

Research - Adapting Hospitals to Climate Change-Generated Extreme Weather Events (presentation)

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LEARNING TO ADAPT – 30 April 2010

Research – Adapting Hospitals to climate change-generated extreme weather events

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ARC Linkage Project LP0884116

Project Title: Assessing the adaptive capacity of hospital facilities to cope with climate-related extreme weather events: a risk management approach

Research Question: what are the risks posed by hospital facilities to effective healthcare delivery during extreme weather events?

Partners: NSW Health, SA Health, Qld Health and NZ MOH

Budget: Total = \$~900k

Stage 1: 2009 – vulnerability assessment – 4 case studies

Stage 2: 2010 – assess adaptive capacity / develop adaptation strategies

Stage 3: 2011 – Action Plan + evidence base for design and adaptation strategies → AusHFG

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Case Studies – extreme weather events:

NSW – Coffs Harbour Hospital – flash flooding (creek)

Qld – Cairns Base Hospital - cyclone

SA – Ceduna MPS - heatwave

NZ – Whangerei Hospital – Northland (flooding from river /extreme rain)

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Case Studies – extreme weather event:

NSW – Coffs Harbour Hospital – flooding



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Case Studies – extreme weather event:

○ NSW – Coffs Harbour Hospital – flooding



Nov 2009

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**Case Studies – extreme weather event: NSW – Coffs
Harbour Hospital – flooding)**



Nov 2009

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**Case Studies – extreme weather event: NSW – Coffs
Harbour Hospital – flooding**



Nov 2009

ARC Linkage Project LP0884116

Case Studies – extreme weather event: NSW – Coffs

○ Harbour Hospital – flooding



Nov 2009

ARC Linkage Project LP0884116

Case Studies – extreme weather event: NSW – Coffs

○ Harbour Hospital – flooding



31 Mar 2009

ARC Linkage Project LP0884116

Case Studies – extreme weather event: NSW – Coffs

○ Harbour Hospital – flooding



31 Mar 2009

ARC Linkage Project LP0884116

Case Studies – extreme weather event: NSW – Coffs

○ Harbour Hospital – flooding



31 Mar 2009

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NSW Case Study – extreme weather event:

Coffs Harbour Hospital – flooding (flash – creek)

Selected due to:

- Past records of extreme weather
- Size and age of hospital
- Total population dependencies
- Future climate projections

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NSW Case Study – extreme weather event: Coffs Harbour

Stage #1: Vulnerability Analysis

Risk Management Workshop conducted using ROMS
(www.risk-opportunity.com).

“Risk and Opportunity Management Software”

- Structured approach / international stds of risk management
- Identify and prioritise stakeholder objectives
- Identify risks and opportunities
- Assess and prioritise
- Develop Action Plan to address (next stages of project)

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NSW Case Study – extreme weather event: Coffs Harbour

Focus group of key stakeholders

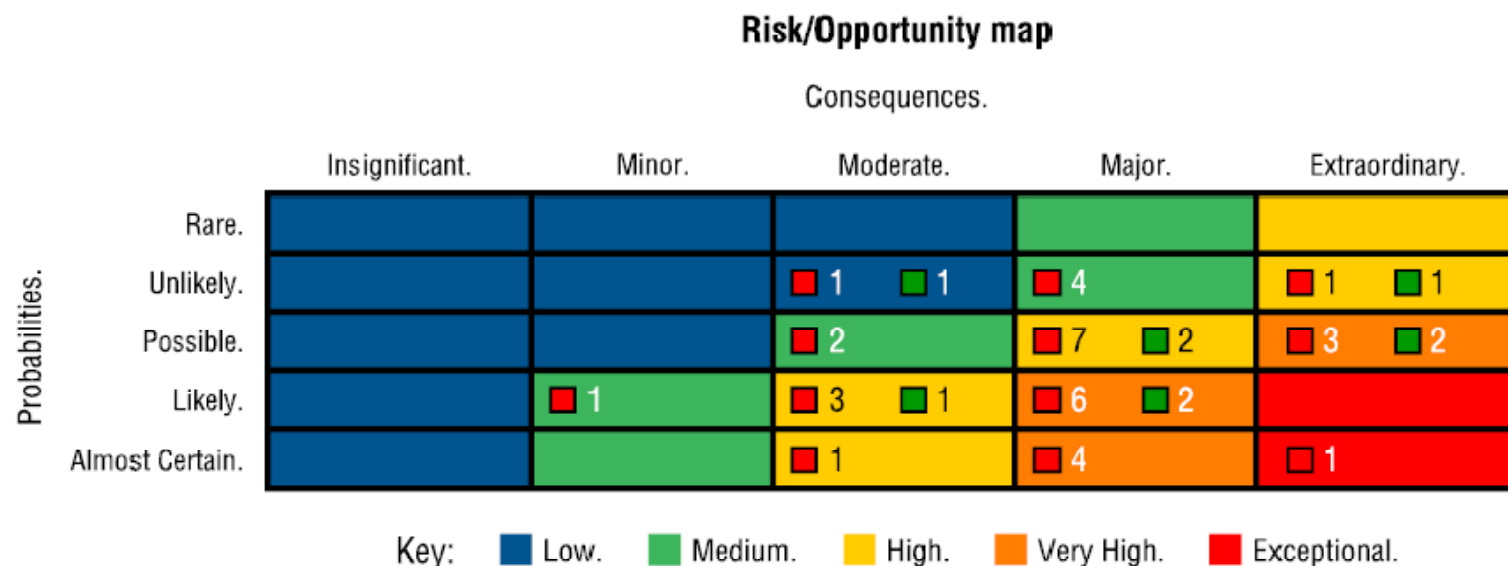
Ability to implement project objectives

| | | Low | High |
|---|------|--|--|
| Objectives affected by project outcomes | Low | Minor Stakeholders All Support Services (e.g. Cleaners, Kitchen, etc) Trade Services Other Government Department Laboratories / pathology | Important Stakeholders Utility (essential) services – power, water, gas Civil Defence and emergency service - (SES) Public Works Dept (State level government dept) Security Patients and community (indigenous, socially disadvantaged, aged, disabled, young, LSE) Staff / Services |
| | High | Major Stakeholders Local Government Designers Union | Key Stakeholders Director Corporate Services Director of Nursing Facilities Manager including IT Emergency Management Personnel Director of Medical Services Ambulance / emergency services Corporate Asset Manager Quality and Safety Management Public Relations Personnel |

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NSW Case Study – extreme weather event: Coffs Harbour

ROMS Step 5 Output – Assess and Prioritise

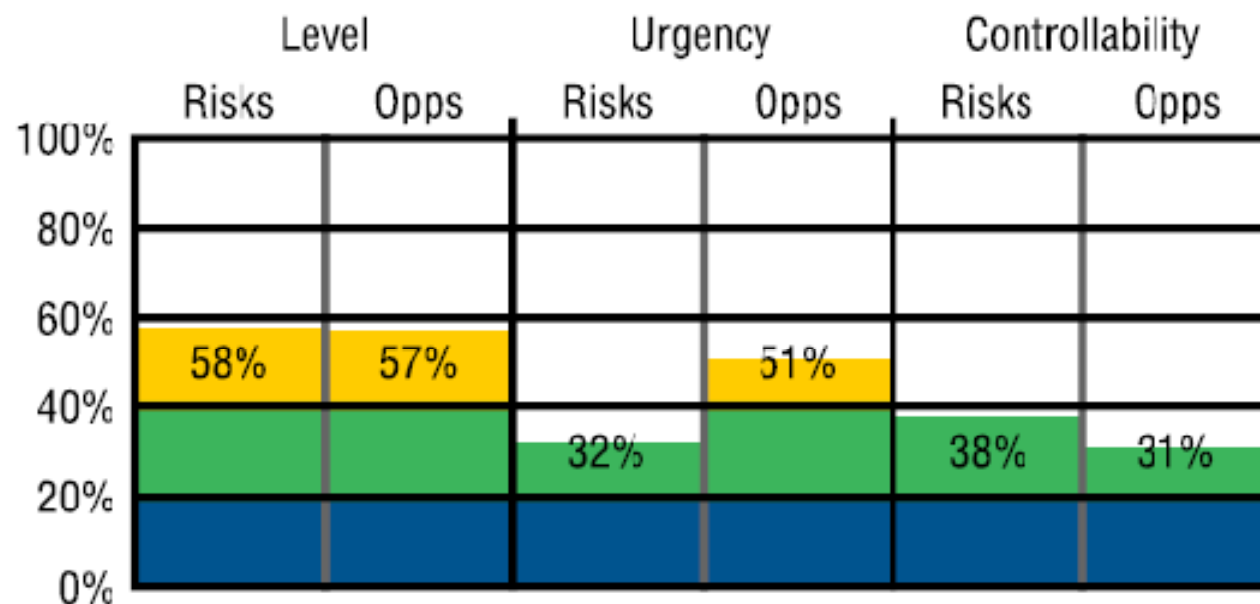


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NSW Case Study – extreme weather event: Coffs Harbour

ROMS Step 5 Output – Assess and Prioritise

Risk/Opportunity calculator



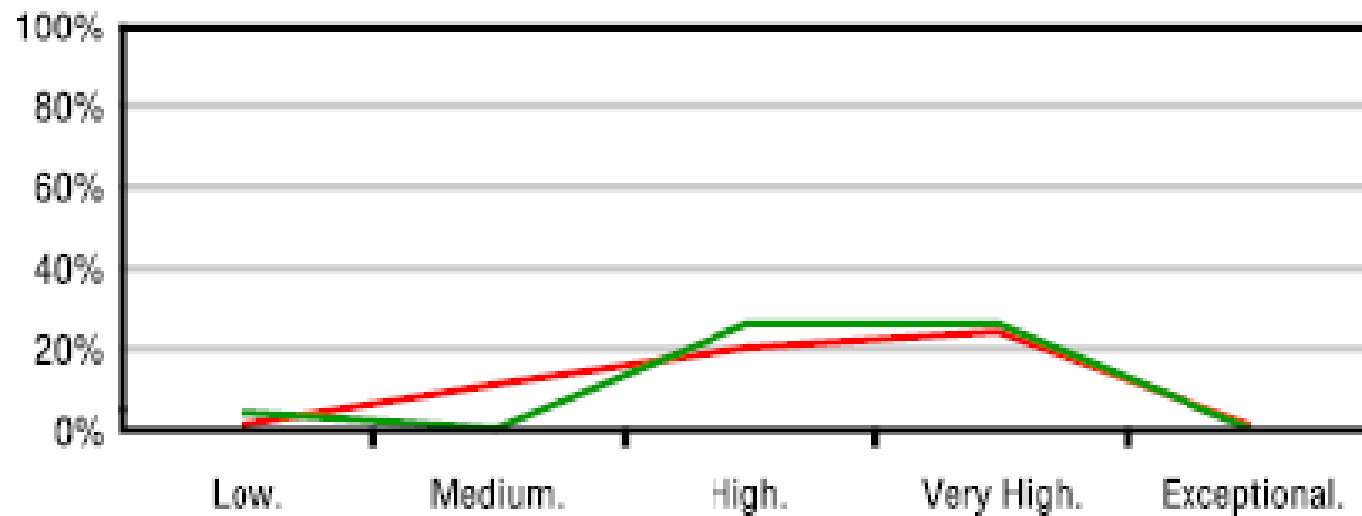
Key: Low. Medium. High. Very High. Exceptional.

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NSW Case Study – extreme weather event: Coffs Harbour

ROMS Step 5 Output – Assess and Prioritise

Risk/Opportunity profile



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Conclusions

Overall goal = maintaining continuity of service delivery during and extreme weather event

4 key areas associated with vulnerability:

1. Availability of essential building services - supported by
2. Ensuring the physical integrity of the hospital
3. Effective inter-agency communication
4. Maintaining access to the hospital for staff and patients

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NSW Case Study – extreme weather event: Coffs Harbour

Next Steps

Explore areas of vulnerability further and adaptive capacity in another workshop in August 2010

Develop an action plan to address issues identified

Develop an evidence base regarding design and facilities management adaptation strategies for hospitals faced with increasing exposure to floods and other extreme weather events.

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