



# Between the devil and the deep blue sea: patient safety and risk in hospitals

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“The Power of Us”

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# Background - research partners

- The Centre for Clinical Governance Research, UNSW
- Australian Council on Healthcare Standards
- Ramsay Health Care
- Australian Research Council (Linkage Grant)



# Background - research team

- Professor Jeffrey Braithwaite
- Dr David Greenfield
- Dr Marjorie Pawsey
- Ms Jo Travaglia
- The ARC Linkage Team:

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# Background - the Centre

*The Centre for Clinical Governance Research undertakes strategic research, evaluations and research-based projects of national and international standing with a core interest to investigate health sector issues of policy, culture, systems, governance and leadership.*

<http://www.med.unsw.edu.au/medweb.nsf/page/ClinGov> About



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# Background – the issues

There are two key issues in this paper:

- First, what does the patient safety literature tell us and how can stakeholders respond?
- Second, how does accreditation fit in to this model and can it help, including can it help mitigate risk?



# Background – our focus

Overall, we are interested in exploring, in the context of *The power of us*:

- Do any variables have power here?
- Can we respond effectively?
- What can we do about risk?
- What can help us tackle this **‘wicked problem’**? [Rittel and Webber, 1973]



# Background - some definitions

Patient safety: “a type of process or structure whose application reduces the **probability of adverse events** resulting from exposure to the health care system across a range of diseases and procedures” [Shojania et al, 2002]



# Background - some definitions

**Risk: “a chance or potentiality for loss or harm, a cognitive recognition involving thought and perception about self and/or others, and a decision-making process based on probability or a weighing of the possibilities or potentialities”** [Shattell, 2004]



# Background - some definitions

Accreditation: “a formal process by which a recognised body, usually a non-governmental organisation, assesses and recognises that **a health care organisation meets applicable pre-determined and published standards**” [Rooney and van Ostenberg, 1999]



# Introduction

- The general belief is hospitals are spaces to go to get treated
- But they are simultaneous places of great risk
- The research evidence for this is scattered across a vast sea of journals and books



# Introduction

- Fishing amongst these sources reveals commonly occurring:
  - risk specimens
  - strange species of errors
  - many unusual data items
- Some are on the ocean's surface and others deep below ...



# Methods

- Let's use some deep sea trawling methods
- We will examine and haul up for inspection and sorting a range of data items
- They are both fascinating and uncomfortable
- And show how risky or safe things are for patients



# Methods

- The data are drawn from a range of disparate studies and reports from various countries
- But for the most part they are the most recent or representative data for the particular domain of hospital activity
- We have extrapolated the data to a typical, hypothesised teaching hospital



# Results: first, some context

<b>Your chances of:</b>	
<b>Matching 3 numbers in international Lotto</b>	<b>1 : 160</b>
<b>3 numbers plus the POWERBALL</b>	<b>1 : 7,049</b>
<b>4 numbers</b>	<b>1 : 6,248</b>
<b>4 numbers plus the POWERBALL</b>	<b>1 : 274,896</b>
<b>5 numbers</b>	<b>1 : 1,249,526</b>
<b>5 numbers plus the POWERBALL</b>	<b>1 : 54,979,155</b>

Source: [http://www.allottery.com/powerball\\_lottery\\_results.php](http://www.allottery.com/powerball_lottery_results.php)



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# Results

## Your chances of:

Experiencing an adverse event in an intensive care unit [1]	1 : 2
Being injured if you fall in hospital [2]	1 : 2
An adverse event in ICU being serious enough to cause death or disability [3]	1 : 10
Experiencing an adverse event or near miss in hospital [4]	1 : 10
Experiencing a complication from a medication or drug [5]	1 : 20
Developing a hospital acquired infection [6]	1 : 30

[1] Andrews et al (1997); [2] Schwendimann et al (2006); [3] Andrews et al (1997); [4] CCGR data, average across studies in Australia, Canada, Denmark, New Zealand, UK and USA; [5] Andrews et al (1997); [6] Pittet (2005);



# Results

## Your chances of:

Being harmed while in hospital [7]	1 : 300
Dying from a medication error in hospital (as an inpatient) [8]	1 : 854
Having a retained foreign body after surgery (intra-abdominal) [9]	1 : 1,000
Being subjected to wrong site surgery [10]	1 : 112,999
Dying as a result of anaesthesia [11]	1 : 250,000
Contracting HIV as a result of a screened blood transfusion [12]	1 : 2,600,000

[7] CCGR data, average across studies in Australia, Canada, Denmark, New Zealand, UK and USA; [8] Kohn et al (1999); [9] Gawande et al (2003); [10] Kwann et al (2006); [11] JCAHO (1998); [12] Lackritz et al (1995).



# Results – applied

Assume a 700 bed tertiary referral hospital:

- 5,000 staff
- 75,000 inpatients annually
- 50,000 of these are same day cases
- complex casemix
- lots of teaching and research
- a busy, productive place



# Results – applied

The results applied here would mean:

- 7,500 patients would experience an adverse event - some detectable, some not noticeable or attributable
- many would be infections, falls and medication errors
- some 1,500 patients would suffer a major disability
- and 350 would die from iatrogenia



# Results – applied

- A patient would suffer from wrong site surgery perhaps every 2 years or so
- Someone would die as a result of anaesthesia on average every 5 years or so
- There would be other more exotic examples of adverse events, depending on specialty



# Discussion

- Runciman's system of principal natural categories [PNCs] [Runciman et al, 2002] can do for errors what Linnaeus' classification system did for describing species in the sea [and of course on land and in the air]
- Commonly occurring PNCs reflect high levels of risk
- More exotic categories only occur intermittently



# Discussion

- We need very resilient and vigilant organisations which can cope with the unexpected as well as try to tackle the commonly occurring [Corbett and Braithwaite, forthcoming]
- What might these look like?
- Recent research of ours is shining a light on this



# Discussion

There are increasing grounds for believing that organisations will be safer and less risky if they have:

- a generally inclusive **organisational climate** [Svyantek and Bott, 2004]
- effective **leadership** [Health Foundation, 2004]
- a positive **culture** and sub-cultures [Boan and Funderburk, 2003]
- an approach which **involves patients** in care processes [Health Foundation, 2004]



# Discussion

- There are increasing grounds for also believing that organisations will be safer and less risky if they have:
  - **superior accreditation results** [Chen et al, 2003]
  - **better than average performance on clinical indicators** [Collopy, 2000]



# Discussion

- What do you think based on your experience?
- If you have an organisation like this, will it be more resilient and vigilant, and hence safer and less risky?
- Our research increasingly suggests so  
[Braithwaite et al, 2006]
- Look at the results of a study, not yet published









# Discussion

- This is a three year ARC grant which conducted four major studies of accreditation
- One major study examined 19 randomly sampled health care organisations looking at accreditation performance, organisational climate, organisational culture, consumer involvement, leadership, and clinical indicator performance



# Discussion

*Relationships between accreditation and other variables*

	<b>A</b>	<b>Culture</b>	<b>Climate</b>	<b>Consumer</b>	<b>Leadership</b>	<b>CI</b>
<b>A</b>	1.00	<b>0.618***</b>	<b>0.732*</b>	0.242	<b>0.616***</b>	<b>0.418*</b>
<b>p (2-tailed)</b>		<b>0.005</b>	<b>0.12</b>	0.32	<b>0.005</b>	<b>0.12</b>
<b>n</b>	19	19	19	19	19	16
<b>Summary of relationships</b>						



# Conclusion

- Acute settings are dangerous places
- They are the modern day equivalent of shark infested waters
- It has proven very hard to make progress in mitigating errors and adverse events
- We need to have organisational and team responses to the wicked problem of patient safety



# Conclusion

- We are illuminating the variables which predict positive performance
  - Accreditation under EQuIP is integral to this, and is making a contribution
  - It is associated positively with a good organisational climate, effective culture, sound leadership and comparatively better performance on clinical indicators



# Conclusion

- It is part of what we are thinking more and more is needed to distinguish resilient organisations [ones able to cope with commonly occurring adverse events, and infrequent, less readily predicable AEs]
- And vigilant organisations [ones which are alert and watchful]



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