Incident Reporting Systems – The Hidden Story

Tanya Hewitt, MSc, PHRAM, PhD candidate; University of Ottawa; Ottawa, Ontario, Canada

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Abstract

Incident reporting systems are often seen by the general public and governments as an absolute necessity to ensure safety. However, there is more to incident reporting systems than what one would surmise from the name. While these systems are designed to record incidents, aiming to ultimately inform the system to not make the same or similar mistake again, there is a lot behind the scenes. A very high level depiction of an incident reporting system can be described as being comprised of three phases: data collection, data analysis, and subsequent learning. These three phases are discussed, including some of their many complexities in typical incident reporting systems. Other issues are raised, including some misleading assumptions of icebergs and triangles, and storytelling or informality as an alternate to traditional incident reporting systems. Overall, while the goal of making a system safer is indeed a worthy one, there is much to consider in establishing an incident reporting system as one of the tools in achieving safety.

Introduction

The ostensible goal of an incident reporting system is one tool of many to help make the working environment safer. Reported incidents should inspire those in positions to do so to make changes to make the system safer. However, the recommendation of the Institute of Medicine's (IOM) 1999 seminal report *To Err is Human* (ref. 1) was to not advocate for a national incident reporting system for healthcare adverse events, citing the number of unanswered questions (at that time) as reasons to not invest the colossal resources it would take to establish and maintain a useful incident reporting system. The public's demand for incident reporting systems is leading politicians to legislate such systems in healthcare, but it is still questionable if the current prototypical incident reporting system is as useful a tool as it could be. This paper is a literature review of the complexity of incident reporting systems, and also looks at triangles and storytelling and how they relate to these systems to make the overall system safer.

Incident Reporting Systems and their Complexity

Any incident reporting scheme must involve various components. One suggested compartmentalization is depicted in Figure 1.

Figure 1 – Very high overview of an incident reporting system.

"Collection": Special concerns such as organizational embarrassment and fears over the potential loss of funding can undermine investigation depth, breadth, and quality. Sociopolitical concerns can pre-empt even the most effective data collection effort. (ref. 2 p3) Data collection is not a given. "If you build it, they will come" does not bode true for incident reporting systems. Concerted effort must be paid to get reports coming in. As mentioned, active reporting depends entirely on someone forthcoming with information on an event. Many incident reporting systems claim to have chronic under-reporting. There may be varied reasons for this.

Workload: Perhaps the persons who should be in the best position to identify and act on known hazards are stretched too thin or focused on other priorities. (ref.3 p28) People may just be too busy or forget, and potential system learning opportunities are consequently unrecognized.

Not considered report worthy: The whole issue of an incident being just "the way we do things around here", which is a characteristic of Diane Vaughan's normalization of deviance, and the system drifting into failure

Not understanding the importance to organizational learning: If people are fixated on their own performance as opposed to the potential to assist in organizational learning, they will not be forthcoming with disclosing "their mistakes" A holistic understanding of error causation and the importance of incident reports to shed light on deeper system problems needs to be emphasized.

Fear of retribution: Possibly the number one reason to not report is fear – either unjustified or (sadly in many environments) justified. The official policies of no-blame, feedback to reporters, organizational learning, and repair of root causes contrasted sharply with the occupational values of responsibility, vigilance, carefulness and the like. This conflict is the major reason why incidents are not reported. (ref. 4 p 1208) Too often, failure to report reflects a punitive environment in which it can be harmful to the reporter or colleagues to report. (ref. 5 p 31)

> …employees do not report incidents for a number of reasons: categorization of incidents as part of the job, especially among blue-collar workers in macho industries; fear of colleagues' teasing and supervisory reactions such as disciplinary actions; attribution of responsibility, blame and shame; fear of legal sanctions; and lack of management commitment and feedback or follow-through after incidents are reported. (ref. 4 p 1211)

Organizations need to make crystal clear *who draws the line* insofar as incidents are concerned, and *what exactly the consequences are* for reporters of those incidents (ref.5)

No point: But equally as harmful is the possibility that engaged workers who believe in organizational learning enthusiastically participate in a system that is nothing better than a black hole. Ideally,

> Narrative reports provide the opportunity to capture the rich context and storyline that allow the conditions that contributed to the error to be explored and understood… Providing reporters with the chance to tell their stories implicitly values their observations… Voluntary systems invite a professional ethic of participation in continuous learning and prevention, encouraged by acknowledgement and the reward of visible change. (ref. 5 p22, 37). However,
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> Nothing frustrates personnel more than feeling that their recommendations are being dismissed by managers with little consideration of technical merit. Repeated analysis with no follow-through results in personnel losing interest in the necessary activities. (ref. 7 p 686)

Rather than gaining from reporting, they seem to lose when they do it, since they receive very little feedback, and much of the feedback they do get is negative. (ref. 4 p 1219) The feedback from the incident reporting scheme to the reporter is *essential* to validate the experience of the reporter, and to encourage more reporting. All in all, just wanting people to report won't get more reports. Explicit efforts must be paid to ensure the consequences of reporting are well understood, that the reporters understand they have a unique perspective in systems learning that should be capitalized, and that the incident reporting scheme communicates with reporters. The most powerful incentive to encourage reporting is to empower the reporters to have a role in "improving the system". But this does not come for free – planning for reporter involvement in the larger picture is not trivial.

"<u>Analysis</u>": After gathering the information, the data must be analyzed in some fashion to make meaningful recommendations on making the system safer. "Ultimately, it is human experts who must translate the knowledge gleaned from aggregated reports into meaningful recommendations for action to improve care." (ref.3 p56) This process will be looked at through three lenses: taxonomy, large numbers and perspective.

Taxonomy: "Classification can be the cornerstone of what the system does." (ref.3 p25) The classification of an event into various causal factors is often seen as the heart of an incident reporting scheme.

> The challenge faced by reporting and learning systems is the translation of complex narrative reports to analyzable data. Many existing incident reporting systems fail to quickly and accurately extract meaning from these narrative elements and/or force users through rigid systems that capture "clean" data but do not capture the full picture of an event. (ref.8 p2)

Data can be collected, however, through software, such as the IDA system in a chemical plant, described by Hale (ref. 9 p 67). (A similar approach is in the Australian Incident Monitoring System, as described in the WHO Reporting Guidelines.) A question path given to the reporter depends on answers to earlier questions. This leads to a customizable (by the safety experts) systematic approach, approach, and can guide one to the causal factors at data capture. Hale emphasizes not to collect data just because it can be collected, but to have a model driving the collection. But what to prioritize – narrative rich in detail, or data easily categorized? The more categories a system contains, the more complicated it becomes for users and the more elaborate the requirements are for data analysis. (ref. 8 p A13) There are problems too.

> From losing local relevance: A deeply complex social reality is thus reduced to a limited number of measureable components. For example, does the safety department have a direct route to highest management? What is the reporting rate compared to other companies? ... The local rationality principle (people's behaviour is rational when viewed from the inside of their situations) is impossible to maintain when context is removed from the controversial action. And error categorization does just that: it removes context. (ref. 10 p4, 61)
>
> To poor categorization: Trevor Kletz states in Lessons from Disaster that ''listing human error as the cause of an accident is about as helpful as listing gravity as the cause of a fall. It may be true, but it does not lead to constructive action.'' (ref. 7 p686); "You know, you get caught up in forms, in matrixes, in computer programs, and it just draws you in. They were so focused on the mechanics and the process that they never looked at the problem holistically. In the act of tearing something apart, you lose its meaning." (ref. 11 p125)
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> To poor generalization: Because of differences between taxonomies, data can often not be shared among systems. Further, none have been validated, in the sense of studies that demonstrate that the classification and analysis method used leads to significant improvements in patient safety (ref. 5 p23)
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> To appreciable logistical challenges: Because the resources required for taxonomy and analytical development tools are substantial, development of classification schemes is probably better left to national or international agencies rather than individual health-care systems. (ref. 5 p25); "As well, taxonomy will have to be flexible, or categorized events revisited and re-analyzed as it changes with further understanding" (ref. 8 pA13).

While taxonomies are important to incident reporting systems, the designers must acknowledge and plan for these challenges.

Large Numbers: Although reporting of errors, whether or not there is an injury, is sometimes done within institutions, if reporting of all errors is requested, the number may be overwhelming. Therefore, some sort of threshold is usually established – such as "serious" errors, or those with the potential for causing harm (also called "near misses" or "close calls"). Establishing such a threshold for an incident reporting system can be difficult. (ref.3 p20) There is a desire of many incident reporting systems to gather up lots of data, to enable statistical analysis and the emergence of trends. "…estimations of the probability of recurrence of a specific type of adverse event or error can be calculated. Analysis of reported outcomes can also produce an estimate of the average severity of harm caused by the incident." (ref. 5 p27) However, "if you get too caught up in the production of information, you drown in the data." (ref. 11 p144). Additionally,

> When a large number of accidents or incidents are examined collectively, it is sometimes possible to identify recurrent patterns within the accident producing circumstances. More commonly, however, the most conspicuous result of such analyses is the remarkable absence of significant patterns or trends. (ref. 12 p20)

Furthermore,

> Managing safety by numbers (incidents, error counts, safety threats), as if safety is just another index of a Harvard business model, can create a false impression of rationality and managerial control... In the end, everyone agrees that counting errors is a good step forward on safety because almost everyone agrees that it is a good step forward. The practice is not questioned because few seem to question it (ref. 10 p2,50)

More important is the interpretation of all these numbers, which could give an erroneous impression:

> The absence of failure, in other words, is taken as evidence that hazards are not present, that countermeasures already in place are effective ... Error counts do little to elucidate any of this... Error counts do not suffice. They uphold an illusion of rationality and control, but may offer neither real insight nor productive routes for progress on safety. (ref. 10 p63,64)

While in the depths of data analysis of incident reporting systems, safety officers could well lose sight of the forest for the trees. Designers should not allow an incident reporting system to be number driven. "Safe operation is not about setting targets, it is about taking action." (ref. 7 p 688)

Perspective: The very definition of what defines a reportable event is extremely dependent on perspective, in multiple senses. Defining a system breakdown is part of this perspective problem, as illustrated here, "Accident causation is also separated from injury, so that even crossing a red light without injury is considered an accident since it involves a failure to manage the situation at hand. Thus, the focus is on breakdown or control failure, rather than on injury or damage." (ref. 4 p 1210)

> Crane driver drops a load (dangerous occurrence)
>
> - it hits a person standing below (an accident)
> - no one is standing underneath at the time (near miss: chance factors)
> - a co-worker pushes a person out of the way (near miss: human recovery)
> - the area under the crane is restricted (near miss: management control)
> - the crane design has an automatic stop device (near miss: technical safeguard) (ref. 13 p 5)

Many who are asked to report on system breakdown may not appreciate this, unless they have been specifically asked and trained to do so. Another is hindsight bias, as explained below.

> Few in positions to judge the culpability of a professional mistake have as much (or any) awareness of the debilitating effects of hindsight…if we find ourselves asking "How could they have been so negligent, so reckless, so irresponsible?", then this is not because the people in question were behaving bizarrely. It is because we have chosen the wrong frame of reference for understanding their behaviour. The frame of reference for understanding people's behaviour, and judging whether it made sense, is in their normal work context, the context they were embedded in. This is the point of view from where decisions and assessments are sensible, normal, daily, unremarkable, expected. The challenge, if we really want to know whether people anticipated risks correctly, is to see the world through their eyes *without* knowledge of outcome, without knowing exactly which piece of data will turn out critical afterward (ref. 10 p 72)

There is a very large literature on hindsight bias, which the incident investigator must be thoroughly aware of to do their utmost to avoid. These cause problems for managing the risk with a complex system

> Given the benefits of hindsight, it is easy enough to recognise the contribution of [sharp end precursors] to individual accidents. But it is quite another matter to foresee their contribution to future

> accidents....Their adverse consequences arise through multiple and often unforeseeable conjunctions with local triggering hazards. (ref. 12 p21-22)
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> ...as the system of preventive measures – and the management system to develop and sustain it and to evaluate its performance – becomes more and more complex, people can see less and less clearly what aspects contribute to controlling what scenarios... If it is not known precisely what that part does in the risk control system, the changes cannot be steered and evaluated. (ref. 9 p16, 17)

And this lack of clarity can cause real problems for those trying to make sense of the reports, the numbers generated by the systems, and for safety professionals to make meaningful recommendations to "improve the system."

"Learning": "Ultimately, it is the action we take in response to reporting – not reporting itself – that leads to change…Stating it simply, it is more important to develop a response system than a incident reporting system." (ref. 5 p3, 54) Part of this response system is feedback to the reporters.

> Regardless of the credibility of the source or even if the issue turned out to be a 'false alarm'; informants reported that it was important to follow through by investigating the report and providing feedback to the reporter. "What happens if they are right the next time? "(ref. 3 p43)

Often the response is a specific safety initiative -"a blitz"- to reinforce various concepts. However, "Outsiders can perhaps get some short-term leverage by (re)imposing context-insensitive rules, regulations or exhortations and making moral appeals for people to follow them, but the effects are generally short lived." (ref. 10 p77)

> People either neglect their job to get on with the current drive, or silently organise for collective sabotage of the drive to get their work done. In either event they become deaf to the cry of ''wolf". And when the real crisis comes, when all hands should drop everything and pitch in, they treat it as just another case of management-created hysteria. (ref. 14 p505)

Another common response is for management to send out a memo reinforcing the importance of following procedures. However, there is a science to procedure writing of which many procedure writers are unaware, and furthermore,

> Introducing more procedures does not necessarily avoid the next incident, nor do exhortations to follow rules more carefully necessarily increase compliance or enhance safety. In the end, a mismatch between procedures and practice is not unique to accident sequences. Not following procedures does not necessarily lead to trouble, and safe outcomes may be preceded by just as many procedural deviations as accidents are…Procedures, in other words, end up following work instead of specifying action beforehand... Procedure following can also be antithetical to safety. (ref. 10 p133, 135)

What organisations should recognise is the nature of performance variability, not procedure following, which builds organisational resilience, and thus safer systems.

> Safety, then, is not the result of rote rule following; it is the result of people's insight into the features of situations that demand certain actions, and people being skilful at finding and using a variety of resources (including written guidance) to accomplish their goals…It requires the development of judgement about local conditions and the opportunities and risks they present, as well as an awareness of larger goals and constraints that operate on the situation.... planning for surprise.(ref. 10 p139,141)

There is a large literature on resilience engineering; Dr Erik Hollnagel's writings are quite illustrative. A learned senior Canadian government official remarked that in preparing for H1N1, she pulled out the SARS "lessons learned", whereby she remarked that the lessons were hardly learned – they were written down, noted, acknowledged, but not learned. "Indeed, lessons are not learned before organisations have actually made the changes that those lessons prescribe."(ref. 10 p202)

Some Issues in Incident Reporting Systems

If data collection, analysis and the resulting learning are not enough to keep a safety officer busy, there are still other issues to consider.

<u>Triangles and Icebergs: Ratios and Common Causes:</u> Most incident reporting system justifications involve at minimum the mention of an infamous triangle (Figure 2) depicting the frequency of incidents of varying severity, implying various relationships between them.

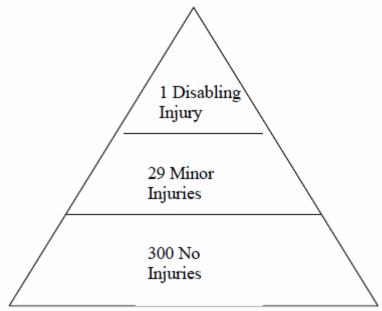

Figure 2 — Typical Heinrich/Bird Triangle depicting ratios of inconsequential to minor to serious injuries. While the ratios may change, the fundamental relationship is firmly implanted in many safety domains. (Figure taken from ref. 15 p29)

While the safety literature is rampant with statements such as: "Experience has shown that a relationship exists between those events affecting nuclear safety, performance, reliability, and individual events that have no significant impact on performance. This relationship is … often confirmed following the evaluation of individual events at a plant." (IAEA, 2005, p3), there are a few studies that state that: "The identical causation hypothesis of the iceberg model must be corrected, because it goes against the empirical evidence." (ref. 17 p 115) and

> Perhaps a more fundamental objection to using risk criteria is that recent work appears to indicate that high risk near misses are a poor predictor of actual incidents. The things which we perceive as high risk are apparently not the things which cause the actual incidents. ... There were substantial differences in the frequency of causes of actual and potential incidents (ref. 14 p504)

The implications of this triangle are profound for incident reporting systems. Some assumptions in the iceberg model, according to Van der Schaaf (ref. 13 p3) include that

- incident propagation progresses from bottom to top (chances for prevention decrease as one reaches the top)
- the order of incident analysis is top down, but with different starting points
- modern investigation techniques go as far down the pyramid as possible

The **ratio** implied by the triangle suggests that the more inconsequential or very minor injuries that are mitigated, the major injuries will be reduced by the same proportion. Put another way, the Lost Time to Injury (LTI) metric often quoted is a reliable predictor of the risk of major accidents. However,

> Today, the common cause hypothesis has come to imply a ratio relationship of consequences (and not of causes)… The ratio model as evidence for a common causal pathway has become embedded in the literature and is not questioned. The ratio of accidents and incidents occurring says nothing about the underlying causal factors—not to mention the barriers in place or the error recovery processes that took place —so that it is difficult to understand how the ratio relationship has become so entwined with causation. (ref. 18 p106)

Wright (ref.18) has a list of studies analysed for proper interpretation of the iceberg model (distinguishing numbers of consequences from causes), and conclusions of each study. Overall, numbers of accidents and incidents, while larger for inconsequential incidents and minor accidents, do not play a significant role in predicting numbers of major accidents.

The **common cause hypothesis** suggested by the triangle is a more interesting implication. If major and minor accidents and inconsequential incidents are caused by the same factors, we need to fully understand the base of the triangle to prevent occurrences at its apex. That is,

> Another vital assumption is that these … levels of the iceberg are directly related in the sense that they show largely overlapping sets of "root causes": a different starting level should *not* lead to an entirely different set of root causes being identified by the analysis and should also then *not* lead to a fundamentally different set of suggested actions in order to take place. (ref. 13 p4)

Interestingly, "If one examines the original texts [Heinrich 1931, *Industrial Accident Prevention* McGraw Hill, New York] there was never a claim that the underlying causes for each degree of seriousness were the same" (ref. 9 p 8) Hale goes on to say "What is therefore surprising is how the strong belief became established among safety practitioners, and apparently also among safety researchers that the causes of major and minor accidents are indeed the same. This seems to be an example of the urban myths that cluster around beliefs about risk and safety generally." (ref. 9 p 8) If the bottom of the triangle is truly important to fully understand, we immediately run into problems: "The numerous "iceberg" theories of accident causation presume various (widely differing) ratios between unsafe acts, near misses, lost time injuries and fatal accidents. But there are serious measurement problems. The actual numbers of unsafe acts committed are almost impossible to determine." (ref. 12 p20)
For example:

> Medical errors are so breathtakingly common that the admonition to "report everything" is silly. The average intensive care (ICU) patient has 1.7 errors in his or her care daily, and the average hospitalized patient experiences one medication error per day. A system that captured every error and near miss would quickly accumulate unmanageable amounts of data, require an armada of analysis, and result in caregivers spending much of their time reporting instead of caring for patients. (ref. 19 p155)

Hale (ref.9 p19) concedes that "It may be true that by looking at the totality of minor incidents a total map of all eventual scenarios leading to harm in a system can be made. But this would be a gargantuan task. It would be like creating a 1:100 scale map of a whole country when all we want to do is drive along the motorways between its main cities". Aside from focussing on collection of data that may not be of any use for management of major accidents, it could have profound consequences should the organisation misappropriate resources to minor injuries at the expense of major accidents. Overall, "little will be achieved in preventing major chemical industry disasters by encouraging people to hold the handrail when walking down stairs." (ref. 9 p11) So, in short, "... if you want to prevent fatalities, you need to target your safety programme on the things which cause fatalities. Likewise for major accidents."(ref. 14 p504), and "If minor injury scenarios [that cannot progress to major disaster] are tackled, it should be because minor injuries are painful and costly enough to prevent in their own right, not because it is believed the actions might control major hazards." (ref. 9 p19)

<u>Storytelling and Informality:</u> While stories in formalized incident reporting systems may be used to ensure motivation is maintained, there are many workplace cultures where storytelling is the main learning employees encounter. Storytelling is indeed an attractive practice for the technicians: for transferring learning from incidents, as a means to reproduce selves and occupational communities, as a means for apprenticeships ...Stories are foremost a device for the occupational community in which they are told. They are told about events that seem memorable and worth telling, and they are structured according to the practitioners' own script. Their distribution and the learning involved belong to the community. The learning is integrated into the participants' cultural frame and suited to their daily needs. (ref. 4 p 1218) This practice is well ingrained in many local working environments, engaging the majority of workers.
"This is part of the vast informal networks characterising much maintenance work, including informal hierarchies of teachers and apprentices, informal documentation of how to actually get work done, informal procedures and tasks, and informal teaching practices." (ref. 10 p145) However, there are some distinct differences in understanding accident causation between informal localized storytelling and formalized organizational learning.

> The system etiology originated in scientific discourse, whereas the occupational etiology developed within occupational communities. The two etiologies thus have different rationales and practices. The system etiology becomes increasingly technically sophisticated, standardized and computerized, whereas occupational etiology is reproduced mainly by rules of thumb, tacit knowledge, apprenticeship, habitual organizational routines, and storytelling. …In occupational etiology, attention to an event is thus dependent on the severity of the consequences of the event, rather than on the causes and possible consequences of the breakdown of anticipation and control. By contrast, in a system-based etiology, the breakdown itself would have been the focus of interest and the event would have been ascribed to failure of control. (ref. 4 p 1208, 1217)

In Johan Sanne's study of railway technicians' understanding of incident reporting, he said there was a near ritualistic initiation to be accepted into the community, but this allowed him to categorize three types of incidents he observed: those the workers thought worth reporting, those they were ashamed to report, and those who didn't even meet the workers' radar scale. He also noted that most of this learning took place during coffee breaks and while travelling – a very informal approach. All this allowed him to observe that:

> Different accident etiologies shape what is considered an incident in different communities. They also shape the pattern of reporting and non-reporting, as well as what are considered appropriate measures after an incident … The technicians' accident etiology gives meaning to their work, to their understanding of accidents, and to the ''repair" work required. The occupational etiology is based upon their local practice, emphasizing vigilance, carefulness, skill, responsibility and so forth, and usually neglects root causes. This frame is locally rational and intelligible, given the technicians' limited power to influence their working conditions, as well as their limited training and the poor feedback they receive when incidents are reported (ref. 4 p 1206)

Aside from local storytelling not being widely distributed to all that should know of the potential learning, the occupational etiology from which the workers' report reinforces their values and norms, perhaps to the detriment of the larger system. "…accident stories are developed in which procedural deviations play a major, evil role, and are branded as deviant and causal. The official reading of how the system works or is supposed to work is once again re-invented: Rules mean safety, and people should follow them."(ref. 10 p141) The occupational etiology focus on individual performance threatens the workers' stature as a competent professional in a highly judgemental team. Individual responsibility is paramount; hence the repercussion of shame from one's own peers after an incident can be very high, despite the fact that there may be a host of causal factors outside the worker's sphere of influence that an incident may elucidate. Without a deeper understanding of accident causation and the value of incident reporting, the workers will reinforce the stereotype of "good system, bad apples". Furthermore,

> … since stories are often told as a way to justify and legitimize technicians' practice, stories are biased towards benefiting technicians' and illustrating the incompetence of others, such as dispatchers, train drivers, and supervisors. ... Stories become strongly structured, stripped from their context, and capable of only a single interpretation, rather than providing food for thought about alternative interpretations and structural repair. (ref. 4 p 1219)

Even if the workers did use the formalized organization-provided incident reporting system, they would not articulate the events in the same way as a safety officer, challenging further analysis. However, there is a sociological value to having stories in workplace cultures. The challenge therefore is to find a combination of informal storytelling emphasizing local experience and formal organization learning emphasizing a systems perspective that blends the best of both worlds. Some suggestions from both Johan Sanne and Sydney Dekker include:

- Train workers on incident reporting principles, including the harm of teasing
- Allow trained workers to peer investigate
- Empower workers to hold management accountable for fixing systemic issues
- Ensure managers report their incidents into the reporting scheme (example setting, too)
- Ensure interim feedback from the formal reporting scheme emphasizes systems thinking

- Ensure lessons generated from the reporting scheme are widely shared

Ideally, the stories could be used to support the motivation function of an incident reporting system, to keep the mentality of "that could never happen here" in check. "The act of recognising and reporting near misses itself becomes an important *reminder* to act safely; also the selection of specific examples of old, well known but still recurring problems and new ''impossible'' combinations of factors, described in detail in the setting of one's own workplace, should provide convincing illustrations of the fact that an absence of overt accidents is not to be equated with a perfect hazard control system." (ref. 13 p 31). More recent work by Dr Garth Hunte MD PhD (University of British Columbia) has reaffirmed the importance of storytelling in safety practices in the emergency room.

Summary

While many believe incident reporting is thought to be a necessary component of risk assessment and risk management, there are in reality a host of issues that present themselves as formidable challenges in establishing a useful, functioning incident reporting system. There are some successful incident reporting systems in existence – many High Reliability Industries (nuclear power, transportation, chemical management, possibly health care) have good models, but no one system is a turnkey solution. Anything worth having does not come for free – and this is most certainly true of incident reporting systems. It is a domain where the uninitiated can easily become overwhelmed, if they don't do their homework in advance. The design of the system is crucial. What information do you want? Why? How will you get it? Who will report/do the analysis/enact the recommendations? are but starter questions in establishing an incident reporting system. And this says nothing about long term maintenance, which is a domain in itself. Before heeding to public pressure, organisations are well advised to acquaint themselves with the magnitude and complexity of the effort required to establish an incident reporting system. While many have been able to strike a balance between effort expended and rewards from the system, it is by no means a guarantee.

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Biography

Tanya Hewitt, Graduate Student, -mail- thewi025@uottawa.ca.

Tanya Hewitt is currently pursuing doctoral studies at the University of Ottawa in Population Health. Prior to this, she worked for 10 years as a Physics Specialist regulating cancer clinics at the Canadian Nuclear Safety Commission. She has been the programme chair for the Canada Chapter of the System Safety Society since 2009.