

Accounting for Lost Time: Inside Workplace Safety Measurement

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Abstract

Purpose – This paper seeks to provide an inside view of the construction and use of health and safety performance measures. Given the contention that exists within the safety and management literature as to the appropriateness of traditional injury metrics for performance evaluation, this paper seeks to explore how operational managers evaluate occupational health and safety performance. In doing so, it questions the role of accounting in the provision of financial and non-financial health and safety information.

Design / methodology / approach – A field interview approach was adopted to explore the practice of safety management and OHS performance measurement. Interviews were undertaken at three large, high safety risk, organisations to examine processes for safety management and managerial perceptions of the usefulness of available performance data.

Findings – The findings reveal significant variations in practice across the three firms relating to the range of safety performance measures used, the role of these measures and the degree to which OHS performance outcomes are communicated to stakeholders. The results highlight reliability issues associated with traditional injury disclosures and the resulting difficulty in comparing results across times and entities. Finally, the study revealed a potential for remuneration and reward systems that incorporate safety performance criteria to motivate both constructive and dysfunctional behaviours in the employees and managers.

Originality / Value – This paper contributes to the body of social accounting knowledge by addressing the lack of evidence of corporate safety measurement practice. By engaging with practitioners, the study revealed quite different accounts of safety measurement and management practice than was otherwise apparent from related corporate disclosures. The paper also reveals that recent calls for introduction of positive performance measures, evident in extant health and safety literature, is presenting opportunities for future research.

Keywords: Social accounting, occupational health and safety, safety measurement, corporate social disclosure, positive performance indicators

Paper type: Research paper

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1 Introduction

The significant increase in attention to ethical, social and environmental accounting research is evident in journals such as *Accounting, Auditing and Accountability Journal* and *Accounting, Organizations and Society*. While much of this research is devoted to the examination of the theory and practice of corporate environmental reporting, there has been some consideration of corporate social accounting issues. Social accounting research has included, for example, studies of minority interests, gender and equal opportunity, intellectual capital, corporate philanthropy, ethical investment and corruption (for example, see Adams et al 1995, Mathews 1997, Adams and Harte 1998, Bennett 1998, Zairi and Peters 2002, Abeysekera 2003, Adams and Zutshi 2004). The measurement and reporting of occupational health and safety (OHS) performance however, although a subset of the broader realm of social accounting, is yet to receive significant attention within this literature. Even within the safety management literature, there is increasing criticism of both the lack of academic research into OHS performance measurement and the lack of empirical evidence to demonstrate that OHS management systems can secure safe and healthy workplaces (Gallagher 2000; Mansfield 2000; Pearse 2000; Bottomley 1999; Gunningham and Johnstone 1999).

This is further reflected in the debate that exists within the both the management and safety literatures as to the appropriateness of existing measures for assessing and reporting OHS performance. Established outcome measures such as injury statistics are increasingly criticised and stakeholder calls for organisations to move to the use of process indicators (positive performance measures) have been evident for over a decade. Despite this, recent research from ‘outside the organisation’ reveals evidence of some change in corporate OHS disclosures although the majority of firms in the sample continued to communicate safety performance in terms of a somewhat limited range of injury based metrics (O’Neill 2006). Furthermore, although social accounting is argued to have brought with it “increased attention to the metrics for measurement for social performance” (Gray 2002, p690), there is little evidence as to the extent to which accountants are actively engaging with OHS measurement ‘inside the organisation’ to bring about improvements in practice.

This study follows the example of social accounting researchers such as O'Dwyer (2002) and Adams (2004), and responds to the calls for more “direct researcher engagement in the field” (Parker 2005) and more accounts of engagement with corporate management in the social accounting literature (Gray 2002). Interviews are used to explore a field of enquiry as yet underprivileged within this literature, namely, an inside view of the construction and practice of OHS performance measurement. In particular, this research seeks to explore the role of both traditional and contemporary performance indicators in corporate OHS management. In doing so, the study questions the extent to which accountants and accounting information systems support OHS performance measurement and analysis.

The structure of this paper is outlined as follows: section two presents a review of the relevant literature and section three describes the method employed in the study. The results are then presented in section four and finally, the conclusions, limitations and suggestions for further research are presented in section five.

2 Literature review

In the year 2000 Sydney, Australia hosted the First National Conference on Occupational Health and Safety Management Systems (OHSMS). The conference proceedings reveal this forum brought together practitioners, stakeholders and leading local and international academics to present a range of views and experience and to engage in critical, multi-disciplinary discourse. Debate among participants sought to clarify the role of OHS management and management systems and to contribute to the identification and development of tools that might better evaluate OHSMS effectiveness. In doing so, the reliability and appropriateness of traditional OHS performance measures was scrutinised. Participants questioned the degree to which the effectiveness of an OHSMS could in fact be evaluated, the extent to which auditors might help in improving OHSMS, and the best means of measuring improvements in OHS outcomes. There was also concern as to the extent to which current performance measures actually provide managers with the information required to reliably inform OHS management decisions (Pearse et al. 2001).

The academics engaged in this process represented a broad range of disciplines from social sciences, management, health and safety to engineering and organisational psychology. Notably absent however, were accounting academics: management accountants with their specific expertise in performance measurement and analysis, financial accountants and auditors. This lack of accounting engagement in OHS performance measurement is further

evident in both OHS and accounting literatures. Perhaps this stems from past failures of accounting measures, typically financial, to provide useful and timely information to OHS managers. For example, the (often significant) costs associated with workers compensation premiums, have been criticised for providing poor information content. This is primarily due to the inconsistent relationship between costs and safety outcomes, the failure to capture many indirect and often immeasurable costs and the tendency for costs to be arbitrarily allocated across organisations or allocated using inappropriate cost drivers (Workcover NSW 2005; Chelius 1991; Stewart 1991).

The quest for reliable and relevant financial OHS measures presents a number of challenges for accountants. First, the current set-up of many financial and management accounting systems are not conducive to capturing and presenting OHS cost information in a useful way (Rikhardsson 2004). Second, there is often uncertainty about how much, and when, to recognise expenses associated with worker's compensation (Drexel 1992). Finally, these measures typically fail to address the broad array of other indirect and often immeasurable costs. OHS costs could range from, for example, those associated with the repair or replacement of damaged physical assets, compensation premiums, costs of replacement labour, reductions in cashflow from tort liability, litigation expenses, insurance losses, fines and other imposed penalties to the hidden costs associated with training, lost productivity, business disruption and decreased employee morale (Stone 1995; MacCorkle 1994). There is limited evidence that existing financial and management accounting systems can, and indeed do, provide OHS managers with useful information. Furthermore, the attempts of OHS managers to deal with their organisation's accounting systems are described as an exercise in futility because although managers may receive a lot of financial information, little is useful for timely OHS analysis and decision making (MacCorkle 1994).

Safety performance indicators

The ability to monitor and improve workplace safety nevertheless “hinges on how well OHS performance can be evaluated...” and an effective OHS program must be “capable of measuring the indicators that unambiguously reflect its performance... [in terms of] delivering internal control and systematic management of OH&S” (Else and Beaumont 2000, p38). The inherent difficulty in measuring workplace ‘safety’ however arises because safety is not an observable property, but rather an imprecise construct. Consequently, OHS

managers have sought to identify a range of indicators that might provide useful proxies for workplace health and safety.

This search for health and safety performance indicators has led to a widespread adoption of workplace death and injury count based metrics. Known as safety “failure” measures, indicators such as the number of fatalities, lost time injury rates and injury frequencies routinely form the cornerstone of OHS disclosures by organisations, stakeholder groups and government agencies (for example, see, ACTU 2005; Workcover NSW 2004; NOHSC 1999). However, these measures are subject to increasing criticism of their ability to accurately measure workplace safety performance. They are further condemned for; being so far downstream that they are irrelevant for proactive safety management decisions; for measuring failure rather than success; underestimating the incidence of illness and disease; being subject to under-reporting, manipulation and chance; and failing to either provide reliable information about the causes of injury or to motivate improvement (Bottomley 2000; Stricoff 2000a; Stricoff 2000b).

Further criticism of the Lost Time Injury (LTI) indicator in particular suggests that while it may reflect how well a company is managing minor hazards which result in routine injuries, it provides no useful information about how well major hazards are managed (Hopkins 2000). In contrast, Bottomley (2000) suggests that OHS performance measures “are more powerful if they identify [the] critical sequences that result in failure” (p139) and he urges managers to identify proxies for OHS risk exposure rather than OHS performance. Further, he suggests OHS programs ought include a combination of: first, input indicators identifying “hazard at source interventions”; second, process indicators which assess how successfully a workplace is performing through “monitoring the *processes* which *should* produce good outcomes” (emphasis added); and finally, output, or failure indicators, such as traditional injury measures (Bottomley 2000).

Nevertheless, critics have noted a failure to see “any qualitative shift in the type of OHS performance measurements used” (Bottomley 2000 p132) and an almost exclusive “status quo-reliance on recordable¹ and lost time injury rates as safety performance measures” (Stricoff 2000, p36). The motivation for a sustained focus on failure measures remains unclear. Research into the drivers of corporate environmental disclosures point to stakeholder concerns, with corporate disclosures motivated by strategic attempts to address the

¹ The Recordable Injury measure is defined by the US Occupational Safety and Health Administration (OSHA)

information needs of stakeholder groups, to maintain corporate legitimacy (Deegan 2002, Deegan and Gordon 1996) or to “forestall the introduction of more onerous regulation and to obfuscate or deflect poor social performance” (Moerman and Van Der Laan 2005). However, although stakeholders rate health and safety disclosures as relatively important (Deegan and Rankin 1998) the continued reliance on failure measures is leaving stakeholder groups “increasingly dissatisfied” (Stricoff 2000, p36).

Perhaps health and safety disclosures are subject to similar organisational influences as environmental disclosures, such as firm size and industry (Adams 2004; Adams et al. 1998; Roberts 1992; Patten 1991; Cowen et al. 1987), country of origin (Deegan 2002; Adams 1999), media coverage (Brown and Deegan 1998) and corporate age (Roberts 1992) and regulation. However, prior studies of corporate social (and environmental) reporting practice have historically provided relatively little evidence as to the nature of OHS disclosures. Guthrie and Parker (1989), for example, identified a pattern of “high but fluctuating levels” of human resource disclosure in their analysis of corporate social reporting by BHP over the period 1880 to 2000, although the discussion suggested disclosures focused on industrial relations; strike action and pay rates rather than health and safety performance (p349). In a detailed reporting-performance gap case study of a large, multinational company that faced “significant” health and safety issues, Adams (2004) identifies safety related disclosures in an environmental report including three deaths and a prosecution for a death in 1998 resulting in an infringement and fines totalling £28,953. Revealed in the annual report for the same firm was a commitment to health and safety, mention of health and safety targets and of four pages of health and safety performance content of which “only about a page of information on the environment and health and safety... that discusses progress to date” (p744-745). However, no insight into the nature of OHS targets or the performance measures adopted and / or disclosed was provided in the study (such was not the purpose of the paper).

More recently, a study of the corporate disclosures of Australian mining and energy firms in the ASX Top 50² found failure measures still dominating safety performance disclosure (O’Neill 2006). Notably, lost time injury measures were the only indicators reported by all (but one) firm in the sample. Raising concern over comparability of this safety performance data however, the study also identified inconsistencies in both the injury measures selected for disclosure and the method of calculation of some of the more common measures. In contrast to previous research, the study also revealed some corporate disclosure of a number

² The top 50 companies, by capitalisation, listed on the Australian Stock Exchange

of positive performance indicators, such as OHS training and emergency drills. There is no evidence at this time however, to indicate whether those findings are indicative of a wider emerging trend toward the use of positive safety performance indicators. Similarly, there is little understanding of the motivations for the adoption, or failure to adopt, positive safety measures or of the relative usefulness of these measures to management and stakeholder groups.

Together the above discussion highlights a role for academic engagement with OHS performance evaluation and corporate disclosure practice. In recognition of such a need, this study seeks to provide an inside view of the construction and use of safety performance measures by exploring the safety management practices adopted by a small sample of firms. The research aims to provide preliminary evidence as to: first, corporate OHS risk management processes; second, the OHS performance indicators and measures used by operational managers to evaluate and control OHS risk and third, the means by which OHS performance information is communicated to stakeholder groups. Finally, given the power of accounting to facilitate corporate communication and play an emancipatory role in broadening the “rather selective subset” that is conventional accounting (Collison 2003), this research questions the role of accountants and accounting in motivating and / or supporting each of these processes.

3 Method

In keeping with the exploratory nature of this study, a field study approach was adopted to collect data. The organisations participating in the study were not randomly chosen but were selected due to the regular and voluntary participation of their senior management in a bimonthly regional environment, health and safety (EHS) industry / community consultation group. These meetings provide a forum for managers from various firms in the region to engage in regular consultation with representatives from statutory bodies and non-government organisations, local residents and other interested community participants regarding environmental concerns and related health and safety issues.

During a recent meeting, conversation between various industry executives turned to safety performance, whereupon three senior managers each volunteered quantitative performance data for their particular organisation. They presented their reports using different terminology (lost time injuries, recordable injuries and safe days), different units of measurement (days versus hours) and different levels of analysis (organisation, site, work group) prompting

confusion among participants as to the relative significance of each particular safety achievement and making direct comparison of performance impossible.

For that reason, those three senior managers and the organisations they represented were targeted for further investigation. These respondents were the *Site Manager* for a major distributor of flammable fuels, coded respondent A and firm A respectively; the *National Safety, Health and Environment Manager* for a manufacturer of adhesives and polymers, coded respondent B and firm B, and the *Environment, Health and Safety Systems Manager* for a manufacturer of highly toxic chemicals, coded respondent C and firm C.

Each respondent was telephoned by the interviewer and invited to participate in the study. Upon agreeing, semi-structured interviews were conducted at each site over three consecutive days in March 2005. The interviews ranged in length from one and a half hours to two hours fifty minutes and each interview was taped and later transcribed. Where possible, health and safety performance information such as internal management reports, policies and procedure documents were obtained. The latest available external disclosures were also obtained from corporate websites and reviewed, namely, the 2004 Annual Report and the 2004 Sustainability Report (or equivalent). The 2005 reports were later obtained, upon their release, and also reviewed.

4 Results

The findings of this study are presented so as to address the three key issues of concern: OHS risk management, OHS performance measurement and communication of OHS performance. First, an overview of the operating context and the OHS risk management practices identified at the sites are described. Second, detail as to the various performance measures used to evaluate OHS performance is provided, organized by type of measure with the various injury-based (negative) indicators each identified in turn, followed by a discussion of additional positive performance indicators and then financial performance measures. Finally a brief discussion of the extent to which these OHS risk management and measurement practices were reflected in internal and external disclosures is presented.

4.1 OHS Risk Management

The three firms examined in this study are each large, multinational firms, operating in a common industrial area that is subject to a range of significant health and safety risks. These arise from the proximity to numerous gas and petroleum refineries and distributors,

manufacturers of a range of foods, chemicals, toxins and various other products along with substantial warehousing and the associated high volumes of heavy vehicle traffic. In addition, the area sustains a sizable population with residential property adjoining many industrial sites and is adjacent to ecologically sensitive natural resources. Organisations operating within this area therefore needed to consider their own, site specific OHS risks within this broader risk profile.

When questioned each of the three respondents easily identified significant OHS risks or hazards associated with their organisation's operations. Commonly reported by all sites were high risks of manual handling injuries, fire, explosion, chemical burns and to a lesser extent, commuting accidents involving staff travelling to and from the workplace. Additional organisational specific risks were identified by each respondent as follows:

Firm A: We have a risky business - we are not manufacturing shoes, we are handling a flammable product. That's recognised by the government - we're classified a major hazard facility because of the product we handle and the quantity of product we handle. We hold a lot of a very dangerous product so our systems have to be robust and we try to reduce the risk.

Firm B: We handle a lot of hot material and we have the risk of people burning themselves from hot liquids. We cook things up in reactors and the temperature can go up to 300 degrees centigrade. People need to be aware of the hazards and give them the respect that they require.

Firm C: A major risk for us is chemical exposure. (ChemX³) is a really nasty material. It is a vapour at normal conditions. It's toxic if you come into contact with it and it is a potential human carcinogen. So that's the number one hazard for us to manage. It's also flammable which introduces a fire and explosion hazard that we need to manage. We have to control ignition sources in the whole factory and eliminate them entirely.

Each of the respondents described the rigorous processes that were in place for identifying workplace health and safety hazards, assessing the associated OHS risk and initiating appropriate remedial action. However, the approach to OHS risk management taken by each respondent seemed quite different. Firm A reported to have informal OHS risk management structures characterised by few written procedures, minimal quantitative performance evaluation or reporting, and predominantly verbal feedback channels. Respondent A reported that the firm met all legal requirements for OHS risk management but did not have a "safety or OH&S management system or program" stating:

I think that can be a cop-out if you start running behind an umbrella. We have good communication within the group and within the division. We have regular safety meetings – they are self managed. (We have) processes in place but I don't have a committee, I don't

³ The name of this chemical has been coded ChemX to protect the identity of the organisation.

want a committee - it just means you have that individual – Mr Safety or Mrs Safety and I don't want that. Safety is everybody's responsibility.

The strong emphasis on individual employee responsibility for OHS rather than employer or management responsibility was reiterated in his later comments; "Employees understand their safety responsibilities – definitely, absolutely clearly. Safety is part of each individual's responsibilities and they take that very seriously." He also noted that safety was not a line responsibility saying, "Everybody here is responsible." Nevertheless he confirmed that the firm did employ a manager "who has the *title* National Safety Manager" saying that this was someone he could turn to "who really only gets information from me when necessary and sends me information" such as six-monthly safety bulletins that identify and communicate recent incidents occurring within the multinational corporation and suggesting process changes or improvements to prevent a reoccurrence. OHS advice from agencies such as Workcover is also disseminated by the National Safety Manager.

At the other extreme, Firm C had developed a very detailed and structured OHS management system based on their organisation's Global (American) Management Standards and linked into their ISO14001 and ISO9001 environmental and quality management systems. Operationally, the OHS system included a comprehensive range of global corporate standards, written policies and procedures, formal audit and review processes, an employee incentive (gainsharing) program, and communication activities including an elected safety committee, morning "toolbox" meetings and electronic feedback systems. Performance measurement took various forms and a wide range of quantitative metrics were captured and then analysed by senior management at the end of each year. All data then fed back into the corporate information management system for consolidation into international results. Organisation structure appeared to play an important part in the management of OHS risk and, unlike the philosophy at Firm A, respondent C stated:

Safety is a line management role. I am the EHS Manager, so I am responsible for the systems that achieve the outcomes. There is a health and safety charter that defines the responsibilities of all of us as individuals and of line managers. It is a line management role."

Respondent B also suggested that safety was seen as a line management responsibility within his organisation stating,

We always see that line managers are responsible. It flows down from the managing director through the general managers to the site managers who are managing the people who are most at risk and then through the site managers to the production managers. From a support function I am there as a safety, health and environment manager and we've also got a safety, health and environment coordinator (but) responsibility really sits with line management."

It appeared however that the processes for managing OHS risk at Firm B lay somewhere between those of Firms A and C. Firm B did not have the structured measurement and reporting systems found at Firm C but, unlike Firm A, did have written OHS policies and procedures as well as processes for regularly capturing (some) OHS performance data at each site and the monthly reporting of this data to head office.

Despite these differing approaches all three respondents had implemented processes, as required by legislation, to maintain registers for documenting health and safety incidents, to identify health and safety hazards; and to provide employee health and safety training. These OHS risk management activities are summarised in Table 1 and discussed below.

[Table 1 about here]

Incident registers

Each of the three firms reported to maintain incident reporting processes in accordance with the legal obligation “to keep a register of injuries that is readily accessible in the workplace” as required by Section 63 of the Workplace Injury Management and Worker’s Compensation Act of 1998. These incident reporting systems provided the primary source of injury data for each of the three firms and captured a broad range of workplace incidents – including all accidents, injuries, near misses (ie. plant incidents without injury) and environmental issues. In the case of firm A, the incident register also included reports of unauthorised entry and security breeches.

Each attested to the completeness of these registers. Respondent A for example, stated “People willingly report, to the best of my knowledge, and I would know. People are fair dinkum about the system and they report everything that goes wrong and that’s the way I want to keep it.” Similarly, respondent C claimed the most important thing about the reporting system “is that all incidents are reportable,” and respondent B stated “the incident form must be completed - always.” However, further examination revealed those relatively trivial injuries were typically neither notified to managers nor recorded in the incident registers. Respondent A for example, observed that for a minor injury such as a small cut, an injured employee would be expected to see the first aid officer or get a bandaid, admitting,

If it’s just a cut I’m not worried about it, no, I wouldn’t raise one for that. It’s grey territory.
If it’s a near miss situation where a person may have had the potential to hurt themselves quite *seriously* then we would have to use discretion there.

He elaborated, “whether it’s right or wrong I wouldn’t capture that. I’m not going to capture every single near miss partly because I don’t know about (the trivial ones) and I know it’s the

iceberg principle, but if it's got the potential to cause problems it *will* be reported to me – I'm comfortable with that." Respondents B and C claimed to also use similar discretion in relation to trivial injuries such as minor cuts and compression injuries (such as hitting a thumb with a hammer). The degree to which this pragmatic approach in fact complies with the NSW Occupational Health and Safety Act requirement to keep a current record of *any* injuries suffered by workers, whether they result in claims or not, was duly noted but as respondent A stated,

The incident reporting process has to be something we can manage and it's got to be something that everybody buys into and willingly takes part in. It's open and transparent and is doesn't discourage people. At the moment we're all in the system. The moment I start becoming silly about it, I'll start alienating people and things go underground and the culture changes and I don't want to change that.

While each firm adopted similar practices for the notification and documentation of workplace injuries, presentation of injury registers differed across the three organisations. Firm A filed incident report papers in a folder held in the control room, firm B adopted a First Aid Register plus filed additional incident report forms and firm C had implemented an electronic database of scanned incident report forms that "anybody in the company had access to." Respondent C also noted that the electronic system provided automatic feedback, notifying those individuals involved in an incident about various outcomes. However, the user-friendliness of this feedback system, and perhaps the degree to which the electronic register of firm C was "readily accessible" as required by legislation, is questionable given that only about one third of the 68 shift technicians are computer literate. Respondent C recognised the significant challenge this presented to management since "in every work group we have a couple of guys who know how to use the computer and (they must) become the conduit for the rest of the team." Nevertheless, he advised that the firm "wanted to stick with the electronic system" as a primary means of feedback from the OHS management system and so employees "need to understand" that the communication is going to be provided in this form.

HazOp processes and OHS risk identification

Each respondent advised that all incident reports are reviewed by management and investigated to identify the cause(s) of the incident and any possible hazards, risks or consequences that had arisen or may arise in the future. Typically evaluated using a risk matrix approach, assessing probability and consequence, the results of the incident investigations then drove action, where necessary, to modify plant, equipment or processes or provide relevant safety training. This was common practice across the three firms as were

“HazOps”, hazard and operability audits in which employees regularly reviewed current practices to identify potential hazards. HazOps were also undertaken in response to accidents and when evaluating options for process improvements or capital asset purchases and replacements. Respondent A commented,

People work sensibly, there’s a culture of trying to improve systems, that’s partly through our modification system – I don’t raise the requests, the people in the team do. They think something can be improved, made safer, they do that. There is a culture of trust and respect within the group.

Similarly, both respondents B and C advised that their employees also actively participated in hazard identification and regularly offered suggestions relating to process and plant improvements. At firm C, employees were encouraged to lodge suggestions via an incident report form. Data relating to both the number of HazOp audits and number of “reportable incidents” were then captured as part of the OHS management system although it was difficult to distinguish the total number of *suggestions* from the total number of reportable *injuries* as both were included in the same “reportable incident” statistic. In contrast respondent B could easily provide the number of reportable incidents, in terms of injuries, at the end of each month, while respondent A did not tally the numbers of reportable incidents at all but rather advised the National Safety Manager about injuries as and when they occurred.

4.2 OHS Performance Indicators and Measures

Non-financial (injury) measures

Exploring the recorded measures of workplace injury in further detail it became evident that each respondent recorded various, and indeed quite different, categories of workplace injury. These included all reported (or reportable) injuries, first aid injuries, medically treated injuries, lost time injuries and recordable injuries. It was also clear that discretion was applied when classifying injuries and calculating injury statistics. None of the respondents reported to separately identify or capture information relating to work-related illnesses suffered by employees. Table 2 summarises the types of injury information captured by each firm. These are described below.

[Table 2 about here]

First aid and medical treatment injuries

A ‘first aid’ injury (FAI) was generally described as one which is serious enough to warrant first aid treatment but not sufficiently serious to require treatment by a registered medical practitioner. Those injuries that do require practitioner treatment are instead classified as a

‘medically treated’ injury (MTI). As shown in Table 1, each of the three respondents captured FAI and MTI data differently. Respondent A reported to have a general “feel” overall rate of injury at the site, but did not record either injury count and was not aware of any such measures being available elsewhere within the organisation. He suggested that although he provided injury information to Head office on an adhoc basis, measures of FAI or MTI were unlikely to be tallied and advised that if such measures were calculated, they were not communicated back to the sites.

Respondent B similarly did not count the number of FAIs, however he did tally the number MTIs that occurred each period and these were collected nationally and reported to Head Office management monthly. In contrast, respondent C counted the total number of FAIs but did not specifically identify the number of MTIs. Rather MTIs at firm C were aggregated with various other types of injuries to derive a measure of ‘recordable injuries’⁴.

Both respondents B and C reported that the classification of an injury as either an FAI or MTI, hinged on the interpretation of “medically treated” and, in particular, whether it has been necessary for a medical professional to actually treat the injury, as opposed to treating the person. As respondent C explained:

The moral to that story is that the guy is going to get all the care he can because we want to make sure that an injury doesn’t get worse... The good news is, and this is just the cynical business side of scoring, if all the doctor does is to make sure that the injury does not get any worse then it is not medically treated, it is all preventative. If the doctor says, “oh your arm’s a bit stiff, we are going to have to give you physio because you’ve got damage there”, then its medically treated injury. However if the doctor says “the arm is stiff and I can make it more comfortable for you with physio, there’s no damage done there, all we are doing is making sure that it does not get aggravated”, then its all preventative. We won’t record it.

Given this approach, it is possible the same physical injury and indeed the same treatment (or “care”) may be recorded quite differently across organisations depending on the wording of the assessment provided by the medical professional. Respondent B hinted at this commenting that some organisations have “strong relationships with a particular doctor” and “others have medical practitioners on staff.” Indeed firm C reported to employ registered nursing staff on site “to provide first aid”. Respondent B questioned the effect these relationships might ultimately have on classification of injuries and subsequent performance numbers and claimed that while he tried to work within various corporate and industry guidelines, he had concerns that “not everyone is playing by the same rules.” Nevertheless, he also reported:

⁴ Recordable injuries are explained later in this section

We still have trouble coming to grips with these. Medical treatment injury is probably the one that draws some conjecture because if someone maybe has an injury, a first aider will treat it. Sometimes they might send him up to the doctor. The doctor says “it’s a cut, it doesn’t need stiches” and just wraps it up again and back to work. We would treat that as a first aid injury because the doctor hasn’t done anything over and above what the first aider did. If the doctor gives a tetanus needle, just in case, then I still would not regard that as medical treatment for the injury... Yes at the point they go to the doctor a worker’s compensation claim is registered, and that causes a bit of discussion but I don’t have a problem with that.

The combination of subjective interpretations of “medical treatment” and the presentation of completely different performance measures by each firm left it difficult to compare the degree to which employees at each firm experienced relatively minor to moderate injuries.

Lost time injuries

These variations in interpretation and measurement were also evident in relation to the more serious injuries occurring across the three organisations. The third category of injury, and the only category to be recorded by all three firms, is the ‘lost time’ injury (LTI). An LTI is defined in AS 1885.1, Australian Standard: Workplace Injury and Disease Recording Standard (Standards Australia 1990), as any illness or injury that results in a fatality, permanent disability or lost time from work of at least one full shift or work day. Respondent C summarised this, saying an LTI has occurred “if you can’t come back to work the next shift,” and stated, “To that end everybody should have the same definition.” There was evidence however that the application of this definition was also subject to some degree of interpretation by the respondents.

Respondent A for example, suggested that although injuries occurring on the journey to or from work are technically work related, he would not necessarily record as an LTI an employee who was injured in a car accident on the way home from work and required time off work to recuperate. Offering the scenario that, if the employee was involved in a serious accident while driving the *third* car in a five car end-to-end on the freeway, then since he was in the middle of it “It’s clearly not work related – he couldn’t have avoided that, so I wouldn’t count it as an LTI.” But if he was driving the *first* car, or perhaps the last car, then it probably would be counted. He further suggested that if an employee was injured and unable to come to work the next day but there was the flexibility to enable the injured worker to work from home, then again, no lost time injury would be recorded at firm A.

Respondent B also applied some flexibility to interpreting the LTI definition suggesting:

I differ with some of the other definitions on this, but if a person is injured and they might be on the night shift, they can’t see the doctor straight away or say they come in the next day to see the doctor... and he says “yes, he is right to work” but [the employee] misses out on the next shift because he has been under investigation, that I would not regard as a lost time

injury because the doctor said the person *was capable* of working from the time the next shift was due to start [even though he failed to actually work the shift].

Surprisingly he also suggested that a doctor's medical assessment may be ignored or overridden on occasions, as he believed sometimes doctors will mark an employee 'unfit' for a day "because otherwise they wouldn't be paid by the insurance company" saying, "I don't care about that. Let's be practical and see the level of injury that's really there because that's really what the lost time injury (measure) is, it's about the level of injury". This was particularly interesting given his prior comments regarding some firms having relationships with potentially sympathetic doctors and his scepticism at the validity of injury rates reported by "others".

Respondent B also highlighted the element of luck or chance inherent in LTI statistics suggesting that a person who was injured on the final day of a "four-on, four-off" shift roster and needed two days in bed to recuperate would not be counted as an LTI since the injured employee has a four day scheduled absence before their next rostered shift. In contrast, a person who sustains exactly the same injury on the first day of a shift roster and needs the same two days to recuperate would require time away from work and therefore will be counted as an LTI.

A further challenge for respondents arose in relation to the issue of restricted duties and whether medical advice to limit the duties performed by an employee due to an injury should constitute lost time, or merely a first aid or medical treatment injury. Most described this as a "grey area", and respondent C explained:

If a guy who comes back to work can't do his job – that's defined in the book as lost time, so there's no issue there...

But he later stated,

If (an employee) comes back to work and he can't do his job but he can work on light duties then from a holistic point of view it's simple - it's a lost time injury. However the bush lawyer in me says that there's a whole lot of provisos there...

He offered a recent example of an employee who had cut his finger and after medical treatment returned to work with a splint on his hand, "Now, it's definitely a medically treated injury. But is it lost time? He is back at work doing his job but there were some things we didn't have him do because it just would have exposed his injury to a risk that wasn't necessary." He described the scenario as *risk* management not *injury* management and so the injury would not count as lost time, admitting: "sometimes I get myself in this sort of moral dilemma about am I avoiding a real truth or not... you are sort of on that borderline of, "Am I

hiding data?” ...and so I’ve really got to work hard on that bit about managing risk, not treating the injury but to prevent an injury getting worse.” He concluded,

I end up being the key proprietor in the classification of all of those injuries and if I have got any problems all I have got to do is go to the corporate guys and say “this is the scenario” and they will keep me honest.

Respondent B similarly reported that an employee who returns to work on restricted duties is generally counted as an MTI not an LTI because the employee has attended the workplace for the scheduled shift. He did note however that a European division of the firm was using a separate category for injuries that did not result in ‘lost time’ in terms of absence from the workplace but required the provision of “light” or restricted duties, namely a Restricted Day. He suggested that this may be a measure they could adopt in future,

I think that we will have to use that in the future because as you get better, as far as your lost time injuries are concerned, you need to measure things that are able to hone in further and really highlight those hazards, those things that are causing injury so you can do something about it.

These responses suggest that although each of the firms captures a measure of the rate of LTI, the degree to which performance can be objectively compared is questionable. Respondent C noted, “What you find is that different businesses have the threshold set at a different level and you have to be careful because it’s just apples and oranges when you are looking at actual performance.” Furthermore, only firm B appeared to provide information about severity of injuries by capturing data to identify the average length of absence per LTI.

Finally, respondent C claimed that “My corporate reporting system actually reflects (LTI)” and noted that it has been 1,000 days since the firm’s last LTI, no specific LTI measures were disclosed in either the comprehensive data set or the analysis provided with the end-of-year OHS internal management reports. Instead, LTI’s were aggregated with various other injuries such as medical treatment injuries and a measure of ‘recordable injuries’ disclosed instead.

Recordable injuries

Firm C was the only organisation to derive a measure of recordable injuries (RI) and reported that this was captured to conform to other divisions in the multinational corporation. RI represent a broad range of injuries and illness and are defined by Jackson and Myers (1994) as including all work-related illnesses *plus* those injuries “requiring medical treatment in excess of very simple first aid *plus* those involving loss of consciousness or work restriction” (p62). Claiming to adopt the US Occupational Safety and Health Administration (OSHA) guidelines for measuring RI, respondent C stated that RI includes MT injuries, LTI “and a

couple of specific categories below that so it is more onerous than just medically treated lost time”.

Given that the RI category effectively does not distinguish between medically treated injuries and lost time injuries but rather only between first aid injuries and the more serious injuries, it was interesting to again examine the criteria at that threshold of the two categories of interest. Following on from his prior comments about prevention versus treatment, Respondent C said “There’s no risk of affecting the scoring simply because of the actions the doctor’s taking unless he is actually having to respond to the injury.” Emphasising the distinction between medical care that treats an injury (which is treated as a recordable injury) and care that aims to prevent further damage or aggravation following an injury (which he records as a first aid injury), he proceeded to describe how careful ‘management,’ or what he referred to as ‘managed first aid’ can prevent work related injuries falling into the category of a recordable injury. He illustrated this with an example of an employee who suffered acid burns to his face and hands when a battery exploded, explaining, “That could have very easily been a recordable injury but because of PPE (personal protective equipment) and the emergency response it never got there.” He claimed that effective safety training programs meant the employees knew what to do immediately “Water, water, lots of water. As a result of that, as a result of having it checked by the safety guy, (and) sending him to the hospital (and) the doctor putting drops in his eyes and him saying “This is not because of injury, this is to make sure it does not get infected”. That is all preventative, all the way along. I am quite comfortable with how we classified it.”

Respondent C reported to be “extremely proud” of the firm’s RI performance over time saying,

There you are, 600 days without a recordable injury is our current record with 120 people. We’ve got one work group that has got to 3,000 safe days – that’s ages! That’s obviously a key one because you can compare yourself with other industries with that one. Safe days – tick!

When asked how a “safe day” was determined he explained that he refers to a safe day as a day when no LTI is incurred. He reported that in the year 2000 “we thought we did really well. We only had 2 recordable injuries and we got up to about 300 safe days and we were patting ourselves on the back and going “we’ve got it made”.” Then in August one employee had an injury and then another, then another...

It turned out we had 4 injuries in four months and a couple were really the kinds of things you cringe about and really try to prevent. So we said, “what have we been doing to earn that pat on the back for 300 safe days?” We realised we were really just running on good luck. What

was happening was that people generally knew what to do, procedures were generally in place and were generally OK, but we weren't walking the talk. We said as managers, "what are we doing?" We weren't doing a great deal.

Respondent C suggested that this situation prompted a re-evaluation of the firm's safety program and of management perception of appropriate measures and levels of performance. A fundamental shift in OHS evaluation processes then took place within the firm as the focus moved from outcome measurement to a combination of input and outcome measurement.

What is safety? What do you need to measure? By the time someone's injured it's too late. We've got 600 safe days and it's all about what you're doing to make sure you're going to maintain that. So, there's that link between the accounting, count the measurables, but you have to do something to measure the immeasurables, measure the inputs we're putting into the system. Risk actually. Not just measuring outcomes but measuring the risk.

To measure this risk, respondent C now also captures various positive performance indicators of OHS risk management activities as part of the firm's OHS management system.

Positive performance indicators

In addition to the traditional failure measures outlined above, each of the three respondents also reported to record at least some 'positive' key performance indicators relating to safety activities such as the number of employees participating in safety training, safety evacuations and emergency simulations. In contrast, while all three firms recorded measures of workplace injuries, none appeared to have any processes for specifically identifying or evaluating the incidence of non-accidental OHS incidents such as workplace illness or the existence of workplace bullying, harassment or violence.

Furthermore, it was only at firm C that evidence of a systematic approach to the collection of a wide range of non-financial OHS information was uncovered. Respondent C advised "once a month we're score-carding a bunch of safety items, a scorecard with 120 elements" including recordable injuries and safe days, injury frequency, OHS training delivery and participation, emergency simulations, critical (injury causing) behaviours, internal audits and hygiene monitoring. Despite stating that "we want to get at least 90% of them done every single month," he admitted that it makes for "pretty heavy going" and they are "struggling" to meet a number of the targets, particularly in terms of activities such as emergency simulations, hygiene monitoring and internal OHS audits. Nevertheless he reported that, "Last year we did 12,000 initiatives. That's 100 per month."

These "proactive safety initiatives... cover a whole range of categories that we are doing" such as number of observations or suggestions from employees about workplace hazards, plant audits conducted, system audits, risk assessments undertaken and OHS training

provided. Specific OHS performance information to be collected was identified by the global head office and “thrown into the global computer database constructed for us by corporate” on the required monthly basis.

In contrast, both respondents A and B expressed a concern at the lack of “good measures” to assist their OHS decisions making and frustration at trying to identify appropriate measures to report to workers that would “add value”. Interestingly, firm B offered a number of “wellness initiatives” such as a Quit Smoking program but did not appear to measure the rate of take up of the free nicobate patches. Respondent A reported that following a recent government audit he had been told, “you need to have key performance indicators to measure whether you are performing well or not”. He reflected that “indicators seem to be flavour of the month,” and although, claiming to accept the advice, he expressed his concern,

As far as safety is concerned I am not sure what to measure that will add value. Is it the number of times you have a back injury? A second back injury motivated an immediate change in our process – we did not need to (physically) record some statistic to motivate that.

Respondent A seemed wary about these types of activity measurement, saying “I think you need to be careful of KPI’s because they may give people a warm comfortable feeling that we are doing something better just because we are measuring - whereas I am relying on just raw data and common sense.” Clearly not keen to pursue the type of OHS performance measurement and management system adopted by firm C, he recounted,

In a previous work-life the company I worked for used to ask people to do monthly random audits where you would go around and observe whether people are complying with written procedures and if they weren’t, you’d tell them to comply and then go back to your office and quickly write it up. I did a lot of reporting and auditing at the previous company and I am not keen. I am just not convinced of the value it added.

He suggested that an OHS management system at firm A would be inappropriate particularly given the current culture although he recognised that “some organisations may need to have that,” to have formal procedures and systems, performance measures and indicators to in order to change their internal corporate culture and the entrenched behaviours to achieve OHS improvements.

Financial measures

In view of the significance of OHS costs evident in the literature, it was somewhat surprising that the three respondents gave limited attention to financial measures of OHS costs. In fact only respondent B reported to be actively using financial costs, reporting that “Workers compensation costs is another one that we are finding is a useful tool” as the annual workers compensation insurance premiums total approximately \$1.2million per year, a cost which can

be significantly reduced “by reducing accidents and reducing our claims experience”. He suggested that the firm has had an effective return-to-work program in place for a number of years and it had been “very effective in keeping premiums low”. Unfortunately however, they had acquired a number of companies that had a different OHS culture and “suddenly it would blow out in the newer companies, so it’s a matter of learning, change the culture again...” He suggested that one difficulty arose in obtaining reliable financial information about claim costs,

We are trying to educate our people in the finance department as to how claims are managed, how costs are managed and to have a look and see how we can structure our costs in the future so that the (individual) plants that are having accidents are reflecting those real costs. At the moment we have this slush bucket. All our divisions in NSW come out of this bucket proportionate on the number of employees not proportionate on the cost of the claims.

Neither respondent A nor C appeared to use nor desire financial information relating to OHS costs, however it seemed to be for different reasons. Respondent C stated on one hand, “All of this data is my work” and “so the fellow that does the accounting, he’s responsible for finance and never the twain shall meet” but later he suggested “Well, we need to educate them a little bit” about potentially useful OHS cost information. He also noted that the “biggest problem” is the decision processes associated with prioritising expenditure to “to fix things”.

Respondent A in contrast stated that “you know the only measure I have is lost time injuries” and claimed that even if he was given workers compensation cost information, “would I use it? I am not so sure. It brings the dollar into the safety and I am trying to keep the dollar out. Something is either safe or unsafe. And I am not even sure how good a measure of safety [workers comp. cost] is.” He suggested that he felt it would be most inappropriate “to throw [workers compensation claim costs] back to people and say “look, this is what you have cost us, you’ve cost us so many thousands of dollars” and would strongly resist such a move. Instead, the “dollar comes in” as part of the routine risk assessment process undertaken when a process is reviewed or a potential change or improvement, such as new plant or equipment, is evaluated saying,

We then do a risk assessment to see whether it actually will reduce risk significantly and then how much is it going to cost us? (in that sense) the cost is always part of everything. You will assess at the end of the day whether reducing the (OHS) risk gives you a great advantage and one of the things you will measure against is cost. For example to reduce the risk of something going wrong from ‘unlikely’ to ‘nil’ might break the bank, and its just prohibitive.

4.3 Disclosure of OHS performance information

Internal OHS disclosures

Despite the various OHS information captured for communication to senior management, a general lack of dissemination of OHS performance information back to workers was evident in each of the three firms. Instead, feedback provided to both employees and line managers tended to be either ad-hoc information about specific hazards, events or processes communicated verbally at regular workgroup or “toolbox” meetings, or through information presented in safety bulletins, posters and newsletters that did typically not directly relate to the health and safety performance of the particular recipient, or work team. The common exception was communication of the current LTI or RI measure, although there was little consistency in terms of the unit of measurement communicated to the employees – for example, a rate of LTI for the company, or the site, or the workgroup or shift.

This was most apparent in Firm C where communication of OHS performance to employees on the shop floor focused on a recordable injury frequency statistic despite the comprehensive suite of performance measures reportedly collected. Furthermore, while the data collected in Firm C’s performance management system was reported and collated globally, there appeared to be little OHS performance feedback back from the international corporate head office. This was highlighted by respondent C who reported to also maintain a separate internal system of performance measures, which could be analysed at the end of year and reported to senior management at the annual management conference.

Interestingly, each of the respondents recognised that a focus on the evaluation and reporting of particular injury-based performance measures had the potential to motivate unintended, and often dysfunctional, consequences in terms of employee behaviour. In sharing their personal experiences, each of the respondents recounted instances (all occurring in “other organisations for whom they had previously worked”) where injury measures had been deliberately manipulated to reflect more favourable levels of OHS performance than existed in reality. One reported “I have been in safety systems where people become silly – dragging somebody in to work the next morning so they don’t “lose time.”” Others recounted examples where costs were hidden and employees were sent on holidays, took sick leave or were paid for “miscellaneous” leave – anything so as to not identify the absence of an employee as the result of a workplace injury.

The respondent from Firm B also shared a recent experience of an incident that had occurred at their “safest” site, a small Western Australian plant that currently has “seven or eight years continuous service without a lost time injury”. He explained that an employee had fallen over

and injured his chin requiring “quite a few stitches” - just before the end of year dinner that is held annually to recognise the site’s exceptional safety performance,

Normally a person would be off for quite a few days but he was back at work the very next morning saying, “I can’t lose time”. It was not only his individual work ethic and pride but peer pressure and also management pressure. That whole group has said we don’t want to have any injuries. Management is evaluated on LTI too.

Respondent B recognised that this situation puts a lot of pressure on the individuals to firstly, want to work safely, and secondly to not “lose time” (or miss a shift) if they do happen to sustain an injury. Clearly injured workers in this situation could face an uncomfortable dilemma, return to work prematurely and risk jeopardising their recovery or wellbeing, or alternatively, take time off to recuperate and risk the emotional, and potentially physical, repercussions from work colleagues and managers for “ruining” an exceptional team record and affecting performance evaluations.

This is more evident when OHS performance is formally linked to employee and management reward systems. Indeed, both firms A and C had adopted gainsharing programs which provided for the annual cash payment to employees based on a range of performance metrics including safety performance, as defined by injury measures. Respondent C elaborated that the potential annual employee performance bonus will “only be worth a few thousand dollars, so only worth a couple of percent of their massive wages” and it covers a number of scorecard measures, only one of which is safety. Nevertheless, in both firms A and C, a workplace injury meant that these cash bonuses would be reduced for all employees, not just the person who was hurt. Respondent A claimed that the bonus system was an extra incentive but,

It doesn’t make them more safe. Its just something that’s tagged on, but it is not going to change their thinking. They’re a good group, If I took that away, its not going to make them less safe, guaranteed.

Respondent A was also unconcerned that this scheme might provide an incentive for under-reporting of injuries, saying

“I am almost 100% positive they would tell me... People are fair dinkum about the system and they report everything that goes wrong. Besides, I’ll know about it straight away. It’s that transparent, it really is. If it should happen... eventually I would know about it and the ramifications would be far worse. Our corporate culture is not one of finger pointing and blame allocating, and that takes a lot of pressure off the guys. We are all accountable, all responsible.

Respondent C reported that the gainsharing program was going through a review process at the moment and was only in its second year saying, “I can’t remember what happened in the first year. I haven’t got a good feedback on it.” He claimed it “just helps” to communicate

and reinforce what's important and "the financial benefits are not the point of it." As to whether this type of bonus system motivates under-reporting, respondent C stated that he had actually been warned by one of the employees to "Watch it! You are pushing injuries underground." He stated that he did not believe this was the case however, commenting:

I guess the real answer to that is, if someone's actually injured to a point that it's recordable (injury) and they're not reporting it then they've got a real issue because there's no compensation for them. I'm quite convinced that pushing information underground is not it.

Nevertheless, while there was no evidence to indicate that injuries had been deliberately "hidden" the incident trend report proved interesting. This report graphed the number of incidents reported each month, including injuries, near misses, environmental incidents and employee reports of potential hazards revealing a slightly increasing trend from 1998 to 2003, with a small jump to its highest level in over 10 years immediately before the bonus system was implemented. Since the implementation of the bonus system, the incident reporting rate has fallen to its lowest level in over 10 years. Nevertheless, while respondent C commented, "the last one's historically a bit low so should present an alarm bell" he did not draw a connection between the reporting rate and the bonus scheme instead stating,

...over quite a long period – 10 or 12 years, I have got this quite a stable rate of reporting of incidents and that is really good. (That) is not that are things getting better or worse, this is that people are in the habit of reporting things. There are things that are potentially severe but there is also a lot of reporting of things about preventing recurrence and hazards.

Given that firm C's measure of the number of incidents is an aggregated measure comprising both injuries and suggestions for improvement, it was not possible to specifically identify from the reported information whether the rate of injury had in fact changed significantly since the introduction of the bonus scheme at firm C.

External disclosures

As with the OHS management practices adopted in each of the firms, the corporate safety performance disclosures provided by the three firms also differed markedly. Not surprisingly, Firm A, who reported little interest in recording safety performance indicators, did not provide any safety performance disclosures in the information provided on the corporate website. Somewhat surprisingly, Firm C provided relatively little in the way of quantitative performance measures despite the plethora of indicators their EHS management system routinely collected. The 2004 Annual Report for Firm C expressed a strong commitment to health and safety and identified selected highlights such as sites in the USA and Victoria that had achieved external accreditation of their safety programs. The only quantitative safety measure provided in the report was a graph depicting the percentage of progress toward the

implementation of EHS corporate standards, aggregated across the group, over the past five years.

A separate EHS Report available on Firm C's website revealed two additional performance measures. The first was an (OSHA) Recordable Injury Rate trend graph (aggregated across the group) and the second, a table revealing the total number of sites operating in various countries and highlighting sites that were free of LTI's during the period (also indicating the period without injury for that best site in each country). The EHS Report also provided lengthy narratives expressing commitment to safety and to the various OHS practices adopted such as training programs, internal audit and safety system accreditations.

Surprisingly, no quantitative information about LTI numbers, frequencies or severity was provided, either by country or aggregated across the group, and no quantitative information was provided within the detailed accounts of processes for dealing with near misses, training, audits or other health and safety initiatives. The quality of these social disclosures, defined by characteristics including theme, evidence, amount, extent to which it is auditable and news (Guthrie et al. 2004; Gray et al. 1995), may be compromised by the omission of data which was by all accounts, routinely collected and presumably readily available.

Although appearing less focused on continuous data collection than Firm C, Firm B provided the most detailed quantitative safety performance disclosures of the three organisations. Despite lacking the narrative detail provided by Firm C, Firm B's 2004 annual report revealed various lost time injury graphs including Number of LTI's for the period, Frequency of LTI and Number of Days Lost per LTI. Each indicator was provided by country of operation in addition to the aggregated measure for the group. Also provided were measures such as the percentage take up of flu vaccinations as part of the employee well being program and details relating to safety initiatives, training in hazard and risk reduction, benchmarking, OHS consultation, health newsletters - to promote healthy awareness among employees and return to work programs. Unfortunately, some data of this data was highly aggregated, while other sections failed to indicate whether the activities and initiatives referred to where undertaken in Australia or elsewhere within the group.

The acquisition of US and European business operations in 2004/2005 saw an additional performance indicator, Total Recordable (Injury) Rate presented in Firm B's 2005 annual report along with the introduction of discussion about Restricted Work Injuries. Also in 2005 however, Australian injury data was aggregated with that of the New Zealand operations

leaving no way to identify the relative performance of the Australian business. This was unfortunate given the previous contrast in relative performance between the two countries.

5 Conclusions

The active commitment of each respondent to providing a safe workplace was evident in the results. Rigorous attention to OHS management and practices for risk identification, risk assessment, risk elimination and control were demonstrated at each site. Despite this, there were significant differences in the way in which OHS activities were managed by the firms, from Firm A's use of very informal structures and communication channels through to Firm C's adoption of a comprehensive OHSMS and associated KPI performance measurement, collection and internal reporting practices. While there was slight variation in the use of workers compensation data across the three firms, overall the level of financial OHS information used by managers was generally very low and perceived to be of limited value for health and safety decision making. It also appeared that accountants and accounting did not play a role in the non-financial measurement or analysis of OHS performance data.

Consistent with the existing literature, injury based metrics dominated the OHS measurement systems in all three firms, although each appeared to focus primarily on a different injury statistic, hindering direct comparisons of safety performance. Only Firm C had adopted a formal OHS management system and was routinely capturing a comprehensive range of both positive (process) and failure (injury) safety indicators. However, notwithstanding the considerable effort and commitment the employees at Firm C devoted to maintaining this system, it was difficult to assess the extent to which the OHS management system is responsible for their safety outcomes.

Interestingly, external corporate disclosures failed to reflect various OHS management practices identified at each firm. The disclosures of firms A and C both failed to convey the level of attention to OHS management, performance measurement and analysis that had been identified during the interviews. These findings mirror those of prior corporate environmental reporting research in terms of the lack of completeness of corporate disclosures (see for example Larrinaga-Gonzalez et al. 2001) and reinforce previously recognised limitations of "annual-report only" studies (Campbell et al. 2003; O'Dwyer 2002; Unerman 2000).

Also identified in the external disclosures were variations in the particular performance indicators disclosed over the two year period highlighting potential OHS survival rate issues

associated with OHS indicators. Poor indicator survival rates impair the ability of stakeholder groups to monitor performance over time (Carlin and Guthrie 2001), although longitudinal research would be needed to assess whether this is a widespread problem with corporate OHS disclosures. Furthermore, routine monitoring of specific indicators, such as lost time injury, was also shown to be problematic due to the imprecise nature of calculation. Issues identified included: differing interpretations of injury classification thresholds; potential under-reporting; and even the vagaries of luck or chance. This highlights potential problems inherent in using injury measures to make comparisons of OHS performance across organisations, and indeed even across the departments, divisions or work groups within a single organisation. Clearly a lower (or higher) lost time injury count does not necessarily mean that one site is unequivocally more (or less) safe than another.

Finally, while examining the use of injury performance measures employed at each site, these results have highlighted dysfunctional behaviours that can potentially arise when injury measures are explicitly linked to performance based reward systems. Clearly an incentive will exist to under-report injuries and accidents thus ‘maintaining’ strong LTI trends and ensuring continuing rewards for the individual or team. Notably however, the results identified not only incentives for manipulation of OHS performance statistics but also the incentive for both peers and management to pressure injured employees to return to work immediately after an injury to avoid incurring “lost time”. In the reported example the employee was commended for his extraordinary “level of commitment,” however the risk of decisions such as this having implications for injury recovery and long-term wellbeing can not be discounted. There is clearly an ethical responsibility to ensure the corporate policies and performance systems adopted do not improve measured organisational health and safety performance at the expense of the private, and therefore unmeasured, health and safety of injured individuals.

Overall, the increasing corporate disclosure of OHS performance measures highlight the need for effective measures of workplace safety. Nevertheless, the evidence provided by this research supports the perception that, despite their many limitations, firms continue to rely heavily on failure indicators such as injury measures. These results also identify an apparent failure of accounting to assist in the development and provision of useful financial and non-financial performance information to OHS managers and policy makers. Whether accountants will seek to engage with OHS management and apply their specialised expertise in performance measurement and analysis to the further development of more appropriate

and reliable performance measures remains to be seen. Perhaps the greater challenge is for organisations to focus on social justice and the basic human rights of workers; and pursue the continuous improvement of employee health and safety, rather than the continuous improvement of (somewhat “fuzzy”) health and safety numbers.

Limitations and further research

Given the lack of current research into OHS performance evaluation, this study sought to provide some preliminary evidence as to organisational practices in a small sample of firms. The non-random selection of organisations, the small number of case studies undertaken and the selection of only large organisations that face significant health and safety risk together limit the ability to generalise these results to a wider population of organisations. It is also recognised that since each of the respondents is a senior manager, the results provide only third party perceptions as to the motivational effects of the various OHS activities and measures on worker behaviour and overall safety performance and to the provision and usefulness of information provided by each firm’s accountant.

Further research might explore the visibility and use of workplace safety costs and activity drivers through, for example case studies that examine particular workplace injuries or fatalities. These might identify associated OHS costs and to investigate the mechanisms by which accounting information systems do, or could potentially, better capture and present OHS performance information to managers. Notably however the managers interviewed were not particularly interested in receiving OHS cost information and the extent to which a cost driven approach will motivate employers to fulfil their ethical obligation to provide a safe workplace is also unclear.

Of more relevance to the managers interviewed in this study appears to be academic engagement in research that seeks to identify and contribute to the development of more informative indicators of occupational health and safety performance. Tied to this is a need for case based research that examines in detail the social and the economic impact, on both organisations and individuals, of OHS risk, organisational risk evaluation, management practices and OHS failures and incidents.

OHS Practices	Respondent A	Respondent B	Respondent C
Responsible for safety	All employees	Line management	Line management
Safety policies	Informal	Written	Written
Safety training	Yes	Yes	Yes
Emergency simulations	Yes	Yes	Yes
HazOP* Process	Yes	Yes	Yes
Incident registration	Yes	Yes	Yes
Safety injury reporting	Adhoc	Yes	Yes
Safety (OHS) system	-	-	Yes
Safety audits /reviews	-	-	Yes

Table 1: Summary of OHS management practices

Injury Measures	Respondent A	Respondent B	Respondent C
Reportable “Incidents”	-	Yes	Yes
First Aid Injuries	-	-	Yes
Medically Treated Injuries	-	Yes	-
Lost Time Injuries	Yes*	Yes	- **
Recordable Injuries	-	-	Yes
- Days lost per LTI or RI	-	Yes	-
Other injury measures	No	No	Yes
- for example Injury frequency	-	-	Yes

Table 2: Summary of injury measures collected and reported to management at end of period.

*Adhoc reporting only

** Recorded separately as a LTI measure but aggregated in RI for reporting purposes

Other Measures	Respondent A	Respondent B	Respondent C
<i>Non-financial indicators</i>			
- Safety training	Yes	Yes	Yes
- Reportable incidents	-	-	Yes
- Emergency simulations	-	Yes	Yes
- Safety audits	-	-	Yes
- Critical behaviours (causing injury)	-	-	Yes
<i>Financial measures</i>			
- Workers compensation	-	Yes	Limited
- Other financial measures	-	-	-

Table 3: Summary of injury measures collected and reported to management at end of period.

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