certified unfit for 4 days and then commences a graded return to work with the assistance of the rehabilitation officer.

Case examples

The following two examples demonstrate the difference between the current system and the new suggested system.

In the first example, a worker leans against a handrail, which gives way and he falls 3 m onto a concrete surface. He sustains a fractured right arm and multiple soft-tissue injuries. Suspected spinal injuries are excluded after investigation in hospital.

In the second example, a worker steps off a stairway onto a rough uneven surface and sprains his right ankle.

Advantages of this system include the following.

- The system encourages proactive risk assessment and control. Preventing injuries avoids penalties and proactive risk control is rewarded.
There is less incentive to misclassify injuries. This increases the likelihood that injured workers will receive medical treatment and brief periods of time off work when appropriate. This should minimize acute injury pain and distress. Also, the tasks assigned during a graded return to work are more likely to be of real value, improving the relationship between rehabilitation officers and injured workers.

- The system prioritizes the control of high risks.
- The system encourages professional investigation of accidents judged to be high risk. This should increase the chance of identifying the contributing factors to these important accidents and instituting effective control measures.
- The system encourages line management to control rather than ignore risks after an accident has occurred. If the residual risk is promptly reduced to below the risk limit, a reward is given which partially offsets the penalty.
- The risk limit at which a penalty is incurred can be agreed upon between senior and line management. This defines respective responsibilities. Line management can then justify risk control expenditure to achieve the desired limit.
- Senior management must be able to give a rationale for the agreed risk limits to regulatory authorities and their company's employees.
- Organizations can and should plan for improvement by setting future goals for the risk limit.
- The same matrix can be used by line management for proactive risk assessment and control.
- The system could also be used for 'near miss' events where no injury has occurred.

There may initially be an increase in reported lost time injuries during implementation of the proposed system. This would be expected to occur, especially in organizations that currently exert efforts to avoid classifying injuries as lost time. However, with time, the system would be expected to reduce the occurrence of all types of occupational injuries and diseases, including those deserving of lost time. In turn, this should reduce compensation and common-law costs, and the risk of prosecution and damage to reputation.

**References**