Lessons Management

Australian Institute for
Disaster Resilience

Lessons Management

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Australian Disaster Resilience Handbook Collection

The Australian Disaster Resilience Handbook Collection provides guidance on national principles and practices for disaster resilience.

The Handbook Collection:

- provides an authoritative, trusted and freely available source of knowledge about disaster resilience principles in Australia
- aligns national disaster resilience strategy and policy with practice, by guiding and supporting jurisdictions, agencies and other organisations and individuals in their implementation and adoption
- highlights and promotes the adoption of good practice in building disaster resilience in Australia

- builds interoperability between jurisdictions, agencies, the private sector, local businesses and community groups by promoting use of a common language and coordinated, nationally agreed principles.

The Handbook Collection is developed and reviewed by national consultative committees representing a range of state and territory agencies, governments, organisations and individuals involved in disaster resilience. The collection is sponsored by the Australian Government Department of Home Affairs.

Access to the Handbook Collection and further details are available on the Australian Disaster Resilience Knowledge Hub: **www.knowledge.aidr.org.au/handbooks**

Australian Emergency Management Arrangements

Communicating with People with a Disability: National Guidelines for Emergency Managers

Communities Responding to Disasters: Planning for Spontaneous Volunteers

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National Emergency Risk Assessment Guidelines

National Strategy for Disaster Resilience: Community Engagement Framework

Public Information and Warnings

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Tsunami Emergency Planning in Australia

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Executive summary

The complexity of disaster risk reduction and emergency management is characterised by multiple players working at different levels across multiple jurisdictional and state boundaries. To enable organisations, jurisdictions and the emergency management sector to talk to each other and understand their role in emergencies, a consistent approach to emergency management is recommended.

'In Australia, we are all too familiar with the devastation and disruption that natural hazards such as bushfires, cyclones and flooding can cause. Over the last decade we have made great progress towards being more resilient to natural hazards and in reducing disaster risk. However, with the driver of a changing climate there is growing potential for some natural hazards to occur at unimagined scales, in unprecedented combinations and in unexpected locations. Many natural hazards are becoming more frequent and intense. More people and assets are exposed and vulnerable to these hazards. The essential services we rely on – power, water, telecommunications, the internet and finance – are also exposed to these impacts.'

(National Disaster Risk Reduction Framework 2018)

An aspect of taking a consistent approach is the need for organisations to have a lessons capability that adequately resources the collection, analysis, distribution and sharing of lessons in a way that ensures action is taken to effect change.

❝ Disasters and disruptions provide an opportunity to learn. Distilling the causes and sharing experiences of what contributed to each disaster, providing evidence or unpicking what happened, all provide important opportunities to learn so that measures can be taken to reduce the chance of the same thing happening again.

— (Profiling Australia's Vulnerability 2018)

This handbook provides advice on lessons management that is adaptable to any sector or organisation. The evolution of our understanding of how to manage lessons has resulted in the consolidation of a framework model and the inclusion of a set of principles to guide the implementation of this model and the lessons management cycle. The OILL process (observations, insights, lessons identified and lessons learned) that guides lessons management is explored in detail and numerous hints and tips are included to help organisations and lessons management practitioners succeed in implementing robust and scalable processes. In addition to the 'how to' of lessons management, this handbook presents background information on knowledge management, interoperability, and legal issues related to lessons management.

This handbook is available on the Australian Disaster Resilience Knowledge Hub: **www.knowledge.aidr.org.au/resources/lessons-management-handbook**

For feedback and updates to this handbook, please contact AIDR: **enquiries@aidr.org.au**

Chapter 1: Introduction

Purpose

The purpose of this handbook is to provide a national reference, principles and guidance for the practice of managing lessons. The process of managing lessons is integral to the continuous improvement of organisational capability and individual learning.

The handbook is primarily aimed at the emergency management sector, although the principles and processes can be used by any sector or organisation. It will be relevant to all levels of an organisation, including:

- knowledge and lessons practitioners
- individuals, supervisors, managers and leaders seeking to collect, analyse and share lessons in industry, in organisations, jurisdictions or across sectors
- learning and development professionals

Context

The first edition of this handbook was developed by subject matter experts from a range of state and Commonwealth agencies and was published in 2013. An expanded working group, representative of a broad range of organisations and jurisdictions, government and non-government entities, has informed this second edition.

The handbook forms part of the Australian Disaster Resilience Handbook Collection and as such fulfils a critical role in ongoing improvement to the sector's disaster preparation, response, and recovery under the policy framework established by the National Strategy for Disaster Resilience (2011).

Scope

The handbook identifies core principles and suggests frameworks and processes to support the successful implementation of lessons management. It has a particular focus on the practical application of a lessons management process.

Chapter 1:   Introduction
An overview of concepts and key issues that can impact on lessons management.

Chapter 2:   Principles and frameworks for lessons management
The principles and suggested frameworks to direct and support implementation and management of lessons.

Chapter 3:   The lessons management process
The 'how to' of the lessons management cycle.

Chapter 4:   Other considerations
Additional information that may influence or support a lessons management process.

This revision retains many aspects of the original Lessons Management Handbook where good practice has not changed, as well as updates and additions to reflect changes in approach or a new emphasis.

This handbook does not intend to repeat explanations of concepts or processes that are covered in detail elsewhere (e.g. change management).

1.1 Overview

Lessons management is an overarching term that refers to collecting, analysing, disseminating and applying learning experiences from events, exercises, programs and reviews. These learning experiences include those that should be sustained and those that need to improve. The goal of this activity is ongoing improvement by organisations and the people who work for them. Organisational growth and continuous improvement are particularly relevant where preservation of life is the primary goal.

A consistent approach to the management of lessons is an essential component of an organisation that has a culture of learning. Lessons management can facilitate learning and improvement resulting in more efficient and effective practices, improved safety, and improved capture and mobilisation of knowledge. Organisations are seen to be learning when their structures, processes and culture are able to evolve based on learning acquired from experience.

Interoperability of lessons management processes across agencies, sectors and jurisdictions will facilitate information sharing and analysis. Interoperability does not mean organisations have to be the same, but it does mean that they can share information and understand each other. A common language and methods (such as agreed coding of data) can help aggregate information so that it is accessible and can be analysed and interpreted. This will support the horizontal and vertical exchange of information between agencies, sectors, and jurisdictions – all of which will improve and promote cross agency analysis.

Box 1.1: Interoperability

From their initial contact at an interagency workshop, the lessons managers from NSW State Emergency Service and SA Country Fire Service identified a number of synergies between their agencies. Although combat agencies for different hazards, their observations, lessons identified, suggested treatment options and communication challenges were similar. Both agencies rely on a geographically dispersed volunteer workforce which presented additional challenges including conducting debriefs in a timely manner, communicating lessons identified and implementing altered procedures or governance. The lessons managers from these two agencies shared information and experiences in relation to these challenges, which led to the interstate exchange of lessons practitioners post major events and contributed to strengthening the lessons capability in both agencies. This has resulted in greater achievements in this sphere than agencies would have achieved working in isolation.

The cycle for managing lessons used in this handbook consists of four steps:

1. collection
2. analysis
3. implementation
4. monitoring and review.

These steps are underpinned by continuous stakeholder engagement, as shown in Figure 1.

Figure 1: Lessons management cycle

1.2 Rationale

The scale, complexity, number and impact of disasters nationally and internationally highlight the need to improve the management of knowledge and lessons. The increasing exposure of communities and assets to disaster risks are trends expected to continue. The emergency management sector has multiple players at different levels, crossing multiple jurisdictional boundaries. They need to be able to share information to learn from each other. Australia's safety and security depends on our collective ability to learn from experience, manage the knowledge gained and develop learning organisations that can adapt to deal with current, emerging and unexpected threats. Organisations need a lessons capability that adequately resources the collection, analysis, distribution and sharing of lessons in a way that ensures action is taken to effect change.

The term 'lessons learned' is sometimes used to describe raw observations or opinions without any validation or analysis, and therefore is not well understood and is often misused. This results in significant perception and expectation management problems. Not all issues that emerge during and after operations and exercises are 'lessons' that can be 'learned.' These are sometimes referred to as 'wicked problems', or problems that are complex or compounded. Statements such as 'we will learn all the lessons from this flood/bushfire/terrorist attack' can create unrealistic expectations that during catastrophic events it is possible for every aspect of operations to run smoothly in chaotic and complex environments. Regardless of how the lessons come to be viewed, it is important for organisations and communities to reflect on an event to share experiences and learnings.

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Box 1.2: Wicked problems

Many of the recurring problems experienced during operations are 'wicked problems'. Wicked problems are complex issues that go beyond the capability of any one organisation to understand and resolve; there is often disagreement about the causes of the problems and the best way to tackle them.

Wicked problems require innovative, comprehensive solutions that can be modified in the light of experience and on-the-ground feedback. There are a variety of intricate factors involved, which contribute to the overall problem. However, wicked problems, such as information management during crises, are never likely to be easily solved or learned.

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For more information, visit the Australian Public Service Commission website: **www.apsc.gov.au/tackling-wicked-problems-public-policy-perspective**

There may be situations in which decisions are examined the day after an event and potentially re-examined months later by reviews. Lessons may be identified after an event and require change or reinforcement of good practice. Lessons that require change cannot be shown to be 'learned' until there is a demonstrated behavioural or organisational change. For example, the lesson could be tested in a simulated exercise or in an actual event. Management of lessons from previous events, exercises or projects should support the ability of people and organisations to take previous knowledge and apply it to managing various situations, some of which may not have been faced before.

1.3 Benefits of a lessons management process

Learning lessons leads to improved operational effectiveness, reduced operational risk and increased cost efficiency. Consistent approaches to lessons management will encourage adaptability and flexibility across sectors, and sharing of knowledge and experiences will assist with ongoing continuous improvement of people and organisations.

At the organisational level, adopting a lessons management approach builds an organisation's ability to achieve their goals, increase effectiveness and efficiency and may reduce public criticism and missed opportunities for improvements. Implemented judiciously, it can also have a positive impact on the culture of an organisation. While learning lessons often begins in one organisation, frequently organisations operate in multi-agency environments and the learnings are often highly translatable across multiple organisations.

Not all organisations actively report lessons or share potential solutions with other organisations. Some of the reasons why sharing does not occur include:

- operational pace
- resource shortages
- time constraints
- a lack of understanding of the importance of sharing information
- a concern that doing so will open them to criticism or even litigation
- an assumption that lessons only relate to the organisation internally
- an absence of processes that facilitate sharing.

Alternatively there are some circumstances where it is not appropriate to widely share, for example where:

- security concerns exist over the weaknesses identified
- the context or content of a lesson is not relevant to a wider audience (e.g. a tactical lesson may not need to be shared at the strategic level of an organisation).

In the private sector, organisations often put a dollar value on the benefit of lessons management. In the emergency management sector, the benefits of lessons management have been demonstrated by increased collaboration and knowledge sharing to improve service delivery.

> **❝It is estimated that Fortune 500 companies lose $31.5 billion each year because they don't share knowledge.**
>
> — Babcock 2004

The success of a nationally consistent lessons management approach relies on effective engagement with all stakeholders. The benefits of this engagement for the organisation include:

- better informed decision making
- increased efficiency in, and effectiveness of, service delivery
- improved risk management practices
- more efficient policy and program development processes
- increased credibility through engagement and collaboration
- increased industry and community resilience
- greater confidence in projects undertaken
- improved capacity to innovate
- improved personal performance
- increased organisational knowledge
- increased accountability
- greater opportunities to contribute directly to learning
- more open and transparent lines of communication.

1.4 What is a learning organisation?

There are multiple definitions of what constitutes a learning organisation (see the glossary in this handbook for examples). The one adopted for use in this handbook is:

> **❝An organisation skilled at creating, acquiring, interpreting, transferring and retaining knowledge, and at purposefully modifying its behaviour to reflect new knowledge and insights.**
>
> — (Garvin 2000)

1.5 Knowledge and lessons management

Knowledge management is an umbrella term for the systematic process by which knowledge needed for an organisation to succeed is created, captured, shared and leveraged (Rumizen 2001). As the volume of data an organisation needs to process increases, the requirement to manage knowledge becomes critical to support decision making, growth as a learning organisation, and the stimulation of cultural change and innovation (Quast 2012).

Knowledge is more than just data or information. There are three types of knowledge (US Centre for Army Lessons Learned 2011):

- **Tacit**. Personal knowledge that resides within an individual based on experiences, ideas, insights, values and judgements.
- **Explicit**. Personal knowledge that is conveyed easily – for example, by using documents, emails and multimedia. This knowledge is easily codified.
- **Organisational**. The combination of data, information and collective knowledge of individuals in the organisation that enables an organisation to learn from experiences, innovate, make decisions, create solutions, perform tasks or change positions.

Knowledge management has an organisational focus: at its core is the continuous improvement of the organisation. Lessons management is just one element of knowledge management and an essential component of improvement.

> Knowledge management is management with regard to knowledge. In so far as lessons are little increments of knowledge (new items which have been learned, or are on their way to being learned) then lesson management is part of knowledge management. However there is more to knowledge management than lessons alone; there is the development of knowledge networks, there are the processes put in place to ensure knowledge is retained from departing experts and transferred to their replacements, there is all of the work that goes into the development and documentation of common knowledge or good practice/doctrine. Knowledge management delivers a new way of working, where knowledge is generated and shared, continuously improved and routinely reapplied, and where knowledge is treated as a valuable common asset which drives performance. Lesson management is a core part of this new way of working, one vital workstream among the several activities that thrive within the knowledge enabled enterprise.
>
> Nick Milton, Knowledge Management Consultant, Coach and Trainer, Knoco Ltd, 2019

The management of lessons needs to be integrated into the organisation's activities and culture to promote learning, flexibility and adaptability, and continuous improvement.

The International Standard for Knowledge Management is ISO30401: 2018 and it is supported by the implementation guide AS 5037-2005: **www.iso.org/standard/68683.html**

1.6 What is the difference between a 'lesson', a 'lesson identified' and a 'lesson learned'?

A lesson is knowledge or understanding gained by experience (NATO JALLC 2011). The experience may be positive (recognising a good practice) or negative (an opportunity to improve). Successes and failures are both considered sources of lessons.

Lessons learned embodies two interrelated concepts: the identification of the lesson (lesson identified), and the learning (lesson learned), or change that results. Identifying a lesson does not automatically mean it will be learned. In some models, the terms 'lesson', 'lesson identified' and 'lesson learned' are used interchangeably. This handbook differentiates between 'lesson identified' and 'lesson learned'.

A lesson identified articulates a positive or negative experience and a clear course of action based on analysis. A lesson learned articulates how a lesson identified has been learned through a demonstrated change in behaviour. Essentially a closing of the learning loop as it relates to a specific lesson.

> The purpose of a lessons learned procedure is to learn efficiently from experience and to provide validated justifications for amending the existing way of doing things, in order to improve performance, both during the course of an event and for subsequent events. This requires lessons to be meaningful and for them to be brought to the attention of the appropriate authority, able and responsible for dealing with them. It also requires management to have a clear understanding of how to prioritise lessons and how to staff them.
>
> **www.jallc.nato.int/activities/nllprocess.asp** and **www.nllp.jallc.nato.int/Pages/default.aspx**

Lessons can be derived from any activity. They can be a product of events, exercises, training, experiments or day-to-day work. During the course of our activities, most of us will recognise ways of doing things better or more efficiently, and ways that we can pass this information on to our colleagues and successors to help them improve and avoid problems. The challenge facing any organisation is to build a culture within which everyone feels comfortable and motivated to share their knowledge in a productive way.

It is likely that any event will identify both good practice to be sustained and areas for improvement. 'Good practice' is a form of lesson identified, where the analysis has identified conditions under which the positive experience occurred or innovative practice was established and recommends procedures or measures to ensure that conditions are repeated.

Historically, some lessons lacked the essential attributes to become learned. This does not mean the lessons are not worth identifying, as research is critical in understanding the contextual environment, even if concrete and immediate action is not possible.

A high-quality lesson capable of effecting change should:

- be based on evidence
- be derived from analysis - such as the OILL process (refer to Chapter 3)
- consider root cause(s)
- clearly define the problem that is being addressed
- concisely capture the context from which it is derived
- be supported by an implementation plan
- have a clear owner that can approve change
- lead to change that can be supported by the organisation adopting the lesson
- be able to be evaluated either through exercising or operations to confirm that positive change has occurred
- be current, and considerate of the operating environment it is being implemented in, such as during organisational change.

A lessons management process may also justify sustaining the existing way of doing things, even if the outcome was not desired. It may show that the outcome was the best possible, even if one hoped for something else.

Box 1.3: Example 1 of a lesson identified and a lesson learned

Observations were collected from several incidents involving private farm fire units, used by landowners to protect their property from fire. Analysis of the observations led to insights indicating significant changes were required to improve coordination and communication between the landowners and fire brigades. As a result, a review of policies and processes was conducted which led to a number of outcomes, including:

- all new appliances and command vehicles were fitted with UHF radios to enable communication across the fire ground
- the joint guidelines were reviewed and updated
- the use of trailer units was discouraged due to safety issues
- a small equipment grant and funds for personal protective clothing were accessed for landowners wishing to improve their fire units
- an operations bulletin was released to agency members increasing awareness of the need for, and the processes specific to working with, private fire units
- training courses were reviewed to include aspects on working with private fire units
- the agency engaged with landowners at events such as field days
- a number of farming groups have nominated a liaison officer or leader to engage with incident management teams and field commanders
- state incident management teams were up-skilled on the management of private farm fire units at incidents.

Following the fire season, the agency received new observations indicating improved working relationships, which confirms that the lessons have been learned. This outcome continues to be monitored to ensure sustained improvements.

"A lesson is only learned when you can measure a change in behaviour. Obviously, this change in behaviour needs to be of a positive nature that improves performance. The United States Army, with more than 25 years of focused lessons learned experience still struggles with actually 'learning' lessons once identified. Even though there are many understandable reasons for this, you cannot give up. Other organisations complain that once you identify a lesson, it ends up in some database and you quickly forget it. The irritation of every lessons learned specialist is seeing important lessons collected, and never being shared or resolved. This takes time and effort and, in most instances, money. Often there is no obvious 'owner' of the lesson identified, and there is rarely a system set up to resolve the issue and implement corrective actions. Do not be discouraged. There are some very sound reasons why your organisation needs a lessons capability.

> — Establishing a Lessons Learned Program,
> US CALL Handbook 2011:
> **www.au.af.mil/au/awc/awcgate/army/call-11-33.pdf**

While there is a complex set of reasons that cause implementation of a lessons capability to be challenging, its effectiveness is dependent on being adequately resourced to allow organisations to undertake the distribution and sharing of lessons in a way that ensures action is taken to effect change.

Following two large bushfires, observations from community feedback and internal debriefs were analysed to develop insights. The insights identified that improvements were needed in relation to the issuing of bushfire warning messages. The existing warning procedure did not allow for flexibility in timing and content of warning messages where different situations may exist in different geographical areas of the fire. The public were confused about what action to take and the potential impact on them. As a result of this lesson being identified, the agency amended the processes for issuing warning messages, including:

- amending doctrine to establish processes for staff to follow
- providing mandatory training for staff issuing warning messages
- including an image of the fire boundary (where known) in the warning message
- enabling multiple messages for the same fire
- enabling incident updates to be issued in lieu of warning messages, thereby permitting more flexibility in messaging.

During the following fire seasons, observations from personnel indicated that the process was clearer and easier to implement and provided some flexibility to cater for differing situations, allowing the public to better understand what action/s they should take.

1.7 Who needs to learn lessons?

Organisations will not improve if the lessons managers are the only ones who have learned how to do something better. Lessons managers are not the stakeholders in learning the lessons and they may not hold positions in an organisation that carry the authority to enact the changes required for the organisation to change a lesson identified to a lesson learned.

All relevant members of an organisation need to be involved in learning lessons for lessons management to be successful. The presence of a lessons process should be seen as a tool to support organisational improvement and learning. The implementation of change requires that action is taken on the lessons identified and the usual issues of change management need to be considered.

1.8 Change management

An integral part of lessons management is change management. The change management process will be different for each organisation. An organisation's ability to demonstrate changed behaviour by implementing a lesson is limited unless that change can be observed, and it can be determined that the lesson was learned – that is, the actions taken have improved the organisation's performance. A learning culture needs to exist at all levels of the organisation for the cycle to be effective.

To change behaviour, an organisation will need to recognise:

- the enablers and barriers to behavioural change
- the requirement to observe that change
- if or when the change has been successful.

A structured approach to embedding lessons into an organisation's processes mitigates against lessons being identified, or even learned, and then lost to the organisation.

Change management is covered in extensive detail outside this handbook.

1.9 Organisational learning

True organisational learning takes place when driven by leaders who create a culture to prioritise lessons, assign and track remedial actions, follow up to ensure their organisation has actually learned the lesson, and are the driving force for sharing lessons.

Within this environment, stakeholders are often the first, and sometimes the only, personnel who will be able to identify potential lessons because they are most closely involved with the issue. Unless these potential lessons are identified through a lessons process, it is unlikely that lessons managers will be able to discover their existence to begin the learning process.

A non-judgemental 'just' culture encourages learning and maximises the potential for ongoing improvement. For more information on just culture, refer to Chapter 2.

Chapter 2: Principles and frameworks for lessons management

2.1 The principles of lessons management

The following principles are a guide for the implementation and operation of lessons management. They provide a context for the establishment and maintenance of a framework, which will in turn support the process.

1. **Learning focussed**
   Lessons management is focussed on activities that use learning opportunities to inform change and future improvement.
   – Lessons management is as an aspect of a learning organisation.
   – Learning is collaborative, open and transparent.
   – Practices support a learning culture that is accountable and just.

2. **Inclusive**
   Lessons management benefits from collaborative approaches and the involvement of relevant stakeholders during phases of the lessons cycle.
   – Governance and accountability is in place that promotes stakeholder commitment to the process.
   – Planning, implementation processes and outcomes are shared with relevant organisations and stakeholders.
   – Transparency and effective two way communication is promoted within and between organisations, within jurisdictions, across sectors and with the community.

3. **Consistent**
   Lessons management uses consistent, scalable, sustainable processes, tools and themes to support stakeholders to contribute and enable trend analysis across events, organisations and jurisdictions.
   – Internal consistency based on national good practice.
   – Trends-based lessons management uses multiple information sources to identify lessons (the OILL process).
   – Information can be aggregated and made accessible for analysis and interpretation.
   – Lessons implementation can be scaled to adapt to available resources.

2.2 Frameworks

A lessons management framework is a conceptual structure in which key components such as culture, governance, methodology, communication, engagement, capability and planning can be identified and mapped to support effective lessons management and ultimately learning.

While lessons management frameworks will have many similarities, there is no 'one size fits all'. Organisations and/or jurisdictions are encouraged to consider the needs of their operating environment when creating a lessons management framework. When underpinned by the lessons management principles, a framework will foster the development of:

- strong governance evident in leadership and commitment to the process
- consistent methodology for lessons management
- communication and engagement that meets the needs of the organisational and external stakeholders
- capability planning and development that meets current and future requirements, including technological considerations
- a learning culture that promotes positive change and continuous improvement.

The establishment of a learning culture underpins each aspect of a framework, and is therefore central to effective implementation. It is represented in Figure 2 as the linking element of each aspect of a framework.

Framework models tend to share themes reflected in Figure 2.

For examples of framework models from different states and organisations, refer to the Lessons Management Handbook companion document: *Lessons Management Models and Examples:* www.knowledge.aidr.org.au/resources/lessons-management-handbook/

2.2.1 Culture

Principle 1 'learning focussed' (from Section 2.1) requires establishment and maintenance of a culture that embraces learning and change. The effectiveness of lessons relies on the culture within an organisation to support continuous improvement and lesson sharing. The values that contribute to a learning culture potentially increase in effectiveness as workplaces move from a 'compliance culture' to a 'no-blame' or 'just' culture.

Compliance culture

The conventional workplace environment was more commonly founded on a compliance culture, based on sanctions that get the non-compliant into 'trouble'. This tended to inhibit reporting of incidents (Dekker, 2007, p.17). But reporting is needed in order to 'know what's going on'. Collecting enough information requires an environment of trust where workers feel safe enough to openly report or disclose 'honest mistakes' or unintentional slips or lapses without fear of retribution. At the same time, organisations must be able to deal with flagrant breaches that have no justification or repeated minor breaches that increase the likelihood of an accident.

Governance
Leadership
Accountability

Methodology
Collect
Analyse
Implement
Monitor and review

A learning culture

Communication and engagement
One and two way communication
Communication planning
Stakeholder engagement

Capability
Planning
Training
Technology
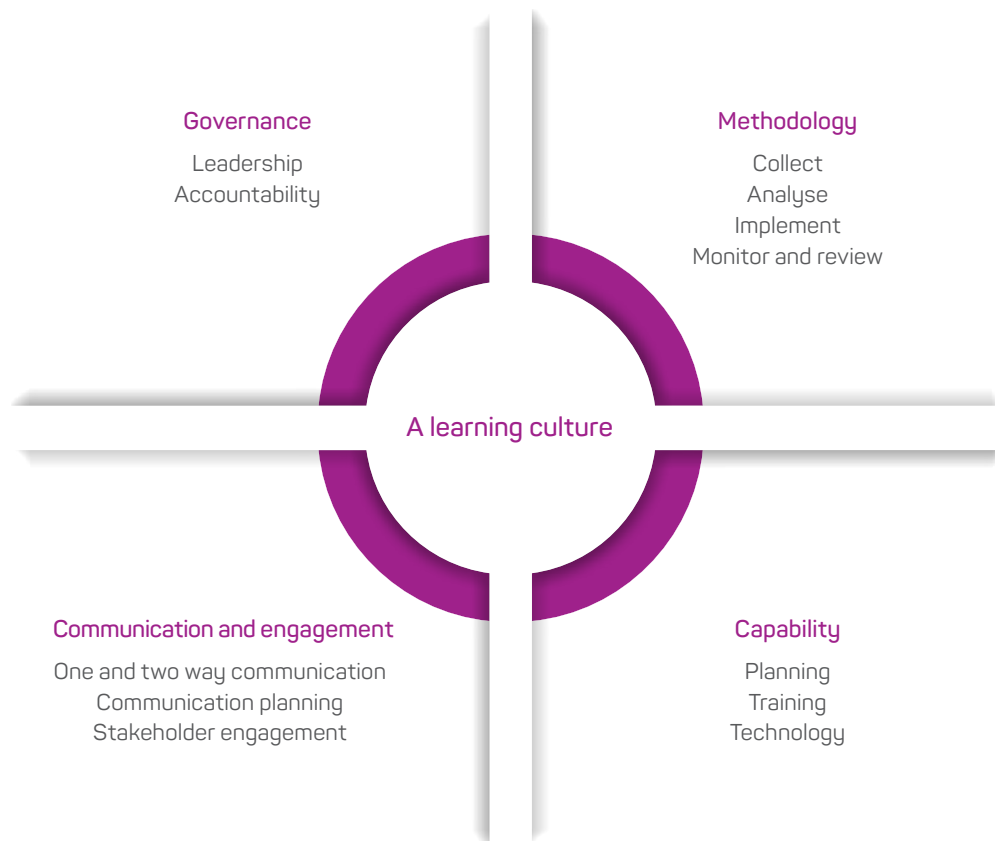
Figure 2: Example of a framework model

No-blame culture

In the 1980s there was a move away from a compliance culture with the emergence of the concept of a no-blame culture. This has become more commonly described as a just culture.

To improve incident reporting, the concept of a no-blame culture entered the aviation sector in the 1980s (De Crespigny 2018, p.99). This was based on discovery of the multi-factorial nature of many bad aircraft accidents, each factor or small mistake being 'a link in a chain of events that lead to a failure' (De Crespigny 2018, p.100). It was recognised that if any one of these small mistakes, slips, or lapses common to humans are recognised and dealt with, a catastrophic failure may be averted. The no-blame culture tried to address this by creating an environment where workers felt safe to report their own errors without retribution. But problems arose because it didn't deal with repeated small errors, or distinguish between culpable errors (e.g. errors committed while intoxicated, or actions known to be unacceptably risky) and non-culpable errors, (such as being forced to work while excessively fatigued). Just culture evolved to include these distinctions.

Just culture

Professor James Reason coined the term 'just culture' in the 1990s, and Professor of Safety Science Sidney Dekker developed the concept further in his book titled *Just Culture* (2007). A just culture is about balancing demands for accountability regarding failures with an ability to collect enough information to make sense of the situation to contribute to learning and safety improvement.

A non-judgemental just culture encourages learning and maximises the potential for ongoing improvement. If stakeholders do not feel safe to speak up without fear of ridicule or blame, or if others declaring a contrary view challenge them, they can be discouraged from sharing their experiences. The best performing teams work in an atmosphere where they are encouraged to speak up if they see anything 'dumb, dangerous or different'.

Just culture is about balance and appropriate response. This can be achieved by creating an environment of trust where the 90 per cent of small errors and near misses arising from everyday human error will be explored for safety improvement, while further action will be taken appropriately for those events that warrant it. In a just culture, personnel are not punished for actions, omissions or decisions taken by them which are commensurate with their experience and training, but gross negligence, wilful violations and destructive acts are not tolerated. Trust is crucial for a just culture to be successful. Workers should trust that management will consistently strike the right balance in response after seeking all sides of the story, and management should trust that workers will honestly report incidents and take equal responsibility for contributing to safety improvements.

There are many approaches that can assist an organisation to maintain a just culture, promote organisational learning and improve performance.

One approach to establishing a just culture is crew resource management; a particular type of training that enhances team skills and information flow. This approach supports error reporting and hence the collection of data, which becomes the raw material of the lessons management process.

Box 2.1: Crew resource management in the offshore oil industry

Rhona Flin and associates began developing crew resource management (CRM) training for the offshore oil industry in the 1990s, and 'became aware of a number of elements which appeared to be particularly critical for effective team performance in emergency command centres and which were applicable for an offshore platform. These elements included understanding of team roles, communications, group decision making/problem solving, assertiveness, team attitudes, stress management and shared mental models.' (Flin 1997, p. 125)

'CRM involves enhancing team members' understanding of human performance, in particular the social and cognitive aspects of effective teamwork and good decision making. This training is designed to reduce operational errors which could cause an accident, and to give crews additional skills to deal with problems if they are faced with an emergency.' (Flin 1997, p. 121)

For more information refer to Okray and Lubnau, 2004.

Another supportive approach to creating a just culture is restorative practice. The principles of restorative practice, originally used in criminal justice, may deliver more effective, holistic and community based learning. A facilitated learning analysis can be used in a restorative process. Refer to handbook companion document *Lessons Management Case Studies* for information on restorative practice, learning review analysis and two case studies on its application: **www.knowledge.aidr.org. au/resources/lessons-management-handbook/**

Learning culture

There are a number of indicators that can predict the growth of a learning culture (Weimer 2014). The following are characteristics of what a 'good learner' may look like within your organisation.

Good learners:

- love the discovery in learning, are curious and question things they do not understand

- are willing to put in the time and effort to gain knowledge, search out information, analyse it, discuss it and study it some more

- recognise that all learning isn't necessarily fun, and the journey to get to the end point of a complete puzzle can often be difficult, but the effort is worth it

- know that learning may be daunting at times, and continue on, they are resilient and determined to find a solution

- use their discoveries to expand on their existing knowledge, are willing to look beyond their current beliefs and avoid the tendency to search for, interpret, or recall only that information that confirms their pre-existing beliefs or hypotheses, also known as confirmation bias

- share their knowledge and know that for knowledge to be retained, it needs to be passed on, good learners rely on shared knowledge and are committed to leaving behind the same legacy.

Also aligned to Principle 1 are three key values associated with a lessons management culture. These may also form part of organisational maturity assessment – see the handbook companion document *Lessons Management Models and Examples* for a sample maturity matrix: **www.knowledge.aidr.org.au/resources/ lessons-management-handbook/**

- A learning culture involves people being actively involved in continuous improvement to ensure that the lessons management process is effectively implemented at each stage of the cycle.

- A learning organisation embraces experience as an opportunity to improve. There is an underlying expectation that people feel free to share and discuss their experiences, both positive and negative, with others. The tendency to blame individuals after a major event breeds a culture that is resistant to creativity,

innovative thinking and adaptability, and reduces the capacity of leaders, managers and practitioners to take informed risks when required. A learning culture is supported and sustained by a just culture.

- Transparency is an aspect of a learning culture. Transparent communication should occur throughout the whole process and can assist with managing expectations. By specifying exactly what people should expect to occur throughout the lessons management cycle, particularly with regards to their contribution, people will not be left wondering or having unreasonable expectations. A focus on transparent processes that demonstrate consistency and fairness will support acceptance and increase the value people place on a just culture and the procedures that support it.

2.2.2 Governance

Effective governance provides structure and leadership that will facilitate the management of lessons and ensure accountability and a just/learning culture. Governance includes:

- strategic alignment with relevant legislation, plans and priorities
- structures and reporting requirements that are agreed
- clear roles and responsibilities established and communicated
- leadership positions that support, promote and reinforce lessons management activities including the allocation of resources.

Jurisdictional governance requires objective oversight by an impartial group.

Two aspects of effective governance that support lessons management are leadership and accountability. Rather than being discreet areas, they have many overlaps. In particular, strong leadership is a key to ensuring the development of an effective learning culture and organisational accountability.

Leadership

Leadership needs to promote, enforce and prioritise lessons management throughout the agency. It will require accountability and ownership, but most importantly, behaviours modelled, discussed and promoted at senior management level.

Leadership values modelled by senior management should translate to collaborative organisational structures that support equity, fairness and inclusivity. Potentially sensitive situations in managing lessons heighten the need for leaders to foster a collaborative work environment. Such an environment allows individuals to feel comfortable enough to take risks, to share their knowledge and to speak their truth, all critical elements in the effective implementation of a lessons management cycle.

> **"The way leadership responds to a bad outcome is enormously important. It will vector us either towards, or away from, a learning culture.**
>
> — Harv Forsgren (2013)
> Former Regional Forester,
> Intermountain Region, US.

Professor Amy Edmondson of Harvard Business School spent years studying the performance of teams and what characterised the best performers. She discovered that psychological safety, where people feel they can contribute ideas, information, ask questions or express doubts without fear of intimidation, ridicule, silence or suppression was an underpinning condition for teams to learn and to perform at their collective best. From 20 years of research she found that 'psychological safety matters very much for predicting both learning behaviour and objective measures of performance'.

(Edmondson 2019, p. 11)

Following an initial run of fires on the night of 17/18 March 2018 and subsequent peat fires in the South West of Victoria, the Emergency Management Commissioner approved the *2018 South West Fires Community and Multi-Agency Debriefing Plan* to support capturing learnings from operational personnel and community members.

This is the first time a coordinated and comprehensive approach, supported by a dedicated multi-agency and multi-jurisdictional team, has been utilised to debrief a significant and complex emergency encompassing the community and operational personnel. It required strong leadership at the most senior levels.

Extensive resourcing across Victorian and interstate agencies supported the debriefing program, including 21 personnel across eight agencies within the debriefing team and 20 personnel across 11 agencies represented on the Debriefing Coordination Group.

The debriefing team undertook six operational debriefs and ten community debriefs capturing 2500 observations, highlighting 190 insights and identifying 31 lessons which have been included in a final report and on EM-Share (Victoria's lessons management IT system) for transparency and sharing of learnings across the state.

The debrief program applied lessons management principles including the identification of lessons captured through assurance activities (including debriefing, monitoring and reviews) occurring before, during and after emergencies. This process of moving from identifying to learning lessons is guided by the lessons management life cycle within the *EM-LEARN Framework*, which aims to provide a shared understanding of what lessons management means for the Victorian Emergency Management sector.

The outcome demonstrated the lasting impact of senior leadership decisions, including the ongoing commitment to the process and the provision of resources required to create sustainable change.

For tips on creating a collaborative organisational culture, refer to the handbook companion document *Lessons Management Models and Examples*, which highlights 12 habits of highly collaborative organisations: **www.knowledge.aidr.org.au/resources/lessons-management-handbook**

Accountability

There are different types of accountability depending on context: accountability for completing actions, (assigning and implementing); accountability for learning from experience (good and bad); and accountability for wilful or illegal actions. A government is accountable for policy and laws affecting its citizens. Individuals are accountable for knowing their roles and being responsible for their actions. Organisations are accountable for learning from experience and to taking appropriate action where there are knowingly repeated errors or malicious intent. Leaders are accountable for cultivating a culture that supports learning, continual improvement and the development of their subordinates.

The roles and responsibilities of all members of the organisation involved have to be identified and communicated. Accountability includes the allocation of actions to individuals and/or teams and for these actions to have enough influence that they are given priority for completion.

2.2.3 Methodology

The lessons management cycle of collection, analysis, implementation and monitoring and review is covered in detail in Chapter 3.

2.2.4 Communication and engagement

One- and two-way communication

Ongoing communication at every level, within an organisation, between organisations, across the sector and with the broader community, is an important aspect of a successful lessons management process. Communication is important throughout the lessons management cycle and organisations need to be clear about the type of communication and when to apply each method. Examples of the critical roles that communications play in lessons management include:

- ensuring role clarity
- managing expectations
- promoting morale
- sharing lessons
- implementing the framework for a lessons management process
- collecting, interpreting and resolving lessons information
- improving risk management
- enhancing resilience
- increasing effectiveness of processes and operations
- stakeholder support for changes resulting from lessons including broader community support
- potentially each method of communication can be two way, which will optimise the buy-in of all stakeholders.

Box 2.3: The Japanese earthquake and tsunami nuclear crisis

Naohiro Masuda was the plant superintendent of Fukushima Daini, the sister nuclear power plant to Daiichi which suffered a crippling explosion in the catastrophic earthquake and tsunami of March 2011. Daini was also severely damaged, but in contrast to Daiichi, Masuda managed to safely shut down all four of the plants reactors, averting an explosion and the release of nuclear material into the air and sea. This required first, motivating the terrified staff to acquire enough information about the state of the plant to know what to do. Instead of issuing orders, Masuda continually provided data on the timing and diminishing strength of the aftershocks on a whiteboard for all to see, allowing them to make their own decisions about whether they wanted to assist. Armed with this data and detailed information about where to go and what to do (Masuda had acquired detailed knowledge of the plant from when he started there on its construction), the staff mustered enough confidence to venture out to inspect the four reactors, three of which had inoperative cooling systems risking overheating and explosion.

From their reports, Masuda and his team drew up plans to get emergency power to the reactor cooling systems from the only power available in a building behind reactor one by laying nine kilometres of heavy cable, a job usually requiring a month. Racing against time, armed with information about the pressures building in the overheating reactors and learning on the job as they worked, they twice had to modify plans in order to cool the reactor that was closest to critical first. Masuda steadfastly adhered to the key principles that build psychological safety, the underpinning skill of supporting a learning culture and maximising team performance:

Honesty (all information was communicated, including bad news).

Vulnerability (Masuda the leader was open about his own mistakes).

Communication (was detailed, confirmed, and continual).

Information sharing (a key tool was a whiteboard displaying continually updated data).

Working without sleep for 48 hours, cooling was restored to reactor one with two hours to spare, and to the remaining reactors in time to avoid meltdowns in those. 'Through his calmness, openness and willingness to admit his own fallibility as a leader, Masuda created the conditions for the team to make sense of their surroundings, overcome fear, and solve problems on the fly.'

(Edmondson 2019, p. 146)

Developing a communication plan

A communication plan identifies the types of information to be delivered, who will receive it, the format for communicating it and the timing of its distribution. Communication plans can address one-way communication, focussed on keeping people in the loop and sharing lessons. A communication plan can also cater for avenues of two-way communication and be a valuable source of feedback from all stakeholders.

The steps for establishing a communication plan include identification of the following:

- **Stakeholders and their requirements (stakeholder mapping)**
  The starting point for a communication plan is to identify your stakeholders and analyse their requirements. It is important that the information needs of the stakeholders be determined early in the planning phase of lessons management so that as the process grows in size and complexity the communication strategy can be adjusted to meet their needs. Consideration should also be given to external and community stakeholders, as they could be important to the process.

- **Types of communication**
  Identify the type(s) of communication necessary to satisfy stakeholder expectations, to keep them informed, and ensure timely and directed two-way communication.

- **What to communicate**
  The types of information communicated will vary between organisations, but typically include status, scope, updates, risks, action items, timeframes, monitoring and resolution.

- **When to communicate**
  Identify time frame and frequency for the communication message.

- **How to communicate**
  Which methods of communication are selected will depend on factors such as timing, the level of interaction and feedback expected, the requirement for updates, and the technology necessary. The form of communication should be appropriate to the target audience.

- **Human resources required**
  Who will communicate the messages and provide two-way interaction

- **Document items**
  Templates, formats, or documents to use for communicating.

The responses to each of these questions are documented in the communication plan.

Stakeholder engagement

The following principles guide stakeholder engagement:

1. clear, accurate and timely communication
2. accessible and inclusive
3. transparent
4. measurable.

(QLD GEM 2014)

The collection phase of the lessons management cycle is a critical time to engage stakeholders in two-way communication to capture feedback about the event. However, two-way communication can occur at any point in the lessons cycle. External stakeholders will have different levels of involvement. At various stages they can be informed, consulted or collaborated with, or be active participants.

Stakeholder and community engagement has been documented in extensive detail outside this handbook

(refer to references for additional reading material).

2.2.5 Capability and planning

Central to the success of lessons management is capability; the knowledge, skills and abilities required to support continuous improvement within an organisation or jurisdiction. While organisational lessons management capabilities may vary broadly they consist of building and sustaining people, processes and tools.

As stated in Principle 3, lessons management is scalable. Organisations at the beginning of the process are encouraged to make a start, however small, as the benefits are quickly realised.

Training

Training of current and new personnel should be given a level of priority that ensures that knowledge and skills required to maintain a lessons management capability do not get diluted or lost over time. Quality and timely training and education will build the confidence of practitioners and enhance the profile of lessons management. Training should be focussed on clear expectations, roles and responsibilities, and include tools, techniques and concepts. Training needs include:

- how to create a culture of learning
- planning and conducting debriefs
- real-time lessons
- communication and engagement
- the lessons analysis and management processes.

Technology to manage lessons

Information technology (IT) is often relied upon to resolve issues rather than supporting the implementation of change processes, resulting in barriers and further problems. Technology is an enabling function of lessons management and can support collection and analysis of data. Technology should be considered as the last component of a well-defined lessons management process.

To be effective, IT systems should have:

- data entry based on templated information that typically describes the event, the root causes and the observation
- notification processes that alert, monitor and update those taking action and informs the organisation as to the progress of the lessons management cycle
- a user friendly interface and powerful search function
- the ability to track the systems use and generate data on the progress of lessons
- the ability to be web-based for greater access
- compatibility with a range of technology platforms to maximise the chance of interoperability across jurisdictions or sectors.

As organisations continue to build capability and data, there is value in being able to share with like-minded organisations across sectors and nationally to identify and learn lessons. Agreeing on standard coding approaches assists the sharing of a level of data analysis.

Table 1: Communication purpose, methods and examples

Purpose of communication	Method of communication								Examples
	One-way communication				Two- way communication				
Seeking contribution of observations from those involved in an event	X		X	X				X	
High risk/urgent lessons	X		X			X	X		The South Australian Country Fire Service lesson on a page/five minute lesson
Provide an initial summary/quick look reports on trends or emerging issues	X	X	X			X	X	X	www.aspi.org.au/report/ct-quick-look-manchester-arena-bombing-22-may-2017
Share insights/ observations with subject matter experts for validation			X	X	X				
Share insights and/or lessons identified	X	X		X	X	X		X	X	Lessons newsletters: **www.army.gov.au/our-work/publications/smart-soldier**
Update stakeholders on progress of lessons	X	X	X	X	X	X	X		Operations Bulletin 74 Managing Traffic Country Fire Service
Identify/share/update on recurring issues and progress on lessons priorities/themes		X	X	X	X				Victorian Emergency Management Operational Review: **www.emv.vic.gov.au/publications/emergency-management-operational-review-2016-17** WA Annual Review: **www.emc.wa.gov.au/Documents/Publications/PreparednessReports/2018SEMCPreparednessReport.pdf**
Share approaches and good ideas on managing lessons	X		X	X		X	X	X	X	Emergency Managment Victoria infographics and posters to share learning Lessons newsletters: **www.army.gov.au/our-work/publications/smart-soldier**
Develop skills and knowledge of lessons management					X		X	X	www.emergency.nsw.gov.au/pages/emergency-management/lessons-management/lessons-management-elearning.aspx
Promote the value of lessons	X			X	X		X	X		www.wildfirelessons.net/resources/twomorechains
Sharing lessons learned	X	X	X		X	X		X	www.wildfirelessons.net/resources/twomorechains

For examples of communication products, their purpose and links to examples refer to handbook companion document *Lessons Management Models and Examples*: **www.knowledge.aidr.org.au/resources/lessons-management-handbook**

Box 2.4: An information technology sharing platform

The Observation Sharing Centre (OSC) was a survey platform established by the CFA as an outcome of the Jones Inquiry (2011) into the arrangements made by the CFA for its volunteers. The inquiry highlighted the need for volunteers to be able to contribute experiences and innovative practices to the continuous improvement of the sector. As the use of the OSC increased in momentum, the submission of debrief reports from agencies and regions across the state were able to be used to inform the annual *Post Fire Danger Period Report* (now the *Emergency Management Operational Review*).

The OSC was a great start to sharing learnings but it was highlighted that an online platform to support lessons management required:

- greater transparency
- further configurability and analytical ability
- clear governance
- increased security, reliability and access
- a capacity to track change and improvement
- all lessons management resources and data to be in one location.

In October 2017, after two years of extensive work by the State Review Team (Victoria's multi-agency lessons management committee), a bespoke lessons management IT system, EM-Share, was released. EM-Share complements the Victorian emergency management sector lessons management life cycle and enables community, business, industry and emergency management agency personnel to share observations and files from operational and non-operational activities, view insights and lessons, track how user contributions facilitate the continuous improvement of the sector and collaborate with others about learning.

Source: Forbes Shepherd and Jackson 2018; and **www.share.em.vic.gov.au**

Chapter 3: The lessons management process

This chapter covers the four steps in a lessons management cycle that were introduced in Chapter 1 (See Figure 1 for how these steps work together).

1. Collection
2. Analysis
3. Implementation
4. Monitoring and review

These four steps in the lessons management cycle are set in a broader context below. Figure 3 outlines the four steps and the elements within each step.
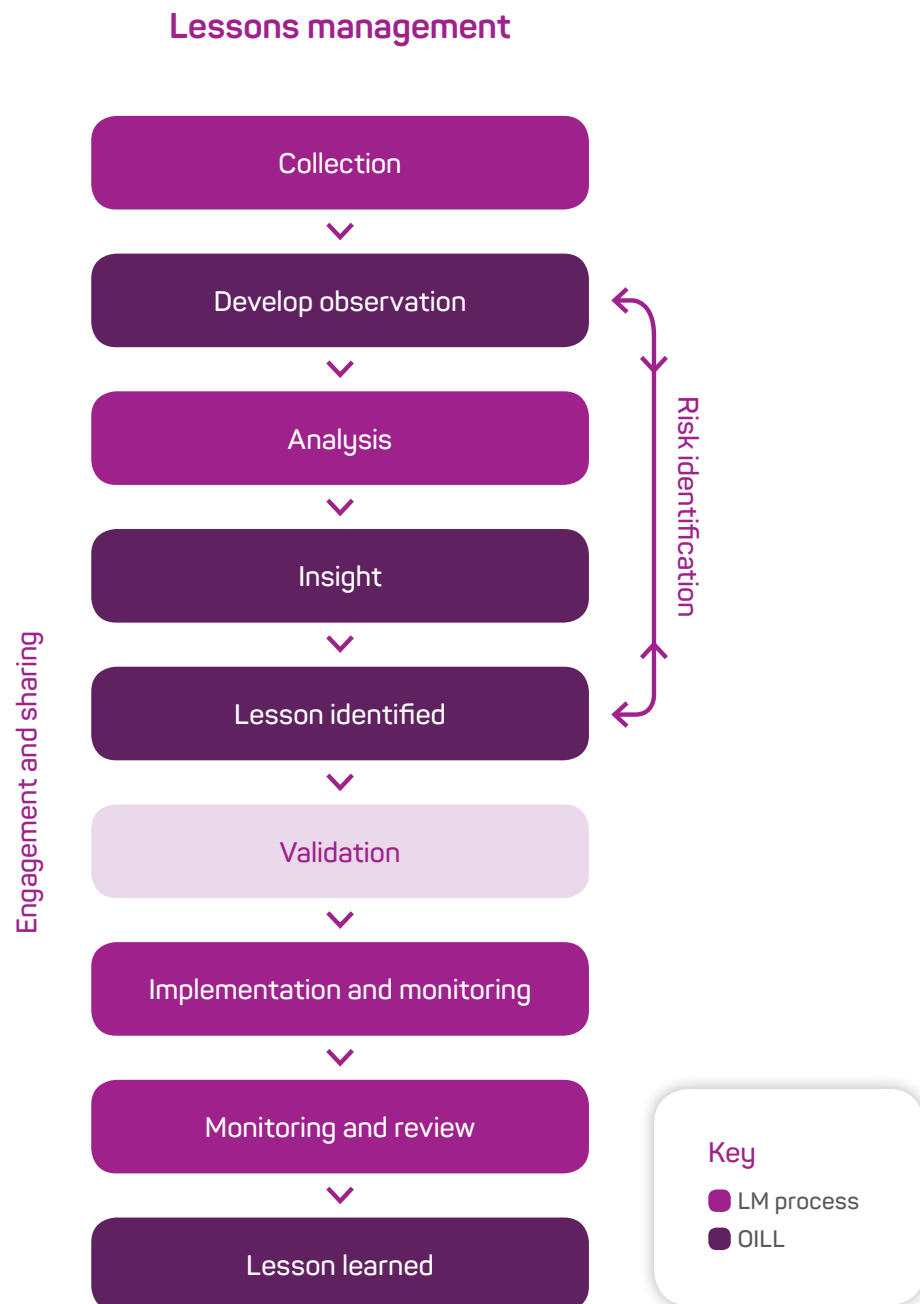
Lessons management

Figure 3: Elements of a lessons management process

3.1 Collection

The first step in the lessons management cycle is the collection of observations. In this step, information is gathered to inform step 2, 'analysis'.

3.1.1 Collection opportunities

Potential opportunities to collect observations include:

- activities, such as observing an actual event, an exercise, community meeting or training activity
- interviews of key personnel
- submissions by an individual or a group
- reports, articles, documents and reviews
- debriefs, after action reviews (AARs), post-event reviews.

These collection opportunities can be classified as either active (where the lessons manager interacts with the participants to gather observations) or passive (where observations are collected from documentation or other media).

Collection can be either targeted or general. A targeted approach focuses on collecting data on specific themes, questions or elements. A general approach allows for opportunistic collection of observations to discover themes that may not otherwise have been identified. Both approaches have advantages and disadvantages. An advantage of a targeted approach is that a collection plan can be prepared prior to or in anticipation of an event to focus the scope of the collection. A disadvantage is that important observations from areas outside your focus may be missed. The general approach can be broad but it is not possible to focus on everything.

Information can be pulled into the process through direct collection efforts or it can be pushed into the process by organisations, units and individual submissions.

3.1.2 Collection planning

For maximum benefit it is important to plan the data collection. This is ideally done prior to an event and includes relevant stakeholders. Some activities are unpredictable, so the lessons management process must be flexible enough to capture the unexpected. Organisational culture can be prepared before these unpredictable events through managing expectations so that observation and collection can occur, and observations can be collected in both real time and post event.

For any collection activity, a collection plan should be developed to guide the collection of observations. This could be as simple as a list of topics or questions you are interested in exploring. Alternatively, a plan could provide much more detail. For large operations, the collection plan may need to include administrative detail for the overall task.

Topics that need to be considered in a collection plan include:

- focus areas/information needs/collection priorities
- scope
- resources, particularly staff
- stakeholder mapping,
- target audience who, what, why and when (for both participants and data collection team)
- organisational priorities
- governance
- outcome management
- legal ramifications
- management of sensitive issues (e.g. Critical Incident Stress)
- security of information
- qualitative and quantitative data
- authority to collect
- timeline
- appropriate methods for the situation
- budget.

As a minimum, a good collection plan will state:

- what you want to know
- who you are going to ask
- why you want the information
- what you intend to do with the information
- how you will collect the information.

Managing expectations throughout the lesson cycle is important to ensure that people are willing to share information openly.

Remember, the collection plan is only a starting point and can be amended as information is gathered. The plan needs to be flexible.

3.1.3 Tools and techniques

There are multiple ways of collecting observations; some of the more widely used methods include:

- trained collectors observing an activity
- interviews (refer to handbook companion document *Lessons Management Models and Examples* for examples of lessons interviews: **www.knowledge.aidr. org.au/resources/lessons-management-handbook/**)
- debriefs
- surveys or questionnaires
- facilitated discussions
- real time lessons (for more information on real time evaluation and monitoring refer to the handbook companion document *Lessons Management Models and*

Examples: **www.knowledge.aidr.org.au/resources/lessons-management-handbook/**)

- audio/visual recordings
- reviewing logs and documentation
- media reviews (social, print, electronic)
- accidents and near-miss reports
- individuals self-reporting
- other reviews/reports.

Note that some of these tools require a level of expertise and should only be applied with adequate training or expert assistance. For example, the complexity in creating and implementing valid surveys or questionnaires requires particular expertise.

3.1.4 Lessons interviews

Lessons interviews are used extensively by the Australian Army to collect observations. Targeted interviewing of key personnel, particularly senior personnel, allows for detailed exploration of what happened, why it happened and what their thinking was at the time. Like all observations, an interviewee provides one perception and one opinion, but when it is the senior officers perception on which they based key decisions it can be a very valuable observation. Interviews allow one-on-one discussion without any risk of groupthink which can sometimes happen in debriefs. They also allow for learnings to be explored in depth to get to root cause(s) and/or the thinking and considerations that led to the context being sustained or improved. In a just culture, interviews allow personnel to identify aspects about themselves or their behaviour with less fear of embarrassment and details about others with less concern about reprisal. Lessons interviews should always be consistent with constructive, professional lessons approaches and be about learning, not blame. Lessons interviews must be differentiated from any other sort of interview (e.g. counselling, discipline, investigation or critical stress). Where there is any chance that an event may have been a critical incident for an interviewee there is a possibility that the interview and/or the one on one environment might trigger a response, so lessons managers need to be prepared for that eventuality.

Interviews have been an underutilised method of collecting observations in the civilian environment, but their use is growing as they can be a very valuable method of collecting good detailed observations. An extract from the Australian Army's approach to lessons interviews is presented in the handbook companion document *Lessons Management Models and Examples:* **www.knowledge.aidr.org.au/resources/lessons-management-handbook/**

While the extract outlines a military approach, it is provided as it contains a good level of detail on how the army does lessons interviews. This is just one approach and considerable further detail is available elsewhere on interview techniques and approaches.

3.1.5 Debriefing

A key step in the lessons management cycle is collecting stories and experiences from people involved in the event. This collection is not limited to post-activity and can occur before or during an event. The timing and method for data collection needs to be considered when planning for the activity.

There is a wide range of terms used in Australia and internationally to describe these collection activities. Terms in common use include:

- interviews
- debriefs
- facilitated learning analysis/learning reviews
  - for more information on facilitated learning analysis, refer to the *facilitated learning analysis implementation guide* in the references
  - for more information on learning reviews, refer to the *learning review guide* in the references
- post-event analysis
- post-operation review
- after action reviews (AARs).

In Australia, most of these terms can mean different things to different agencies or individuals. Many agencies will conduct debriefs at the end of an operation or shift. Some agencies will conduct similar activities and call them AARs (see Box 3.1). Regardless of the terms used, organisations need to be clear about what they mean and how they fit within the lessons process.

Warnings about language

Lessons managers need to be aware that organisations and individuals use terms and techniques inconsistently and sometimes interchangeably. There are no agreed definitions to delineate the terms. Lessons managers need to be aware of their own organisation's procedures and terminology, and be aware that other agencies will continue to use different procedures and terminology. In this handbook, debrief is used as the overarching, generic term to refer to the range of activities designed to collect information or observations to inform lessons identification. Critical incident stress debriefs and psychological debriefs are particular types of debriefs but are beyond the scope of this handbook, which provides general considerations for debriefs and after action reviews. Refer to references for further resources.

Table 2: Characteristics of formal and informal debriefs

Formal debriefs	Informal debriefs
Are facilitated by an objective outsider. Take more time.	Are conducted by those closest to the activity. Take less time.
Use more complex review techniques and tools. Are scheduled beforehand.	Use simple review techniques. Are conducted when needed. May be held at the event site.
Are conducted in meetings or other 'formal' settings.	Can be covered by a less comprehensive report.
Require a more standard and thorough report.	

3.1.6 Approach to debriefs

Debriefing is more than simply producing a report at the end of a meeting. It is a part of the process of learning and can have a powerful influence on the organisation and the people involved. It can educate and motivate people, and give them a sense of ownership of the outcomes. It can prevent future confusion on organisational priorities and philosophies, give confidence to the affected community, and drive home the main point of lessons management – that we learn from our experience.

One of the aims of debriefing is for people to communicate the experiences they had during the event so that observations can be identified. In some instances, the informal debrief process will identify work practices that can be modified immediately. However, these need to be captured for broader consideration, validation, prioritisation and implementation. The debrief process should be guided by an organisational protocol that encourages learning. Debriefing processes should clearly manage expectations about what will be captured during the debrief. It is important that the debrief remains focused on gathering observations for the lessons management process and is not used to apportion blame. Judgements about the success or failure of an operation should not set the tone for the debrief, as important observations could be missed. Debrief reports and documents should clearly communicate the learnings and any next steps to ensure these can also facilitate the sharing of experiences.

3.1.7 When and how to debrief

Organisations wishing to adopt a lessons management approach need to develop suitable guidelines to determine in which circumstances debriefs may be required, for example:

- an informal debrief to be held after an event, exercise or training session
- formal debriefs to occur when
  - significant injury has been sustained by responders or the public, or safety was compromised
  - substantial resources were engaged
  - significant operational shortcomings or unforeseen events occurred
  - significant damage to property occurred
  - recovery issues have been raised
- as otherwise required by standard operating procedures or business requirements
- a multi-agency debrief for events that required a multi-agency response
- approaches to community debriefing.

The debrief guideline or procedure should include templates to ensure that debriefing processes are followed consistently.

For more information on debriefing refer to *Conducting Successful Debriefs - A Handbook for Facilitators (AFAC 2015)*.

3.2 The OILL process

(observation – insight – lessons identified – lessons learned)

Once individual observations regarding an event or activity have been collected, they need to be analysed for insights and synthesised to identify what the lessons are for an organisation. Not only is it time and resource intensive to work on individual observations, but one observation may reflect a random occurrence or aberration, rather than a systemic gap in performance that needs to be addressed. One approach to synthesising observations, analysing for insights and identifying lessons is the OILL process (observation – insight – lesson identified – lesson learned). This approach is widely used by military organisations, many emergency management agencies and private sector organisations. Definitions of these terms are listed below.

Observation: a record of a noteworthy fact or occurrence that someone has heard, seen, noticed or experienced as an opportunity for improvement or an example of good practice.

Insight: A deduction drawn from the evidence collected (observations), which needs to be further considered. Insights occur when there are multiple observations (pieces of evidence), which are similarly themed. As a general rule, a minimum of three observations (from multiple sources) should be used for an insight although an insight may be developed when a single observation poses a high risk to the organisation. Insights may also identify an opportunity for further analysis. Insights can be positive or negative, and can contribute to reinforcing positive behaviour or changing practices. An insight defines the issue, not the solution.

Lesson: A lesson is knowledge or understanding gained by experience (NATO JALLC 2011). The experience may be positive (a good practice) or negative (a gap in performance or doctrine).

Lesson identified: a conclusion with a determined root cause based on the analysis of one or more insights and a viable course of action that can either sustain a positive action or address an area for improvement.

Lesson learned: A lesson is only learned once the approved change is implemented and embedded in the organisation. Depending on the changes required, it may take several years for the change to be institutionalised across the organisation. A full iteration of a lessons learned cycle would involve the identification of a lesson, an action proposed and agreed, the solution implemented and then tested/validated to ensure the change is an improvement and the desired behaviour is sustained across the organisation. Refer to Figure 5: OILL process.

3.2.1 Writing good observations

Observations are the basic building block of the lessons process. Good observations are essential to being able to identify appropriate, quality lessons.

Observations need to be able to stand alone and be understood when removed from all other context. An observation may make sense to you when you write it but will it make sense to someone else later when they need to use it in an analysis across multiple events.

When writing an observation:

- only one idea per observation
- write in plain English
- don't waffle
- keep it anonymous by identifying position or role but not names
- spell out all abbreviations and acronyms
- avoid jargon and colloquialisms
- be descriptive and include examples.

What are the elements of a good observation?

The structure of an observation consists of the following parts:

Who?

Who did the observation come from?

What is their position, role or agency?

Do not use names. This is not about identifying, blaming or shaming individuals.

When?

This gives context of the circumstances and how far in the past it occurred. It also allows comparison with other experiences from the same event.

What was the date?

Did the activity have a name?

Where?

Where did the activity occur?

Was it in specific terrain, an operations centre, as part of a project or during an exercise?

This allows comparison with other experiences in the same sort of location or environment.

What?

This is the detail of what occurred, what was seen, heard or felt and the impacts (i.e. This is what happened and was observed and it had this impact and/or result).

Suggested solutions?

Participants may have suggested solutions on what has been or could be done to address the issue, or they may have already implemented change. Often a suggested solution is not offered or available. If none are available that is fine. Do not feel compelled to come up with one.

Note these are suggested solutions from participants. It is important that lessons managers do not leap to a solution at the collection stage.

Box 3.1: Some example observations

1. An SES team leader working the night shift during the Greentown severe weather event in December 2018 stated that they were not adequately resourced or supported because supporting personnel, such as food suppliers and mechanics, did not operate 24/7 during the event.

2. The incident controller for the response to the severe weather in Greentown in December 2016, stated during the after action review that the common operating picture utilised during the event increased situational awareness for all agencies involved in the response. The use of the mobile application for the common operating picture utilised by teams in the field helped ensure that information about the situation was current. This helped the planning officer to establish the number of resources and personnel required to complete the requests for assistance in a timely and effective manner.

3. As an operations officer working as part of the incident management team during the Centreville fire event in November 2017, I was not clear on what my role was. I could not locate guidance documents and was provided with conflicting advice regarding my role when working under different incident controllers.

4. A crew leader deployed during the Centreville fire event in January 2019 stated that fatigue management was not being undertaken by or being monitored by incident management teams. As a result, some personnel worked 14 hour shifts.

3.3 Analysis

Analysis processes can be very complex and involve utilising a range of different theories and applications to derive findings. This handbook will provide an overview of the simple analysis process as it applies to this lessons model. It can be varied to accommodate an organisation's source material and requirements.

Note that, before starting an analysis, the purpose, scope and parameters of the task need to be defined. A key goal of lessons analysis is to determine the primary causes (or root causes) of the observations and insights. From here, lessons can be identified and appropriate courses of action to learn the lessons can be recommended.

The analysis step involves the review of the collected data to identify trends or themes that an organisation may use to define its learning opportunities. This informs possible solutions, strategy development and implementation options.

Lessons practitioners should be aware that observations are people's perceptions. The analysis process needs to identify the factual evidence underlying these perceptions and identify the root causes of the situation.

To support analysing observations, developing insights and identifying lessons, the OILL process is utilised to analyse the data collected. This process utilises:

- Data triangulation: this involves the grouping of similar observations from multiple sources such as interviews, behaviours observed and documents.
- Data coding: this involves the labelling or 'coding' of the observations into common themes.
- Data pattern recognition or trend analysis: this involves exploring the observations coded to identify patterns or trends (e.g. similarities and differences across multiple sites, incidents or reports).
- Data interpretation: this involves interpreting the pattern or trend to determine the insight that summarises that content and root causes.

There is qualitative data analysis software that can be used to enhance efficiency of these tasks and provide transparency.

There are two broad approaches to analysis, deductive (top-down) and inductive (bottom-up). Deductive analysis begins with a theory or hypothesis that is tested by observations. If the observations support the theory, it suggests that theory is correct. Inductive analysis involves the analysis of observations to find trends and themes. These trends and themes are then linked together to form a theory or hypothesis. Analysis in a lessons management process often uses a combined approach (NATO JALLC 2011).

As a minimum, analysis should include the following (see Figure 5: OILL process diagram)

- data coding (single or multiple codes)
- grouping similarly themed observations to develop an insight (or support an existing insight)
- analysing observations within an insight to identify the root cause
- verifying insights with subject matter experts
- developing lessons identified
- prioritising and/or authorising outcomes.

This process will provide organisations with focused lessons identified backed by robust analysis and supported by adequate evidence. Staff conducting analysis should conduct it in a systematic and comprehensive manner, while maintaining focus on the organisation's requirements and bearing in mind realistic time frames. When conducting analyses, it is important to exclude irrelevant facts, support realistic possibilities and test the analysis with argument. The following subsections provide more detail about the steps in this approach.

3.3.1 Coding

Once you have a number of observations you can code each one. Some organisations use the term theme or thread instead of code. Coding is a systematic categorisation of observations so that they can be grouped, common themes identified and trends noted.

Depending on your agency requirements, you can code the observation in as many ways and on as many levels as you like.

Coding will also allow observations to be extracted to inform analysis at any time. Using a common coding system can facilitate the exchange of information and lessons across agencies, sectors and jurisdictions. In going through qualitative data, themes will naturally fall out. This is fine and should be followed, alongside predefined codes such as the national themes, capabilities and elements of capability. To assist in this process, it is recommended that the following coding classifications be used as a minimum:

- National themes. These are major, high-level descriptors that were initially developed at the first National Security Knowledge and Lessons Management Workshop that was conducted at the former Australian Emergency Management Institute. The aim of these themes was to have at least one consistent way for all agencies to code and therefore share observations. These are common to may agencies, operations and exercises, and can also be expanded to include observations specific to relief, recovery and preparation activities. (see Figure 4: National themes)
- Capabilities or lines of operation, which are used to describe the activities undertaken by an organisation.
- Elements of capability, which are the specific building blocks or enablers of all capabilities.
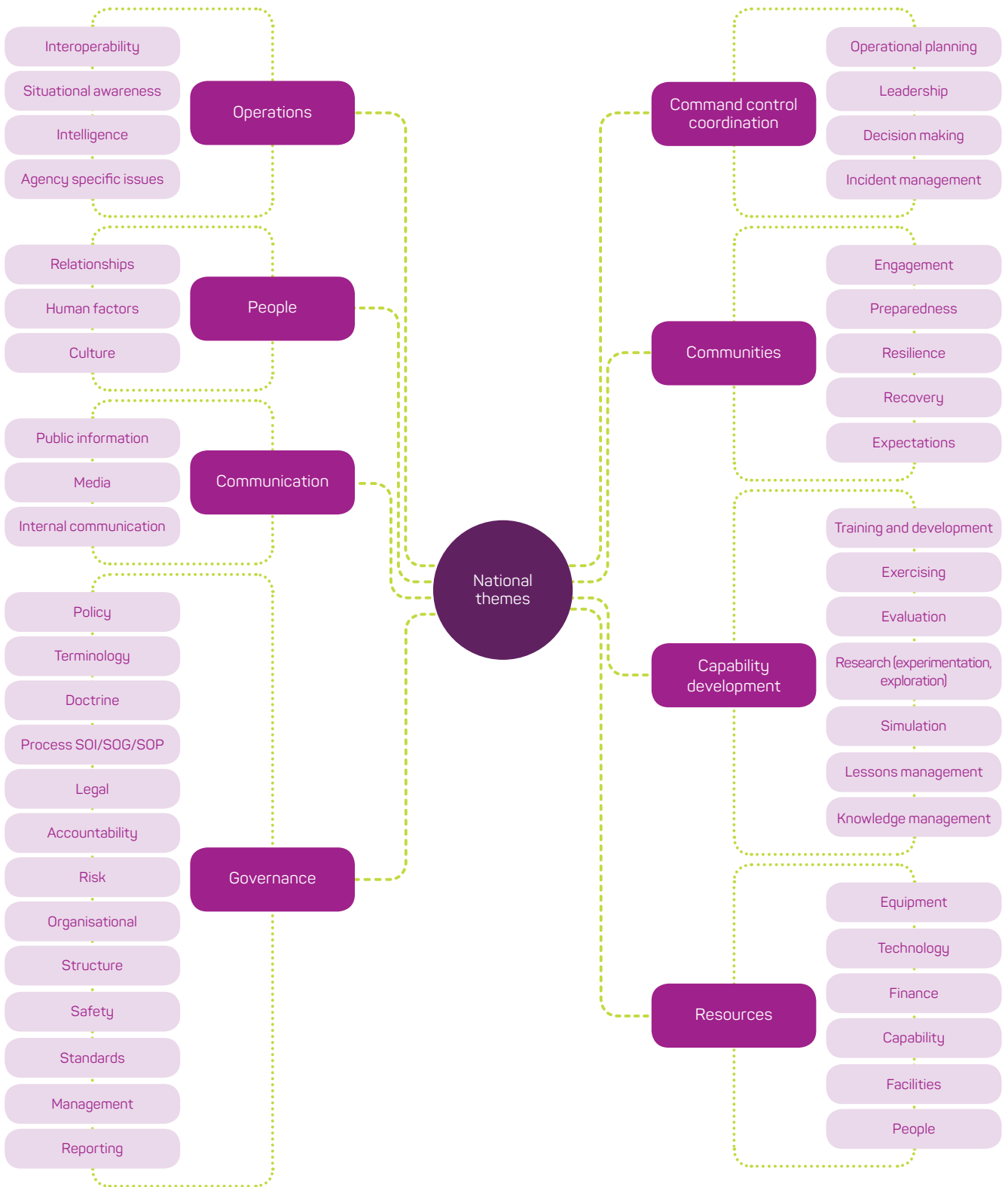
National themes

Figure 4: National themes

Refer to handbook companion document *Lessons Management Models and Examples* for a suggested list of capabilities and different approaches to classifying different elements of capabilities: **www.knowledge.aidr.org.au/resources/lessons-management-handbook/**

Many agencies in Australia are using elements of capability models such as PPOSTT (people, process, organisation, support, technology and training) as one way to code. A review of international literature in Appendix 1 shows that many international models essentially list the same elements. From a lessons perspective, elements of capability are just one way to code and are useful to help identify root cause.

Other codes can be developed by agencies or jurisdictions as required. Serious consideration needs to be given to development of other coding schemas as any changes, developments or updates required have consequences for previous observations already coded.

The handbook companion document *Lessons Management Models and Examples* provides examples of state level codes: **www.knowledge.aidr.org.au/resources/lessons-management-handbook/**

Organisations may want to add coding classifications specific to their activities such as:

- functional areas
- corporate areas
- unique identifiers.

Another good option for coding to address inconsistency is to have two analysts code the same data separately, then compare the results. Coding is often a multi-step approach, where you code, then review, then refine your codes.

Once coded, you can rapidly sort your observations by code to start to identify patterns. This supports quick analysis to identify emerging issues or trends. It can also identify where you may have information gaps and need to refocus your collection or collect additional data to confirm a trend. Coding also supports more detailed analysis and the development of insights.

3.3.2 Grouping similarly themed observations to form an insight

Once coded, similar observations are grouped and inform the development of insights. Insights are deductions that succinctly summarise patterns of observations. Alternatively, an insight may be identified when a single observation is rated as a high risk requiring immediate action.

Not all observations from an activity will immediately contribute to an insight. This usually occurs where observations from one event are not significant or prevalent enough. They may, however, translate into a trend with the aggregation of observations over time or multiple events to form an insight. To determine which

insights are relevant and can contribute to an analysis, other external agencies may need to be consulted.

This process may occur as part of a debrief or review process while you have appropriate personnel present to formulate and validate the insights

3.3.3 Analysing an insight to identify the root causes

Insights are analysed to determine their causal factors. This is undertaken using root cause analysis tools. Simple tools such as the 'five whys technique' (Ohno 1988) can help determine the root cause(s).

This step focuses on identifying the root cause(s) of observations or insights rather than simply addressing their symptoms and can prevent problems from recurring or provide guidance to ensure that positive actions are sustained. The root cause analysis should be conducted in conjunction with subject matter experts to ensure the analysis is valid.

For more information on root causes refer to references.

Refer to handbook companion document *Lessons Management Models and Examples* for more information on analysis techniques: **www.knowledge.aidr.org.au/resources/lessons-management-handbook/**

3.3.4 Getting from an insight to a lesson identified

Some organisations talk about a 'mature' insight. You might draft an initial insight once you have a number of observations. That insight may be adjusted as a result of root cause analysis and/or subject matter expert validation. You might even find additional relevant observations from the same or similar events that add evidence and additional perspective causing you to adjust and improve the insight. Regardless of whether your insight is initial or mature, remember that an insight defines the issue, positive or negative, not the solution. A lesson identified should contain proposed solutions and/or what success should look like for the lesson.

An insight could be a succinct summary of a problem. That insight may need to be approved or agreed by your management. There are advantages in having the discussion 'do we agree this is the definition of the problem and the root cause' without being distracted by trying to come up with the solution, particularly for complex issues. Once the problem and its cause are agreed, work can begin on what is the lesson that needs to be learned (the solution). A recurring issue for lessons managers are those who see one observation and attempt to leap straight to a solution.

One or more insights may be used to develop a lesson identified. Some organisations prefer a minimum of three insights. A lessons identified consists of the lesson and will normally include the action required to learn and

The OILL process

Step one:
Collect observations. Numerous observations are collected from multiple sources.
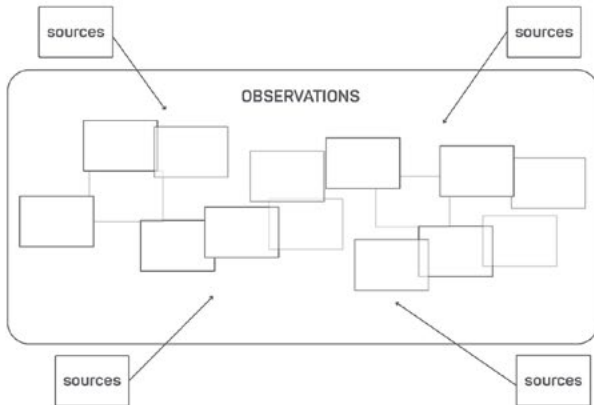
Step two:
Observations are coded so that like observations can be sorted in to themes.
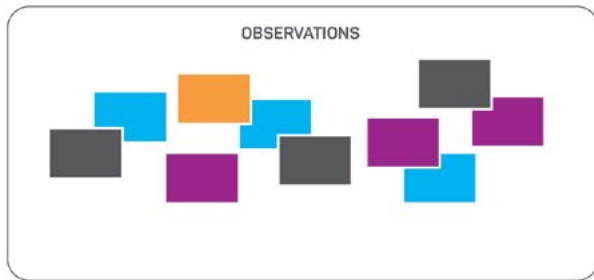
Step three:
Observations are sorted to facilitate analysis.
HIGH RISK OBSERVATIONS ARE IDENTIFIED FOR EXPEDITED ACTION.
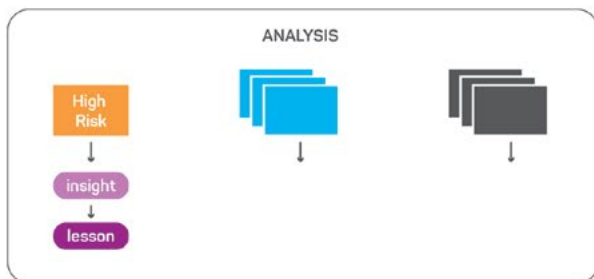
Step four:
Insights are developed in conjunction with subject matter experts (SME).
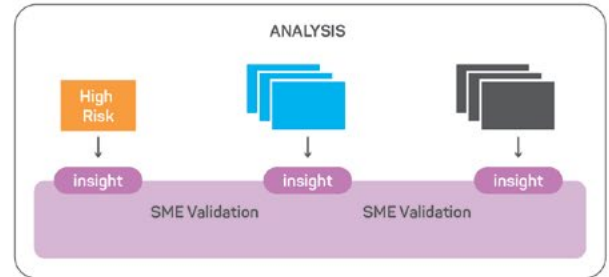
Step five:
The lesson identified (what needs to be learned and the action required to achieve it) is developed with subject matter expert (SME) input.
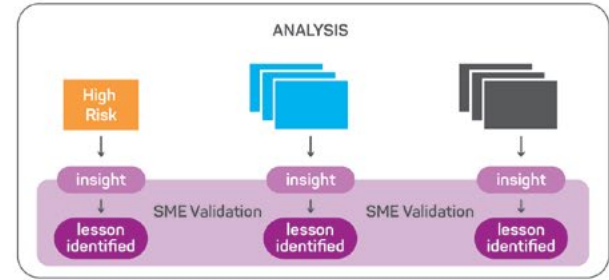
Step SIX:
The lessons identified are documented (with relevant supporting detail ie: insights and/or observations).
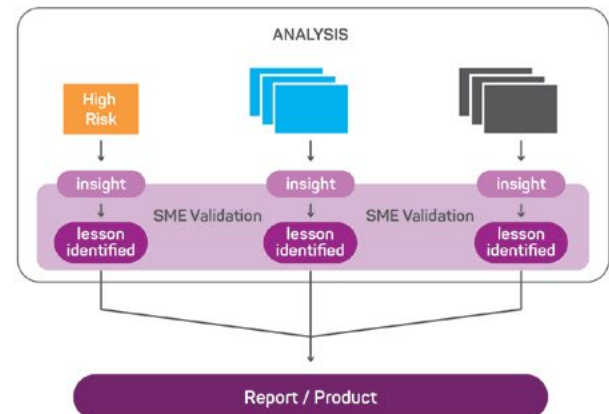
Figure 5: OILL process diagram

implement that lesson. Subject matter experts may need to be consulted when writing the lesson and the action to ensure for example that is correct, achievable, affordable, within policy etc.

At this stage consideration should also be given to how to measure changes to be able to confirm that the lesson has been learned.

3.3.5 Verifying and/or authorising outcomes

A report should be provided to the relevant decision making authority in the organisation that outlines the insight and/or lessons identified and the recommended actions identified in the previous step. This authority should confirm the actions recommended and the implementation plan.

The report's contents will vary according to organisational needs. As a general guide, analysis-based reports may include:

- overview of the event
- brief summary of the collection activity and methods
- summary of insights and number of supporting observations
- lessons identified, including subject matter expert validation/prioritisation
- next steps/actions for approval
- detail on the monitoring and review processes
- engagement and communication required.

A lesson is said to be identified once the relevant authority in the organisation has accepted the report and agreed on actions. At this stage, you should also identify performance measures that will determine if the required changes have been implemented, and if they are effective and long lasting. Initial measures should also be taken to establish a benchmark before implementation. One measure of the success of lessons management will be the decline in similarly themed observations over time. You will now have a lesson identified, which will need to be implemented.

3.4 Implementation

Once the analysis is complete, consider how to implement the lesson(s) identified - do practices need to be changed or be sustained?

> Implementation of improvements and sustaining the resulting change is a difficult process. You need to be aware of what to expect when implementing lessons in an organisation, how to engage people and how to learn the lessons. Knowledge or awareness of lessons management processes will assist in ensuring success of the process.

This section will discuss some issues that are commonly confronted when managing lessons and outline some strategies that may improve the likelihood of success. An understanding of contemporary change management practice will also be useful in this process.

The implementation phase of lessons management requires:

- Organisational support and individual commitment
  - have executive support – this is critical for successful implementation
  - lessons implementation embedded into other business as usual implementation and reporting processes
  - recognise that gaining commitment from people is vital to the success of the model because acceptance of the change ideally comes from top down and bottom up.
- Collation and summation of actionable lessons identified, including actions and recommendations
  - the lessons identified should be prioritised to reflect the outcomes and should be achievable
  - lessons that are complex or difficult to action should be shared and their status explained to ensure transparency.
- Preparation of an action plan including monitoring, review and reporting on lessons learned
  - have an action plan for implementation, but be prepared to adapt this if necessary.
- Promotion of lessons internally and across organisations
  - actively promote and share lessons identified and learned supports cultural shift and organisational and/or sector uptake.

3.4.1 Engaging others in lessons implementation

A collaborative approach to encourage amended practice is a key aspect of implementing lessons. Obtaining the contributions and thereby investment of all stakeholders in learning from an event through their collaborative involvement will provide the best conditions for sustained behaviour change into the future.

The uncertainty of change can provoke strong emotions in people. When change is required, it is important to consider how people will be affected by changing a process or procedure that they are comfortable with.

People are generally the most critical resource, supporter, barrier and risk when managing lessons within an organisation. Support for their experience of change should be identified in the communication plan and included in the stakeholder analysis (refer to section 2.2.4).

3.4.2 Communication with your target audience

As with each of the four steps described in this chapter, and in Section 2.2.4 addressing communication and engagement in Chapter 2, communication should take place throughout the lessons cycle with key stakeholders. Early communication and consultation will assist in getting people interested and prepared to participate in the lessons management process.

Lessons implementation will be more successful and more people will be committed to the change if they believe it will improve things. Encouraging informed debate and discussion about the benefits of implementing lessons can help to motivate change. People will be inclined to move away from a problem and towards an improved state. This need for commitment includes senior management who must be included in the engagement. Senior managers will expect to see the outcomes of the process, and their involvement will inform their leadership and commitment to resources.

3.4.3 Using a pilot

It is often a good idea to begin with a pilot (i.e. a small trial of the lesson identified), which can be undertaken in an area that is keen to be involved. Using people in an area who are enthusiastic about learning the lesson will increase the chances of success and pave the way for a positive broader rollout. These people are often referred to as project champions, because they have the ability to not only implement the lesson, but to also promote the process to the rest of the organisation.

Clearly specifying the aim of the pilot will enable any evaluation to determine the effectiveness of the implementation. It is important to also plan to continue the implementation should the pilot be successful. Many pilot projects, while successful, fail to become embedded in organisational practice.

The pilot can highlight any barriers to the implementation of lessons as well as provide valuable learning in successful implementation strategies. The information and outcomes achieved from a pilot can redefine the approach used in implementing the lesson.

3.4.4 Tips for an implementation plan

Sharing lessons and prioritising information are both important for a successful implementation plan. These are discussed on the following pages. Box 3.2 includes some additional tips for a successful implementation plan.

Box 3.2: Coming together to share lessons

From the initial release of EM-LEARN, Victoria's lessons management framework, Victoria utilised pilot lessons management programs to begin implementation and particularly utilise champions and begin emphasising the importance of building a culture which supports lessons management. In April 2016, shortly after the release of the framework, the first 'Bring a Plate and a Lesson' session was held based on the topic - learning from our history.

Bring a Plate and a Lesson sessions take the concept of a shared plate morning or afternoon tea and includes lessons management related activities to support creating a safe space to connect people within and across organisations and assist the sharing of knowledge and learnings. Since April 2016, a number of sessions have been held covering topics such as 'a day in the life of' panel discussions, use of thank you cards for colleagues, the history of the State Control Centre, learning from our heritage and the history of community warnings and advice.

As more sessions were planned, more personnel from different parts of organisations and the sector have been interested in also hosting one, showing the value and importance of taking time to come together and share.

Sharing lessons

Sharing lessons within and between organisations ensures everyone benefits from the knowledge gained. Lessons can be shared through many avenues, such as briefings, bulletins, reports, emails and websites. Sharing lessons and making them available to everyone should be a primary goal of a lessons management process, because it can reduce risk, improve efficiency and increase the effectiveness of processes and operations. Data sharing between lessons managers and other learning organisations is also encouraged. The guiding principle in executing a sharing strategy is to get the right information to the right person at the right time. It is imperative to make sure the information you disseminate is accurate and correct. It is often a challenge to be able to get the right information quickly to those who need it the most.

Once the information from the lesson is shared within and/or between organisations, knowledge management techniques can be used to turn the explicit organisational knowledge into tacit knowledge. Sharing lessons and the relevant changes to doctrine and training is integral to developing tacit knowledge across an organisation.

Lessons management processes need the ability to share and disseminate information to be effective. It is also necessary to be able to determine which information is urgent and how rapidly it must be passed to individuals or other organisations that could benefit from the knowledge. The organisation should have a process and medium to do this, and may need to have the ability to handle both classified and unclassified material. A plan created well before collection of the lessons that also recognises any sector or jurisdictional arrangements, will allow for each of these requirements.

Box 3.3: Why don't people share?

- it's not convenient
- they do not know what they know
- they do not know the value of what they know
- time is not allocated by the organisation for knowledge sharing
- they believe knowledge hoarding is job security
- they think they will punished if things were not perfect
- they do not get credit for it
- they do not have the time
- they do not know how.

Prioritising information

A key part of a lessons management process is identifying and sharing priority lessons quickly. This requires an ability to analyse information from collections, determine urgency or priority and gain permission from management to share priority lessons as rapidly as possible. The challenge in this process lies in the fact that the faster you need to get the information out, the more risk you assume by not conducting a thorough analysis to ensure you are drawing the correct lessons. Often the shear amount of lessons is also unsustainable for implementation so prioritisation is important to identify which lessons will be implemented in the short, medium and long term and capturing the reasoning as to why the prioritisation has been assigned.

For example, the 'immediate' need to share a particular lesson may be to prevent the injury or death of an operator. If shared rapidly, information should continue through the analysis process and eventually be formally vetted and become a part of the broader lessons process.

Box 3.4: LEARNtember

In 2016, Victoria held its first LEARNtember to further support the implementation of lessons management across the emergency management sector. It was originally a week of sharing experiences and learning from each other. LEARNtember has since evolved to the entire month of September where the Victorian emergency management sector takes some time to reflect, learn and share with each other on a variety of topics. LEARNtember is a concept borrowed from international organisations, to celebrate knowledge and lessons management and enable our people to feel safe and supported to take some time to reflect. A range of topics and events are held during the month of September that focus on sharing knowledge and building capability that do not cost to attend. During LEARNtember, personnel from across the emergency management sector and Victorian public service are invited to put down their tools and learn something new from someone they might not have come across before at one (or more) of the events on offer.

Observation, insight, lesson identified, lesson learned (OILL)

Table 3: OILL infographic: what is OILL all about?

Steps –sub steps	What it is	What it is not	Example
Observation Theme the observations	A singular perspective or opinion in the context of a specific incident, exercise, project or report.	A lesson In full context	As an operations officer, working as part of the incident management team in response to the Centreville Flood of January 2019, I was not clear on what my role was. I could not locate guidance documents and was provided with conflicting advice regarding my role when working under different incident controllers.
Insight Analyse and validate	A deduction drawn from multiple occurrences of observations.	A lesson	There is an inconsistent understanding and application of incident management team roles and functions. Observations indicate that while individual staff within the incident management teams apply their skills to their particular function to the best of their ability, the lack of training, experience and supporting doctrine affect the consistency, situational awareness and the general management of response and recovery activities.
Lesson identified Develop an action plan, observe, measure and adjust	Developed through analysis, research and subject matter expert input. Analysed insights. Placed in full context. An action that improves performance.	Learned Anecdotal	Incident management teams are most effective when underpinning doctrine is clearly defined, articulated and implemented. Personnel then need to be trained and provided with opportunities to gain experience either in exercises or operations. Insight analysis indicates that a review of current doctrine and the incident management team training framework is required.
Lesson learned	A demonstrated change in behaviour Incorporated into doctrine, training and procedures.	The lesson In full context	Consistency in incident management has been demonstrated when personnel use current doctrine, which they regularly train against, and they are able to apply in exercises or operations.

3.4.5 Barriers to implementation

An effective lessons management process needs to ensure that lessons are institutionalised and practised. However, the following barriers often prohibit an organisation from effectively implementing a successful lesson management process:

- Lack of leadership authority and commitment to the learning process. It is vital that an organisational culture that fosters the value of knowledge sharing exists. Such a commitment will aid in alleviating the natural resistance of individuals and/or organisations to share their lessons. The goal is to move from a culture of punishing mistakes to one of learning from them so as not to repeat them, acknowledging that mistakes will always occur in a complex world.

- Large quantity and poor quality of lessons available. Lessons, if poorly managed and coded, may result in a convoluted and ineffective repository of observations that offer little or no value to those intending to benefit from them. Even with adequate skills in distilling lessons, the volume of lessons can be problematic, particularly when an organisation does not have the capacity to implement them. Refined skills in the management of observations and succinct insights will assist in ensuring that quality lessons are identified. Realistic action plans should prioritise lessons. The risk in losing sight of these lessons should be mitigated by a system that revisits progress on lessons on a regular basis.

- Inadequate resources devoted to lessons management. An effective lessons management process requires significant ongoing resource commitment and support. Where there is a low resource allocation for lessons capability, keep the coding and process simple. This achieves results by proving the worth of the program before seeking to expand resources for a more sophisticated system.

- Lack of specific resources and skills within the organisation to support the transfer of knowledge from a lesson to the people who are expected to change their practice.

- Lack of application in a broader context. Lessons are often identified in multi-agency environments, but generally can only be learned within single organisations unless mechanisms are in place to collaborate and synchronise multi-agency efforts. Organisations need to take responsibility for learning their own lessons. Multi-agency activity is only as strong as the weakest link.

- Concern that implementing change will be seen as an admission that earlier practice was negligent and lead to liability. The need to learn lessons has to outweigh being unduly candid about what happened for fear of whether it might resurface to be used against organisations. The community have an expectation that the emergency management sector takes time to reflect, learn and continuously improve based on learnings from the past to ensure more effective operations into the future.

- Lessons learned from the past do not alone guarantee greater future success. Individuals, organisations and processes need to be flexible enough to take what has been learned from past situations and adapt to meet new challenges. Lessons are potentially most valuable if they can be extracted from specific past circumstances and applied to broader future situations.

- Sometimes before a lesson can be learned, old ways may need to be unlearned. Unlearning can be described as 'the process of reducing or eliminating pre-existing knowledge or habits that would otherwise represent formidable barriers to new learning' (Newstrom 1983).

> **"The illiterate of the 21st century will not be those that cannot read and write, but those who cannot learn, unlearn and relearn.**
>
> — Alvin Toffler (b. 1928 futurologist)

In a rapidly changing world, or emergency operation, individuals and organisations need to be flexible enough to use knowledge to adapt to emerging situations. Learning may be difficult but it is often unlearning that we really struggle with.

3.5 Monitoring and reviewing

This step focuses on establishing or confirming the success or outcomes of lessons identified implementation activities.

Monitoring and review should be an ongoing component of lessons management and integrated into the organisation's ongoing program of review. The key is to know what you are measuring and validate that the changes have actually resulted in improvement. Change may be validated through exercises, training and operational activity. A lesson has been truly learned when the observation no longer occurs.

How lessons identified will be monitored and reviewed needs to be considered at the outset. This also includes an agreement with managers on how, when and what information needs to be passed up through levels of management.

There are several ways to determine if lessons are effective. Quantitative and qualitative measures can be used to assess:

- changed behaviour or culture
- increased operational effectiveness
- better resource efficiency
- improved safety
- improved community outcomes
- increased compliance with policy, processes and procedures.

Monitoring the effectiveness of the implemented lessons needs to be carried out as outlined in the implementation plan. The results of this monitoring can indicate if implementation is on track or if changes need to be made to the plan. Consider developing key performance indicators (KPIs) to determine if a lesson has been learned and track these during the monitoring phase. Monitoring of effectiveness should also promote integration of implemented lessons into existing KPI frameworks so that they get picked up in mainstream processes. Where possible, monitoring should use information that is routinely collected by the organisation.

3.5.1 Reporting

Implementation reports may vary in style, composition, organisational requirements and target audience. As a minimum, they should include data against the established benchmarks and action items within the implementation plan. Consider feeding this into business as usual processes for progress reporting and the use of consistent reporting templates. Lessons managers want to avoid becoming 'action trackers' but instead oversee lessons management processes and provide guidance to work groups, teams and organisations on how to implement a sustainable and ongoing approach to lessons management.

Ideally, the results will be shared with all stakeholders, and therefore require different styles of communication for different audiences. Reporting helps develop a learning culture that is inclusive and sets the standards for implementing future lessons within the organisation.

Chapter 4: Other considerations

There are a number of other factors that should be considered when setting up and operating a lessons management process.

4.1 Before and after the event

Before the event

If there is time before an event, consider holding a before action review (BAR). Ask the team to reflect on the following questions:

- What are our intended results and measures?
- What challenges can we anticipate?
- What have we or others learned from similar situations?
- What will make us successful this time?

The responses to these questions align the team's objectives and set the stage for an effective debrief meeting following the action. Further consider breaking a sizeable event down into chunks, holding BARs and AARs to develop a feedback loop.

During

Hot debriefs, real time lessons, sharing trends and insights as they arise during an event, BARs to inform emerging situations

After the event

Post-event activity will include undertaking debriefs, preparing reports, reviewing plans and arrangements, and documenting and implementing lessons.

4.2 Sensitive issues

There will be times when the lessons management process leads to the disclosure of sensitive information that may pertain to personal, ethical or safety issues. At the outset of any data collection activity, lessons practitioners should advise participants that they are only interested in identifying what can be sustained or improved, not who was at fault.

In instances where sensitive issues arise, the lessons practitioner needs to be aware of the organisation's policies and procedures to deal with them. Sensitive information that is collected may need to be treated in a confidential manner.

It is possible that asking people about their observations during or after an event may trigger critical incident stress reactions. Lessons managers need to consider this possibility when planning collection activities, be aware of relevant organisational procedures and be prepared to refer people accordingly.

4.3 Legal issues

It is inevitable that after any major event, or any event that leads to a death, there will be a legal investigation. This may be an investigation by police, who are required to prepare a report for a coroner, a further investigation by police if they suspect that criminal conduct was involved (for example, where it is suspected that a fire was started by arson or a terrorist-related event), formal coronial inquests or inquiries, a Royal Commission or other post-event inquiry, and occasionally litigation where someone alleges their losses were caused by another's negligence.

Some legal processes – in particular formal coronial inquests (into deaths), inquiries (into fires or disasters) and special inquiries such as a Royal Commission – are intended to collect data and identify potential lessons. These inquiries are, however, limited by their terms of reference and they may make recommendations that can only be implemented at a whole-of-government or policy level.

Royal Commissions and coronial inquiries should be seen as another tool for the collection of observations and as an independent analysis of the response and outcomes to any particular event. They should be seen as complementing and assisting, not substituting for, a lessons management process.

People involved in the lessons process may be called upon to provide statements or evidence to these inquiries. Further reports and notes produced as part of the learning process may be subject to 'discovery' (which means they would have to be given to the other party in litigation) or 'subpoena' (which means they would be produced to a court).

Those involved in the lessons process should, generally, not be concerned how the material may be used in legal proceedings. There are rules of evidence, including rules that restrict the use that may be made of confidential material, as well as rules of law that define how such material may be used and what is relevant to a particular case. It is beyond the scope of this handbook to discuss those rules in detail but it is clear that, during the debrief or lesson identification process, one cannot know in advance if the material might be relevant to any subsequent proceedings.

As a lessons manager, your role is focused on identifying the lessons that can be learned for future application – you are not responsible for speculating or determining potential liability arising from a particular incident. It is important that debriefing accurately captures lessons. Identifying lessons from a particular incident may well demonstrate that the response reflected good practice or that the lesson could not have been identified before this event.

As part of the process to identify potential lessons, participants should be reassured that their agency wants to identify the true lessons to support continuous improvement. If participants become involved in subsequent legal proceedings, they should approach their agency about legal advice and assistance.

4.3.1 The privilege against self-incrimination

A person does not have to answer questions from a police officer or a judge if they fear that the answer may be used to prove that they have committed a criminal offence. It is unlikely that material disclosed during a debrief process would be evidence of criminal conduct but it may lead to further police investigation. Where police suspect that a person may have committed an offence, they must warn the person, before asking any further questions, that 'you do not have to say or do anything, but anything you say or do may be taken down and used as evidence' (or words to that effect, depending on the jurisdiction). If the privilege is available in legal proceedings, a similar warning will be given by a judge, coroner or royal commissioner if a question has the potential to incriminate a witness. Anyone who is issued a formal caution should seek independent legal advice before taking further part in the process or answering further questions.

Conclusion

The national interoperability of lessons across the emergency management sector is a long-term vision for Australia due to the growing interest in lessons management. High level buy-in for cultural change and the development of more interactive and collaborative relationships across the sector are essential to creating the conditions for sharing lessons more productively.

The *National Strategy for Disaster Resilience* has identified that sharing knowledge, including lessons learned from previous events, is important in promoting innovation and best practice. However, identifying lessons is simply not enough. Adapting our systems and approaches requires constant evaluation of capabilities, and the implementation and sharing of findings across the community. Information on lessons learned – from local, national and international sources – should be accessible and available for use by governments, organisations and communities undertaking risk management planning and mitigation works. The information and approaches suggested in this handbook are the first steps towards this adaptation.

We would like to keep this handbook up to date with the latest concepts, procedures, good practice and innovation in lessons management so that it remains a current and useful resource for everyone managing lessons. The handbook is available as an online resource on the Australian Disaster Resilience Knowledge Hub: **www.knowledge.aidr.org.au/resources/lessons-management-handbook**. It is reviewed every five years. In the meantime, AIDR continues to collect information to inform changes to the next edition and welcomes suggestions for change, improvements and good practice examples. Please email contributions to **enquiries@aidr.org.au**

Appendix 1

Lessons management: an international literature review

A systematic literature review of approaches to lessons management reveals a number of distinct concepts, in particular organisational learning, knowledge management (and lessons learned as a specific approach to knowledge management), and organisational learning. There exist a number of traditions within the research field and practical application within business and military. The NATO (2011) approach to lessons learned is especially influential. In regards to the disasters field, in-depth 'lessons learned' reports following major incidents both in Australia and internationally indicate that the concept is embedded in the field even while application challenges remain.

Of particular interest is the concept of 'continuous improvement', which is defined as 'management strategy involving an organisation wide processes of continuous incremental innovation and adaptation to major change' (Bessant & Francis, 1999). There are a number of commonalities in the approach to continuous improvement (even where differences in terminology exist across traditions), in particular they define three major stages:

1. generating knowledge, for example by after action reviews, evaluations, and public inquiries
2. acting on knowledge, for example by updating doctrine, standard operating procedures, or tools
3. sharing and disseminating knowledge (both internally and externally), for example by communities of practice, publications and training.

Approaches to disaster forensics and impact assessments

There exist some important overlaps between forensic disaster analysis and impact assessment, and lessons management. There are a number of forensic disaster analysis and impact assessment methodologies available internationally. These approaches typically focus on a major disaster event and explore the root causes, response operations, impact and recovery. While the scope of these approaches varies considerably, they tend to take a multi-agency perspective since they are concerned with the disaster event rather than a single organisation's operation. Key methodologies include (Keating et al., 2016):

- Post Disaster Needs Assessments (PDNAs) (GFDRR 2013): establishes immediate post-disaster needs.
- Damage, Loss and Needs Assessments (DALA) (GFDRR 2010): provides support for prioritizing immediate response and recovery needs.
- CEDIM's Forensic Disaster Analysis project (CEDIM 2015): provides technical information to support prioritizing immediate response and recovery needs.
- EEFIT's systematic forensic methodology (EEFIT n.d.): systematic forensic methodology to provide engineering oriented information on earthquakes and the performance of the built environment.
- Forensic Investigations of Disasters (FORIN) project (IRDR 2011): in-depth analysis of the complex social-ecological interactions that led to the evolution of risk and the resultant disaster.
- Post-Event Review Capability (PERC) (Venkateswaran 2015): analysis of factors leading up to the disaster event and evaluation of performance of the event to identify practical policy recommendations.

Glossary

After action reviews (AARs)

A debriefing process following an event or activity by those involved with, or interested in, that event and whose purpose is to learn from it. Often used as a 'hot debrief', an AAR involves describing what was intended to happen, what was actually accomplished, what mistakes were made and how participation in similar events might be improved in the future. The information collected at an AAR often informs larger organisational debriefs and multi-agency debriefs. They may be recorded in a variety of media as a form of reference for future use. Briefings and AARs (also referred to as debriefings) are excellent learning tools and help to instil an information sharing culture. Their effectiveness depends to a great extent on accurately identifying the most appropriate audience.

Analyse

To study the whole by thoroughly examining its parts and their interactions. In the lessons learning process, the analysis phase should allow discovery of the root cause of a problem or success, identify the appropriate remedial action to correct the problem and the appropriate action body to achieve the correction or sustain the success.

Analysis

The process of systematically applying statistical techniques and/or logic to interpret, compare, categorise and summarise data collected to refine observations.

Analysis techniques

There are various types of analysis techniques. See handbook companion document *Lessons Management Models and Examples* for examples: **www.knowledge.aidr.org.au/ resources/lessons-management-handbook/**

Benchmark

Reference point or standard against which progress or achievements can be assessed. A benchmark refers to the performance that has been achieved in the recent past by other comparable organisations, or what can be reasonably inferred to have been achieved in similar circumstances.

Compliance culture

A culture of compliance embeds compliance into everyday workflow and sets the foundation and expectations for individual behaviour across an organisation.

Conclusion

A reasoned judgment based on a synthesis of empirical findings or factual statements corresponding to a specific circumstance.

Continuous improvement

A management strategy involving organisation-wide processes of continuous incremental innovation and adaptation to major change.

Element of capability

The specific building blocks or enablers of all capabilities.

Evaluation

A time-bound exercise that attempts to assess systematically and objectively the relevance, performance and success, or the lack thereof, of ongoing and completed activities. Evaluation is undertaken selectively to answer specific questions to guide decision makers and/or managers, and to provide information on whether underlying theories and assumptions used in program development were valid, what worked, what did not work, and why. Evaluation commonly aims to determine the relevance, validity of design, efficiency, effectiveness, impact and sustainability of a program.

Evaluation questions

A set of questions developed by the evaluator, sponsor and/ or other stakeholders which define the issues the evaluation will investigate, and are stated in such terms that they can be answered in a way that is useful to stakeholders.

Explicit knowledge

Consists of anything that can be codified, or expressed in words, numbers and other symbols (e.g. plans, marketing surveys, customer lists, specifications, manuals, instructions for assembling components, scientific formulas, graphics) and can, therefore, be easily articulated and shared, usually in the form of documents, processes, procedures, products and practices.

Facilitated learning analysis

The heart of the FLA process is a dialogue session with those directly involved with the event. This generally includes one facilitator helping a group of people think together about the incident and talk their way through what happened and what they can learn from it.

Finding

A factual statement based on empirical evidence gathered through monitoring and evaluation activities. Findings are objective conclusions based on the analysis by subject matter experts. A finding does not suggest a specific course of action. A finding may be a lesson that has been identified.

In some models, a finding is a conclusion reached after analysis to identify the root cause. It is a clear, succinct statement that needs to be agreed to or accepted before considering solutions or recommendations. A finding defines the issue, not the solution.

Framework

A framework is an organisational structure that identifies the key areas – such as culture, governance, methodology, communication, engagement, capability and planning – which are required for an organisation to implement an effective lessons management process. A sound framework will support the implementation of the lessons management cycle of capturing, analysing, identifying and implementing lessons.

Human factors

A discipline of study that deals with the human-machine interface, the psychological, social, physical, biological and safety characteristics of a user, and the system the user is in. A human factor is a physical or cognitive property of an individual or social behaviour that is specific to humans and influences functioning of technological systems as well as human-environment equilibriums. Studying human factors involves looking at all aspects of the way humans relate to the world around them to improve operational performance, safety and the experience of the end user.

Hypothesis

A proposition (or set of propositions) proposed as an explanation for the occurrence of some specified group of phenomena, either asserted merely as a provisional conjecture to guide investigation (a working hypothesis) or accepted as highly probable in the light of established facts. A hypothesis could be:

- a proposition assumed as a premise in an argument
- the antecedent of a conditional proposition
- a mere assumption or guess.

Implementation plan

A documented and authorised course of action developed by an organisation to take a lesson identified and embed it into business-as-usual activities so the lesson may become learned.

Implicit knowledge

Knowledge that is not directly expressed; that is, the meaning is inferred from the context and, therefore, relies on existing knowledge.

Insight

A deduction drawn from the evidence collected (observations), which needs to be further considered. Insights provide guidance for future analysis and potential action. Insights can be positive or negative, and can contribute to reinforcing positive behaviour or changing practices. Insights may be developed when a single observation poses a high risk to the organisation or when a number of similarly themed observations have been collected.

Issue

A matter drawn from the evidence collected (observations), perhaps during an evaluation, which needs to be further considered. Issues will generally be negative, such as problems that have occurred.

Just culture

A just culture has been defined as a culture in which frontline operators and others are not punished for actions, omissions or decisions taken by them that are commensurate with their experience and training, but where gross negligence, wilful violations and destructive acts are not tolerated.

Knowledge management

An integrated, systematic process for identifying, collecting, storing, retrieving and transforming information and data assets so they are readily accessible in order to improve the performance of the organisation. Knowledge management includes understanding data (by classification and rational presentation), synthesising it (by selection, analysis, interpretation, adaptation or compression), making it useful (by presenting arguments, matching needs and problems, assessing advantages and disadvantages) and considering options for selection. The basic tenets of knowledge management are to improve decision making, foster innovation, build relationships, establish trust, share information and improve lessons management systems.

Lesson

A lesson is knowledge or understanding gained by experience (NATO JALLC 2011). The experience may be positive (a good practice) or negative (a gap in performance or doctrine). Successes and failures are both considered sources of lessons.

Lesson identified

This is a viable course of action, based on the analysis of one or more insights, which can either sustain a positive observation or address an area for improvement (Stuart 2012).

Lesson learned

Dependent upon the changes required, it may take several years for the change to be institutionalised across the organisation. A full iteration of a lessons learned cycle would involve the identification of a lesson, an action proposed and agreed, and the solution implemented, tested and validated to ensure the desired behaviour is sustained across the organisation.

A full iteration of a lessons management cycle would involve the identification of a lesson, an agreed implementation process, and validation of the implementation to confirm the improvement of a capability or an element of a capability. It is the end point that results from a change to policies, processes, procedures, equipment, training or some other organisational or operational norm.

Note: A lesson does not become learned until it results in institutionalised change and becomes an ongoing element of the organisational or operational norm or standardised procedure or practice. The change itself is evidence of the learning. Identifying, documenting and even communicating a lesson does not necessarily lead to performance improvement. Once change has been attempted, the learning is occurring.

Lessons management

A component of knowledge management that seeks to introduce better practice and improvement opportunities for an organisation's systems and processes. Lessons management broadly involves collecting and analysing information and data to develop, implement, validate and share changes intended to improve efficiency and/or effectiveness.

Lessons management cycle

The series of changes or developments that lessons pass through from beginning to end, including the collection of information, the analysis and implementation of learnings and the monitoring and review of changes.

Learning culture

A just and fair culture that has a balance between no-blame and accountability, where people are actively involved in continuous improvement that embraces learning.

Learning organisation

There are several definitions for 'learning organisation' from difference sources. For example:

'An organisation skilled at creating, acquiring, interpreting, transferring, and retaining knowledge, and at purposefully modifying its behaviour to reflect new knowledge and insights.' (Garvin 1993)

'Learning organisations [are] organisations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together.' (Senge 1990: 3)

'The Learning Company is a vision of what might be possible. It is not brought about simply by training individuals; it can only happen as a result of learning at the whole organisation level. A Learning Company is an organisation that facilitates the learning of all its members and continuously transforms itself.' (Pedler et al. 1996)

'Learning organisations are characterised by total employee involvement in a process of collaboratively conducted, collectively accountable change directed towards shared values or principles.' (Watkins & Marsick 1992)

Mature observation

An observation for which there is already sufficient data and/or understanding to identify the root causes and thus requires no further analysis.

See also Observation and Raw observation.

No blame culture

A set of attitudes such as those within a particular business or organisations that are characterised by a willingness to take risks or to accept responsibility for mistakes without fear of criticism or prosecution. See also Just culture.

Objective

A generic term usually used to express an outcome or goal representing the desired result that an activity seeks to achieve. Objectives are usually stated in ways that allow the amount of attainment to be measured, and are concise, realistic, outcomes-oriented statements of what a program, sub-program or other element of a program structure aims to achieve. Objectives are specific statements of what is intended to be achieved.

Ideally objectives should be SMART – that is:

- Specific
- Measurable
- Achievable
- Results oriented (i.e. written as something to be achieved)
- Time bound

Observation

A record of a noteworthy fact or occurrence as seen during an activity or operation. In the context of an evaluation, it is the evidence or data collected by an evaluator – that is, what is seen or discovered (observed) during the evaluation. Observations can be of good practices to be sustained, or of opportunities for improvement. The analysis of accumulated observations provides for the development of insights and findings from which recommendations may be developed.

See also Mature observation and Raw observation

OILL (observation, insight, lesson identified, lesson learned)

OILL is an approach to synthesising observations and identifying lessons. (observation – insight – lesson identified – lesson learned) They are steps widely used by military organisations, many emergency management agencies and private sector organisations.

Performance indicator (or key performance indicator (KPI))

Used to quantify the activity objectives and reflect aspects of tasks or capabilities that are both critical to successful performance and impact on the effectiveness of capability. Consider how performance indicators can be measured or assessed other than by subjective opinion, and what evidence can be used to reinforce an evaluation.

Performance indicators should be SMART. See also Objective.

Principles of lessons management

A set of fundamental truths or propositions that serve as the foundation for a system of belief or behaviour or for a chain of reasoning.

Qualitative

Gaining understanding through measurement activity that is primarily descriptive and interpretative.

Quantitative

The use of numerical measurement and data analysis based on statistical methods.

Raw observation

An observation that requires further study or analysis to fully understand the root causes. See also Mature observation and Observation

Real-time evaluation

Evaluation during the conduct of an operation.

Recommendation

A viable course of action that can either reinforce a positive finding or address an area for improvement. Recommendations may not be lessons, however, a lesson may include one or more recommendations.

Restorative practice

Restorative practice is a facilitated group process that supports people to share their stories, take collective ownership and responsibility, and collaboratively reach an understanding of what happened and what needs to happen to ensure due process. Restorative practice allows the people involved in an incident to speak, listen to the stories of others, ask questions, and for everyone involved to be heard in a way that is respectful and ultimately healing.

Root causes analysis

The analysis used to identify the root causes of raw observations.

Tacit knowledge

Refers to knowledge that cannot be readily articulated or explained to inexperienced parties (e.g. drawing, painting, writing, tying a knot, planning, decision making). An individual will acquire tacit knowledge only by gathering information, relating it to existing knowledge and accumulating experience. It involves judgment, intuition and common sense. In groups, tacit knowledge exists in the practices and relationships that develop through working together over time. The major challenges are in its recognition, sharing and management. It is characterised in that it is often difficult to transfer to another person by means of writing it down or verbalising.

Validation

To check or approve the accuracy of raw observations during the data analysis process.

Verification

Ensures that the originally observed issue has been successfully institutionalised as a mandated change and has been ingrained as part of the organisation norm.

Wicked problem

These problems share a range of characteristics – they go beyond the capacity of any one organisation to understand and respond to, and there is often disagreement about the causes of the problems and the best way to tackle them.

Also refer to the Australian Disaster Resilience Glossary on the AIDR Knowledge Hub for an integrated online glossary of disaster resilience and emergency management terms and definition: **knowledge.aidr.org.au/glossary**

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