

Disaster Risk Management Guidelines

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Summary The NSW Health Disaster Risk Management Guidelines have been developed to outline the disaster risk management process with structured and step-by-step approaches. The Guidelines are provided as a tool to enhance understanding of risk management integration linking to existing corporate planning and risk assessment within Area Health Services.

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Applies to Area Health Services/Chief Executive Governed Statutory Health Corporation, Board Governed Statutory Health Corporations, NSW Ambulance Service, NSW Dept of Health

Audience CEs, AHS Functional Area Coordinators, Disaster Coordinators, all staff in disaster risk management

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DISASTER RISK MANAGEMENT GUIDELINES

Purpose

The NSW Health Disaster Risk Management Guidelines provide a structured and step-by-step approach to the disaster risk management process for Area Health Services, linking existing corporate planning and risk assessments.

Recommended standards

This document follows the AS/NZS Standard 4360:2004 Risk management and its companion document, Risk Management Guidelines.

This document adopts the principles from the Draft NSW Health Risk Management Policy_6 August 2008 (The Risk Management Corporate Governance and Risk Management Branch, Department of Health) and the Draft National Emergency Risk Assessment Guidelines, July 2008 (The Australian Emergency Management Committee).

The guidelines will be reviewed and updated following the finalisation of the above draft documents.

Implementation

The guidelines are intended for use as a tool to enhance understanding of risk management within Area Health Services as per target one under 2008-09 Chief Executive Services Agreement.

Revision history

Doc. Number	Approved by	Amendment notes
No. GL2009_004	Director, NSW Health Counter Disaster Unit, HSFACs Group	New Guideline issued

List of attachments

1. NSW Health Disaster Risk Management Guidelines

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GLOSSARY

Consequence	The outcome or impact of an event, usually expressed in terms of physical, personal or financial impact.
Control	An existing process, policy, guideline, practice or other action that minimizes negative or enhances positive opportunities risk.
Emergency	An event, actual, or imminent, which endangers or threatens to endanger life, property or the environment, and which requires a significant and coordinated response.
Event	Occurrence of a particular set of circumstances.
Hazard	A source of potential harm or a situation with a potential to cause loss.
Mitigation	Measures taken in advance of a disaster aimed at decreasing or eliminating its impact on society and environment.
Preparedness	Arrangements to ensure that, should an emergency occur, all those resources and services which are needed to cope with the effects can be efficiently mobilised and deployed (source: SERM Act).
Prevention	Regulatory and physical measures to ensure that emergencies are prevented or their effects mitigated (source: SERM Act).
Response	Actions taken in participation of, during, and immediately after, an emergency to ensure its effects are minimised and that people affected are given immediate relief and support (source: SERM Act).
Recovery	The coordinated process of supporting emergency-affected communities in the reconstruction of the physical infrastructure and restoration of emotional, social, economic and physical wellbeing (source: SERM Act).
Risk	The chance of something happening that will have an impact on objectives.
Risk Management Process	The systematic application of management policies, procedures and practices to the tasks of communicating, establishing the context, identifying, analysing, evaluating, treating, monitoring and reviewing risk (see AS/NZS 4360:2004).
Stakeholders	Those people and organisations who may affect, be affected by or perceive themselves to be affected by a decision, activity or risk.

ACRONYMS

AS/NZS Standard	Australian/New Zealand Standard
COAG	The Council of Australian Governments
IT	Information Technology
NSWFB	NSW Fire Brigade
NSWRFS	NSW Rural Fire Services
RTA	Roads and Traffic Authority
SES	State Emergency Services
SERM Act	the State Emergency Rescue & Management Act

1. INTRODUCTION

NSW Health recognises that risk management is an integral part of good management practice and has issued the NSW Health Risk Management Framework¹. In addition the National Emergency Risk Assessment Guidelines² have been issued by the Australian Emergency Management Committee (AEMC).

The NSW Health Disaster Risk Management Guidelines have been issued in accordance with the NSW Health Risk Management Framework and are aligned with the national guidelines. They are provided as a tool to enhance understanding of risk management within Area Health Services; a target under Area Disaster Preparedness Service Agreements³.

Risk management is a structured and coordinated approach that allows early identification of any risk that might pose a significant impact or consequence to health services. The consequence might hinder or compromise core health services delivery to the community.

Identifying the potential risk allows health services:

- to develop, review or modify procedures to reduce the potential consequences of an incident or disaster;
- to make effective decision making; and
- to improve the effectiveness and efficiency of service procedures.

2. RISK MANAGEMENT PROCESS

This section provides an overview of the risk management process.

Risks exist in all aspects of Health service business activities and can potentially prevent the Service from achieving its goals.

The Risk Management Process provides a structured methodology to ensure levels of risk and uncertainty are identified and properly managed. It provides the structure to identify possible risks, the manner in which the risks can be contained and the likely cost of mitigation strategies.

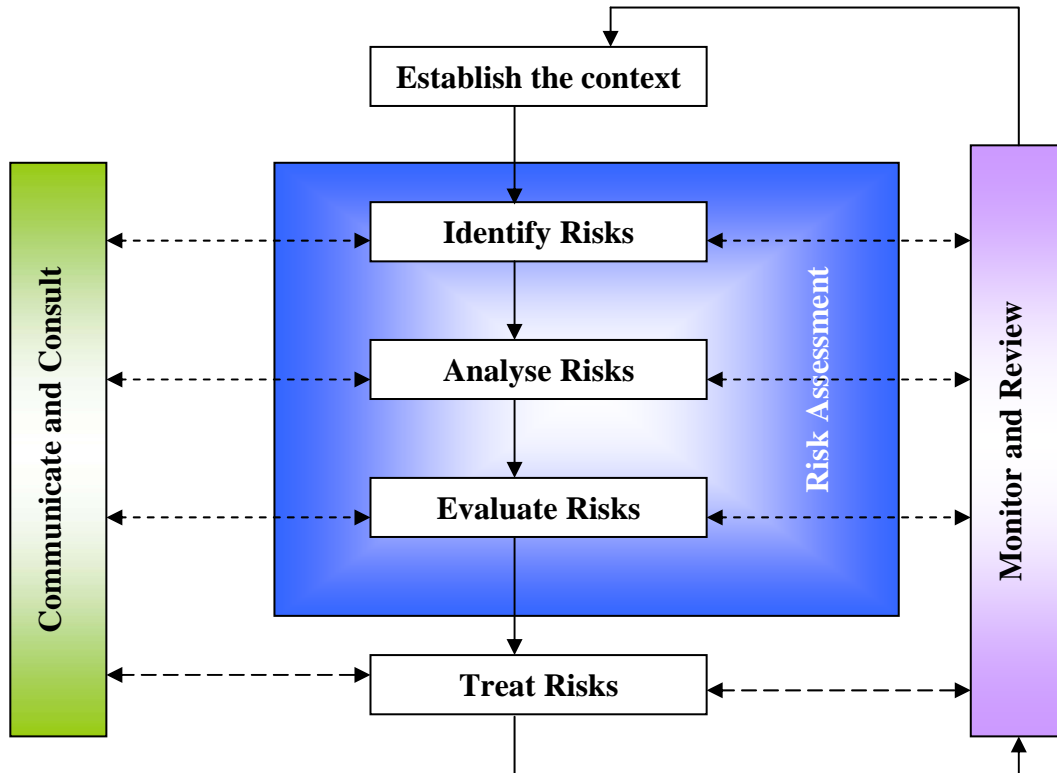
¹ Risk Management Corporate Governance & Risk Management Department of Health (2008). Draft NSW Health Risk Management Policy_6 August 2008

² The Australian Emergency Management Committee (2008). Draft National Emergency Risk Assessment Guidelines, July 2008.

³ Refer to target 1, 2008-09 Chief Executive Service Agreement

The following diagram outlines the steps of the Risk Management Process:

- Step 1: Communicate and Consult
- Step 2: Establish the context
- Step 3: Identify risks
- Step 4: Analyse risks
- Step 5: Evaluate risks
- Step 6: Treat risks
- Step 7: Monitor and review risks



Source: AS/NZS 4360:2004 page 9

3. COMMUNICATE AND CONSULT

Communication and consultation are important at each step of the Risk Management Process. External and internal stakeholders should be identified at the earliest stage of the process. This will ensure the identified risks are understood, properly assessed to enable effective risk mitigation or treatment strategies to be developed.

Within the NSW emergency management system there are regular communication forums between key external stakeholders and Area Health Services. This includes the Health Services Functional Area Coordinators (HSFACs) and representatives of the Area Health Services as deemed appropriate by the HSFAC. These forums include State, District and Local Emergency Management Committees who regularly conduct community-based risk assessments which provide valuable technical advice on specific identified risks (examples see section 6).

Examples of External and Internal Stakeholders:

External Stakeholders		Internal Stakeholders	
Categories	Examples	Categories	Examples
Emergency Services	NSWFB, NSW Police, SES, NSWRFSS	Corporate Services	Asset management, Risk management, IT, Finance...etc
Utility Services	Telstra, Energy Australia, Water	Clinical Operations	Intensive care, emergency care...etc
Transport	Ministry of Transport, RTA	Communication	Media (Health information)
Welfare	Department of Community Services	Executive Support	Clinical Governance
Weather	Bureau of Meteorology	Workforce	Human Resources, Education and training...etc
Animal	Department of Primary Industry	Population Health and Strategic Direction	Information Management, Population Health...etc
Other government agencies	Department of Commence, Department of local governments authorities, WorkCover	Nursing and Midwifery	Nursing resources and disaster planning...etc
Other identified external agencies that are involved in risk management.		Other operational units that are involved in risk management.	

4. ESTABLISH CONTEXT

4.1 External Context

In August 2001, The Council of Australian Governments (COAG) commissioned a review of Australia's approach to dealing with natural disasters – mitigation to guard against disasters, response during a disaster event, and post-disaster relief and recovery.

The report: *Natural Disasters in Australia: Reforming mitigation, relief and recovery* recommended a systematic and widespread national process of disaster risk assessments and, most importantly, a fundamental shift in focus towards cost-effective, evidence-based disaster mitigation. This represents an historic move beyond disaster response and recovery, towards preparedness and mitigation.

In New South Wales, emergency management operates as described in the State Emergency Rescue & Management (SERM) Act. The Government acknowledges the inevitable nature of emergencies and their potentially significant social, economic and environmental consequences. It provides the legislative basis for the preparation of a State Disaster Plan (Displan) to record the agreed management arrangements for coordination of emergency preparedness, response and recovery operations.

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Under Displan, NSW Health is the combat agency for all Health Emergencies within NSW. This particularly applies to human infectious disease emergencies from whatever cause.

The role of NSW Health includes:

- the mobilisation of health resources to the emergency site or sites and the initiation of prioritised patient management;
- the provision of coordinated hospital and medical response to emergencies;
- the provision of mental health services to victims, emergency workers, and the communities affected by emergencies;
- the provision of public health services to prevent, prepare for, respond to and recover from emergencies.
- a coordinated health communications response for prevention, preparation, emergency response and subsequent recovery from the impacts.

4.2 Internal Context

Establishing the internal organisational context allows health services to create organisational resilience to the impacts of disasters.

The first step in completing a Risk Assessment is to set an organisational context for the risk, including the consideration of:

- Business environment
- Organisational goals
- Corporate objectives
- Business strategies

This helps to identify the organisation's strengths, weaknesses, opportunities and threats.

To establish risk evaluation criteria, the following issues need to be considered for the identified risks:

- chance of occurrence
- type of response required
- human impact
- property impact
- environmental impact
- business impact
- existing preparedness arrangements
- internal resources
- external resources

5. IDENTIFY RISK

The Australian/New Zealand Standard (AS/NZS) 4360:2004 - Risk management defines risk as the chance of something happening that will have an impact on objectives. Risk is often specified in terms of an event or circumstance and the consequences that may flow from it.

In the context of health services, risk refers to any factor (or threat) that may affect the operational functions of the Health service in terms of delivery of its outputs and securing of outcomes, or adverse effects on resourcing, time cost and quality.

Before risks can be properly managed, they need to be identified. The following are examples of sources of risk.

Sources of Risk	
Natural Events	
Biological - Infectious Disease, water contamination, food contamination	Hurricane
Drought	Landslide
Earthquake	Lightning Storm
Extreme Heat/Cold	Snow/Ice/Hail
Fire (forest, range, urban)	Tsunami
Flood/Wind driven water	Windstorm/Tropical Storm
Technological/Industrial Events	
Building/Structure Collapse	Fuel/Resource Shortages
Business Interruption	Hazardous Material Releases
Dam/Levee Failure	Power/Utility Failure
Explosions/Fire	Radiological Accidents
Extreme Air Pollution	Transportation Accidents
Financial Collapse	
Civil/Political Events	
Public Disorder	Terrorism

6. ANALYSE RISK

Once the risks are identified, they need to be analysed to determine consequences for the health system, likelihood and hence the level of risk. It is understood that identifying all possible risks to the community is not the responsibility of the health system but it does need to be aware of potential risks that may lead to a disaster surge on health facilities or impact the operation of those facilities.

Determine the existing controls and analysing risks in terms of consequence and likelihood in the context of those controls. The analysis should consider the range of potential consequences and how likely those consequences are to occur. Consequence and likelihood may be combined to produce an estimated level of risk.

6.1 Risk Likelihood & Risk Rating

<p>Issues to consider for chance of occurrence include, but are not limited to:</p> <ol style="list-style-type: none"> 1 Known risk 2 Historical data 3 Manufacturer/vendor statistics
<p>Issues to consider for response include, but are not limited to:</p> <ol style="list-style-type: none"> 1 Time to marshal an on-scene response 2 Scope of response capability 3 Historical evaluation of response success

Likelihood Rating

Likelihood of something happening; used as a description of probability or frequency, and can be considered on a five-point scale.

Probability / Likelihood Rating	Descriptor	Description
1	Rare	The event is not expected to occur but should not be discounted.
2	Unlikely	The event may occur under unusual circumstances.
3	Possible	The event could occur.
4	Likely	The event will probably occur under most circumstances.
5	Almost certain	The event is expected to occur or is occurring.

It is important to incorporate any historical data on known events to provide more definite descriptions of probability (or frequency).

For example, some areas may have a known risk of flood with the chance of occurrence at 10 years, 30 years and 50 years.

6.2 Risk Consequence & Consequence Rating

Risk Consequence
<p>Issues to consider for human impact include, but are not limited to:</p> <ol style="list-style-type: none"> 1 Potential for staff death or injury 2 Potential for public death or injury
<p>Issues to consider for property impact include, but are not limited to:</p> <ol style="list-style-type: none"> 1 Cost to replace 2 Cost to set up temporary replacement 3 Cost to repair 4 Time to recover
<p>Issues to consider for environmental impact include, but are not limited to:</p> <ol style="list-style-type: none"> 1 Potential water contamination 2 Potential air pollution
<p>Issues to consider for business impact include, but are not limited to:</p> <ol style="list-style-type: none"> 1 Business interruption 2 Employees unable to report to work 3 Customers unable to reach facility 4 Company in violation of contractual agreements 5 Imposition of fines and penalties or legal costs 6 Interruption of critical supplies 7 Interruption of product distribution 8 Reputation and public image 9 Financial impact/burden

Consequence Rating		
The consequences if it does happen; the negative or positive outcomes of an event, loss, injury, disadvantage or gain. Consequences are considered on a five-point scale.		
Consequence Rating	Descriptor	Description
1	Insignificant	Minimal consequence.
2	Minor	Could threaten an element of function.
3	Moderate	Requires significant adjustment to over all.
4	Major	Would threaten organisations objectives.
5	Catastrophic	Would stop the achievement of organisation's goals / objectives.

6.3 Existing Controls

Issues to consider for prevention include, but are not limited to:
1 Building codes compliance
2 Insurance
Issues to consider for preparedness include, but are not limited to:
1 Status of current plans
2 Frequency of drills
3 Training status
4 Insurance
5 Availability of alternate sources for critical supplies/services
Issues to consider for internal resources include, but are not limited to:
1 Types of supplies on hand/will they meet need?
2 Volume of supplies on hand/will they meet need?
3 Staff availability
4 Coordination & Communication capability
5 Availability of back-up systems
6 Internal resources ability to withstand disasters/survivability
Issues to consider for external resources include, but are not limited to:
1 Types of agreements with community agencies/drills?
2 Coordination with local and state agencies
3 Coordination with proximal health care facilities
4 Coordination with treatment specific facilities
5 Community resources

6. 4 Determine Risk Level

Risk analysis determines the level of risk and ratings from highest to lowest priority for mitigation action, based on the potential impact if the risk is realised. This involves a review of the initial risk level determined from the likelihood and consequences, in the overall operational context.

Likelihood		Consequence				
		1	2	3	4	5
		Insignificant	Minor	Moderate	Major	Catastrophic
5	Almost certain	Medium	High	High	Extreme	Extreme
4	Likely	Medium	Medium	High	High	Extreme
3	Possible	Low	Medium	High	High	High
2	Unlikely	Low	Low	Medium	Medium	High
1	Rare	Low	Low	Medium	Medium	High

7. EVALUATE RISK

Compare estimated levels of risk against the pre-established criteria. This enables risks to be ranked so as to identify management priorities.

If the levels of risk established are low, then risks may fall into an acceptable category and treatment may not be required. Treatment is required where a risk results in a Medium level rating.

The following table provides an example of risk identification and assessment to determine the risk level rating.

Source of Risk	Chance of Occurrence	Speed of Onset	Duration of Impact	Impact on Property	Impact on Environment	Impact on People	Pre-Impact Planning	Awareness Level	Resources Capability	Average Mean
Natural Events										
Biological	4	2	2	1	1	5	3	4	2	2.7
Drought										0.0
Earthquake	4	5	5	5	4	4	2	4	3	4.0
Extreme Heat/Cold										0.0
Fire (forest, range, urban)										0.0
Flood/Wind driven water	4	4	3	3	3	1	3	3	3	3.0
Hurricane										0.0
Landslide										0.0

(Reference: FEMA Risk Assessment tool)

- Score in each of the cells for each relevant hazard based on a scale of 0 to 5 - with 5 being the highest. The more you have investigated and thought about impact and capability elements, the more accurate your assessment will be.
- Impact: Based on “worst-case scenario” - impact on people, property, infrastructure & business should worst-case event occur.

KEY	
Extreme Risk:	Greater than 4.0
High Risk:	3.0 to 4.0
Medium Risk:	2.0 to 3.0
Low Risk:	Less than 2

8. TREAT RISK

Once the Risk Assessment is completed and risk is identified, it is important to review the effectiveness of existing risk mitigation strategies before the decision to be made to whether or not to treat the identified risk.

Identified Risks	Analysis & Evaluation			Existing controls described & evaluated		
Risk Statement (e.g. description of each specific risk scenario with regard to people, information, physical assets, finances, reputation, and any other "things you value")	Consequence (1, 2, 3, 4, or 5)	Likelihood (1, 2, 3, 4, or 5)	Risk level (L, M, H or E)	What we are doing now to manage this risk.	Effectiveness of our strategies (N = Not generally applied or only applied in isolated situations for example in less than 20% of cases; P = Partially applied, not usually documented or applied in less than 50% of cases)	Accept Risk (Yes or No)
Record by rows and cells as necessary.			E			No
			L			Yes

If the existing risk mitigation is adequate, the risk will only need to be monitored and review within an agreed timeframe.

For example, will the identified risk (impact of flood on surrounding community and related transfers to hospital) be mitigated and managed through the existing controls/plans?

If the answer is no, then further actions will need to be developed to treat or reduce the risk to the acceptable level (desired level of "residual" risk).

Identified Risks	Analysis & Evaluation			Existing controls described & evaluated		Further Actions			
Risk Statement (e.g. description of each specific risk scenario with regard to people, information, physical assets, finances, reputation, and any other "things you value")	Consequence (1, 2, 3, 4, or 5 - see Sheet 1)	Likelihood (A, B, C, D or E - see Sheet 1)	Risk level (L, M, H or VH - see Sheet 1)	What we are doing now to manage this risk.	Effectiveness of our strategies (N = Not generally applied or only applied in isolated situations for example in less than 20% of cases; P = Partially applied, not usually documented or applied in less than 50% of cas	Accept Risk (Yes or No)	Further Action Needed & Opportunities for improvement - Include milestone(s) & target date(s)	Assigned To	Revised Risk level (L, M, H or VH)
Record by rows and cells as necessary.			E			No			E
			M			No			M

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Once the level of risk has been determined the following table may be of use in determining when to act to intervene and institute the control measures.

Extreme	Act immediately to mitigate the risk. Either eliminate, substitute or implement engineering control measures.
High	Act immediately to mitigate the risk. Either eliminate, substitute or implement engineering control measures. If these controls are not immediately accessible, set a timeframe for their implementation and establish interim risk reduction strategies for the period of the set timeframe.
Medium	Take reasonable steps to mitigate the risk. Until elimination, substitution or engineering controls can be implemented, institute administrative or personal protective equipment controls. These "lower level" controls must not be considered permanent solutions.
Low	Take reasonable steps to mitigate and monitor the risk. Institute permanent controls in the long term. Permanent controls may be administrative in nature if the hazard has low frequency, rare likelihood and insignificant consequence.

The "Hierarchy of Control" can be useful - as can other heuristic devices such as "Prevention, Preparedness, Response & Recovery" or "Engineering, Education, Encouragement, & Enforcement". As a general approach, a "mix of interventions" usually provides the best result.

Elimination	Eliminate the hazard.
Substitution	Provide an alternative that is capable of performing the same task and is safer to use.
Engineering Controls	Provide or construct a physical barrier or guard.
Administrative Controls	Develop policies, procedures practices and guidelines, in consultation with employees, to mitigate the risk. Provide training, instruction and supervision about the hazard.
Personal Protective Equipment	Personal equipment designed to protect the individual from the hazard.

9. DOCUMENT RISK

Each stage of the risk management process should be documented appropriately. A risk register should be developed and treatment decision and implementation timeframe documented. This will avoid confusion, misunderstanding and provides consistency of the process for re-assessment of the risk and control measures.

10. NEXT STEPS

The success of risk management largely depends on the support and sponsorship of the senior manager and executive team. Management of risk should be integrated into the management system of an organisation.

As per the Disaster Preparedness Performance Agreement between NSW Health and Area Health Services, this guideline addresses disaster preparedness aspects of State Health Plan Strategic Direction 7 – ‘Be ready for new risks and opportunities’⁶.

The focus of the Agreement is to ensure Health Services:

- a) enhance understanding of local risk management issues;
- b) build their capacity to manage a significant surge in critical patients;
- c) test personnel, plans and capabilities; and
- d) maintain equipment for use during a major incident or disaster.

It is important that Area Health Services engage the risk management process to ensure the above objectives are achieved.

11. REFERENCES

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