

# Risk management and prevention strategies

*Superintendent Chris Lewis of NSW Fire Brigades discusses risk management, decision-making and the PPRR Model.*

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## Abstract

Over the past few years, the NSW Fire Brigades (NSWFB) has embraced risk management as a method of understanding the risks impacting on the organisation and the community. This article discusses the use of risk management to enhance the decision making process and will compare this with how other agencies use risk management, specifically to design and implement prevention policy. This article will also examine and discuss the prevention, preparedness, response, recovery (PPRR) model that has been in common use for many years and will then compare this with the risk management model to see if it replaces or enhances the PPRR approach.

- Greater need to protect the organisation from risk exposures, both internal and external;
- International best practice;
- National and interstate best practice (as promoted by Australian Standards, Australian National Audit Office, Productivity Commission);
- Legislative requirements for reporting (annual reports, risk management plans, results services plans, finance and OHS), and
- State Government direction (Premiers Dept, NSW Treasury, Council on the Cost and Quality of Government).

The NSWFB has recognised the growing importance of risk management, and has stated its commitment in the NSWFB Corporate Plan 2005-2008. The corporate vision as stated in the plan is "Excellence in Emergency Risk Management". This is appropriate as we, as an emergency organisation, deal with risk everyday. Some of that risk is obvious and immediate such as firefighting and some risk is not so obvious but still crucial to the business continuity and good governance of the organisation. Effective risk management is therefore vital to the continued provision of high level services delivery to the community of NSW.

## Introduction

Risk management is defined in AS/NZS 4360:2004 as "the culture, processes and structures that are directed towards the effective management of potential opportunities and adverse effects". The Standard points out that managing risk is about innovation and the pursuit of opportunities as well as minimising the effects of potential hazards. The Standard goes on to say that "it (risk management) is an iterative process consisting of steps that when taken in sequence, enable continuous improvement in decision making and facilitates continuous improvement in performance".

This linkage with the decision making process has also been noted by Pat Barrett (2000) the former Auditor General of Australia "transparency is achieved by ensuring that both the decision making process and importantly, the reasons for decisions made, are adequately documented and communicated to stakeholders". An important factor to this transparency and communication in the risk approach is the requirement for a heavy emphasis on understanding in detail, what is happening and why (McLucas 2003:185).

There are a number of other important drivers for fire services such as the NSWFB to establish an effective and consistent risk management framework:

## Background

In the past, fire services generally have had an understandable cultural focus on consequence management (ie response). It has been argued that this operational imperative to deal with emergency incidents after they have occurred has adversely impacted upon the management culture of fire services particularly in the area of planning and strategic decision making (ODPM, 2003). This is not just an issue for fire services, Klein (1998) conducted research for the U.S Army and found that decision making processes developed for decisions made under tight time constraints and with limited information were frequently also being used by decision makers when faced with complex dynamic problems. McLucas (2003:19) points out that decision making heuristics or shortcuts that are developed at the operational level, are frequently used by managers and leaders at the strategic level despite being unsuitable for



*Resources needed in response can often be considerable.*

complex decisions. These decision making heuristics are even less suitable for the development of prevention strategies which, by their nature, are required to be evidence based, measurable, justifiable and rational (Scales, 1999).

## Discussion

In their “Integrated Risk Management Framework” the Treasury Board of Canada (2001) highlighted that risk management strengthens decision making in the public interest, emphasises consultation and communication and supports a whole of Government approach grounded in rational priority setting and the principles of responsible spending. “The faster pace and need for innovation, combined with significant risk based events has focused attention on risk management as essential in decision making and accountability”. This comment is directly applicable to the changing fire environments that fire services deal with. Increasingly, Fire Services are facing unique or different incident types that require a different approach than that provided by scenario planning. Accountable decision making based on logic and the best current available information is far more flexible than using a standard operating guideline written many years before for a generic range of incidents.

This increasing requirement to justify the decision making process is also discussed by Smith (1996) in his paper analysing the use of risk management in fire services. In particular, he discusses that governments at all levels have actively raised management accountability, reduced spending, and shifted their focus to the measurement of outcomes in service delivery. He goes on to point out that emergency services will “need to apply more systematic and integrated approaches to the prevention of incidents”. Furthermore that the concept of risk management provides a foundation for this cultural shift and a means of integrating services.

If risk management is to be the new cure for all that ails fire services then what existing model is it replacing? Indeed, has there ever been a model for carrying out prevention in particular? While not a specific prevention model, the prevention, preparedness, response, recovery (PPRR) model has been in common use for many decades in Australia. The PPRR model originated in the USA in the 1970’s and has been used by Emergency Management Australia and Australian fire services to assist in the design of policy and to categorise a menu of emergency management strategies and activities usually with a heavy emphasis on response.

Cronstedt (2002) questioned the continued use of the prevention, preparedness, response and recovery (PPRR) model, otherwise known as the comprehensive model approach to managing emergencies. Cronstedt argues that “PPRR sets up artificial barriers between the four elements and therefore implies a clear delineation between the four elements”. This is important to note as the PPRR model frequently does reflect the physical make up and the decision making processes of many Fire Services. However it would be better described as the ppRr model in that the response quadrant is seen as the main core role of fire services and thus is always going to get the majority of resources.

To a degree, this is understandable because anything other than rapid and effective response is simply not acceptable to the community. Plus, the nature of fire and many emergency incidents means that quick intervention does actually reduce the consequences of the emergency event and this necessitates using the majority of resources to provide staff, fire appliances, training and fire stations to carry out this role. Perhaps a more useful comparison between the PPRR model and a risk management approach is to align the prevention/preparedness half with likelihood management and the response/recovery half with consequence management.

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To this extent a risk management philosophy can sit over a more tactical PPRR model to provide direction and policy while still using a PPRR model to organize resources and processes.

The other fault highlighted by Crondstedt regarding the “PPRR” approach is that it is focused on activities of the fire services and not on the impact on the community of either fire service activities or the impact of the incident. Risk management, on the other hand does allow for a focus on the interaction between the community and the hazard within a particular context. This allows the focus to move beyond the actual incident and include other factors such as community capability and resilience and the opportunity provided by an incident to influence that capability and resilience of the community in the future. Normally these factors do not lend themselves easily to the PPRR framework.

Perhaps the point of the PPRR framework is that it formalised an existing system that was predominantly focused on responding to emergency incidents after the incident has occurred. Under this model token efforts are made to carry out some prevention, preparation and recovery work however the main focus for the actual service delivery was still on responding to emergency incidents. Whereas risk management is focused on doing something about the actual risks, preferably before the event occurs and reducing the consequences should the event occur. This necessitates making decisions and taking action before the event. Such a proactive approach requires a greater understanding of the risks and their impact on the community. This, in turn, requires a greater gathering of information and intelligence and then the use of that information to analyse and predict

where the risks will occur, what the consequences will be and how to reduce and remove those risks. This in turn highlights one of the greatest strengths of risk management in that information gathered to identify the risks initially can then be used to prove the success or otherwise of the risk mitigation strategy.

An excellent example of a risk management approach to prevention is the NSW Health policy document “Management Policy to Reduce Fall Injury Among Older Australians” (2003). The document highlights that fall related injuries consumes \$324 million in health costs each year in NSW and that when demographic changes are taken into consideration it is forecast that these costs will escalate to \$644 million by 2050. This will mean that if this trend is not addressed then the state will require four additional 200 bed hospitals plus and additional 1,200 new nursing home places just to deal with falls injuries alone. While acknowledging that more staff, training and hospitals will still be necessary for treatment, the policy does emphasis the need for prevention. “A strategic plan is required to ensure that the increase in demand for treatment does not reduce resources for prevention. Failure to allocate resources to prevention will lead to resource demands for treatment that will be difficult to meet”. The policy goes on to point out that a 1% reduction in fall injuries would save more than \$6 million a year and that it is estimated that for each dollar spent on prevention shows a return of \$7. This risk approach focuses on the hazard and its impact on the community, rather than just its consequential impact on the health infrastructure. NSW Health realise that simply building more hospitals does not stop the impact of falls on the community and eventually becomes impossible to resource.



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While fire services do carry out a great deal of prevention work they would be hard pressed to state with any confidence how much of a saving that work has generated for the community. While fire services have started to go down this path ( Rhodes and Odgers, 2003), this is the gap that an evidence base risk approach needs to address.

This risk approach is also used by the Roads and Traffic Authority. The RTA Annual Report (2003) points out that while their black spot reduction campaign, which focuses on road building, returns an estimated \$2 reduction in costs to the community for each dollar spent, their educational prevention programs deliver an estimated \$3 saving for each dollar spent. The report goes on to point out that a combination of education, engineering and enforcement has resulted in the lowest financial year road toll ( 531 fatalities) since 1947.

Just as safer roads contribute to reduced road deaths, a safer built environment should obviously lead to reduced fire deaths. Many fire services have been heavily involved for decades in working to ensure building codes and regulations do lead to safer buildings for the community and for the firefighters that have to fight fires in those buildings. It can be argued that the low rate of fatalities in public buildings is due to safer building codes and the involvement of fire services. While this is a risk approach in that it seeks to reduce firstly the likelihood of a fire and then the consequence of any fire, it fails to measure the success or otherwise of this approach. This in turn makes it difficult to argue for further resourcing of the fire safety approach. Unlike the RTA, fire services at this stage are unable to state that \$1 spent on fire prevention work will lead to an identified saving for the community.

The Office of the Deputy Prime Minister ( 2003) in discussing changes to UK fire services pointed out that “the starting point in integrated risk management planning must be the preventative measures that will reduce the incidences of fires and other emergency incidents” .This paper goes on to discuss that this will require a move from the traditional reliance on the “formulaic approach” using recommended standards set centrally, to locally assessed and determined strategies that will more effectively meet the needs of local communities.

## Conclusion

That last statement from the Office of the Deputy Prime Minister sums up the strength of risk management. It is necessary to properly assess risks taking into consideration local community needs and the possible impact of those risks on the community, then have those risks mitigated by evidence based fire safety programs that can be measured for success or otherwise and adjusted accordingly. Finally having the risks that cannot be fully removed or mitigated dealt with by effective and efficient response and then using the lessons learnt by that response fed back into recovery and prevention strategies.

A risk management approach, unlike the PPRR approach, focuses attention on the actual risk and its impact on the community rather than the availability of existing fire services resources and existing emergency management strategies. This leads to a greater understanding of the risk and a greater focus on evaluating a range of strategies to reduce or remove that risk. While this does necessitate a greater reliance on information gathering and monitoring, it also allows the success or failure of

any mitigation strategy to be evaluated and communicated to all stakeholders. As Adams (2003:30) points out “knowledge is the modern currency of public policy”.

Many fire services, like NSW Fire Brigades, are starting to benefit from some new ways of thinking about how we go about our business. Risk management, systems thinking and improved intelligence gathering methodologies have given emergency services some improved tools to better understand the communities we serve, understand their problems and issues and then to apply efficient and effective mitigation strategies. Hit and miss fire prevention strategies are no longer sufficient, nor is the imposition of strategies “borrowed” from interstate or overseas that have no relevance to local community conditions. Evidence based fire prevention strategies based on real needs have indicators that can be measured initially to justify dollar cost and then to monitor their ongoing relevance and effectiveness. Importantly, these indicators can then be used to sell the success of such programs and to justify further resource usage. This philosophical shift increases the need for accurate, timely and realistic fire data and fire research. It also increases the need for efficient systems to formulate and implement policies and guidelines based on that information.

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