



A  
C  
E  
R  
H

AUSTRALIAN CENTRE  
FOR  
ECONOMIC RESEARCH  
ON HEALTH

## Keynote Roundtable

Key issues associated with the creation of  
national hospital performance indicators

Jim Butler  
ACERH (ANU)

A presentation to the Hospital Performance Measurement Forum organised by  
Informa Australia, Sydney, 10-11 December 2009



THE UNIVERSITY OF  
WESTERN AUSTRALIA



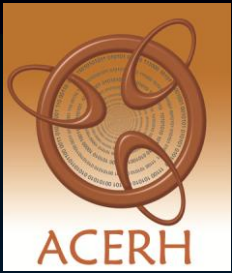
THE AUSTRALIAN NATIONAL UNIVERSITY





# Overview

- **Background**
- **Simplified framework**
- **Importance of benchmarks**
- **Productivity Commission**
- **Conclusions**



# Background

- Increasing emphasis on Health System Performance Indicators in last 10 years
- Australian Institute of Health and Welfare first reported Hospital Performance Indicators in *Australian Hospital Statistics 1998-99* (16 pages)
- In latest issue (2007-08), same chapter is 45 pages in length
- Key issue in Commonwealth/State health care negotiations and COAG discussions



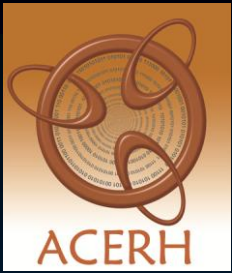
National Health Information Standards and Statistics  
Committee (NHISSC)

of the

Australian Health Ministers Advisory Council (AHMAC)

generated the latest reporting framework in 2008

→ Health System Performance Domain



## The National Health Performance Framework: Health System Performance Domain

### **Effectiveness**

Care achieves desired outcome

### **Continuity of care**

Uninterrupted, coordinated care

### **Safety**

Avoidance or reduction of actual or potential harm

### **Accessibility**

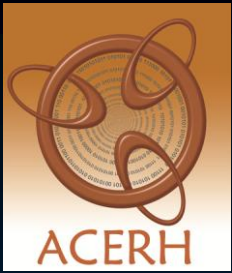
obtain care at the right place/time

### **Responsiveness**

Service is client-oriented

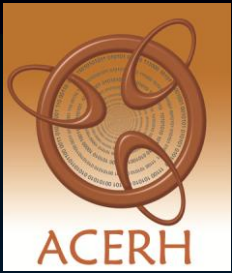
### **Efficiency & sustainability**

costeffective use of resources



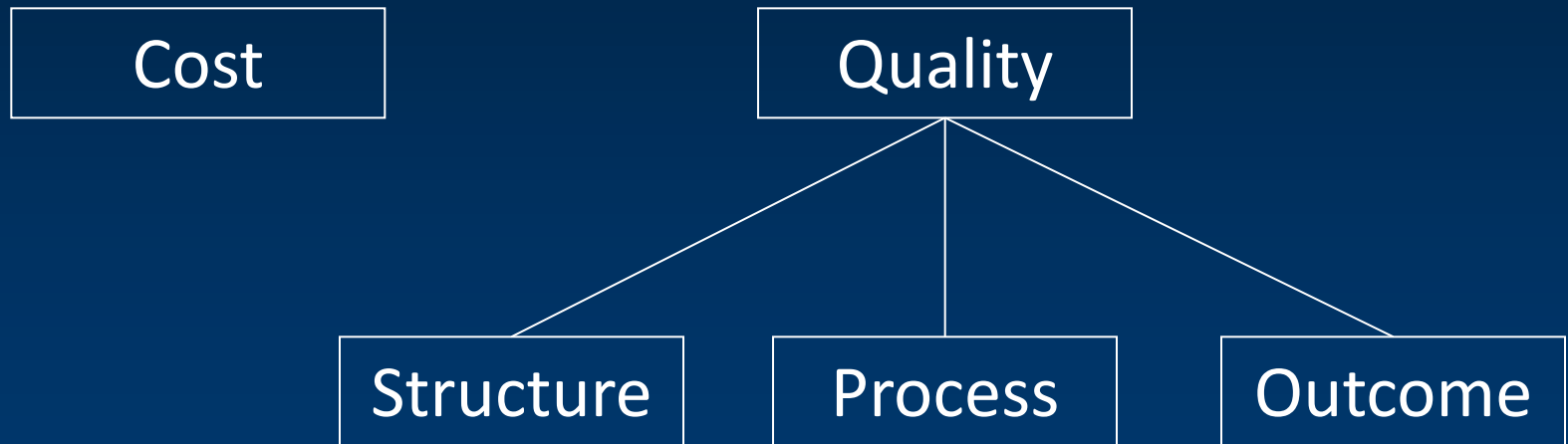
## Selected performance indicators from *Australian Hospital Statistics 2007-08*

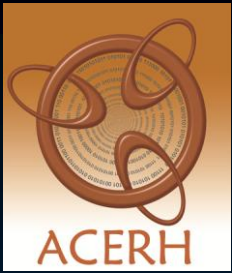
- Accreditation of hospitals and beds
- Separation rates for selected potentially preventable hospitalisations
- Separations with adverse events
- Emergency department waiting times
- Waiting times for elective
- Surgery
- Cost per casemix-adjusted separation
- Relative stay index



# Simplified framework

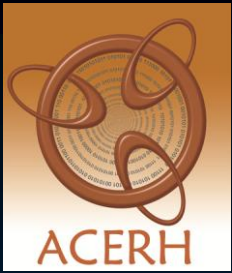
Virtually all hospital performance indicators can be summarised under two headings:





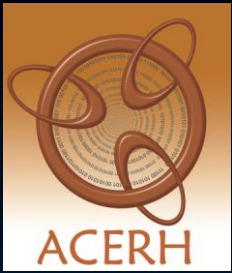
## Cost

- Is cost per separation excessive?
- Does cost per separation vary systematically by:
  - \* location of hospital (urban, rural)
  - \* type of hospital (general, tertiary referral)
  - \* ownership type (public, private)
- How do teaching and research functions affect costs?



## Quality

- Structure
  - \* health practitioners appropriately qualified?
  - \* equipment functioning correctly?
  - \* is vaccine cold chain effective?
- Process
  - \* were inputs combined correctly?
  - \* was a key test in a diagnostic workup missed?
- Outcome
  - \* effect on patient's health (morbidity, mortality)

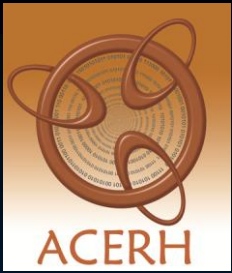


# Importance of benchmarks

Two key steps in performance appraisal:

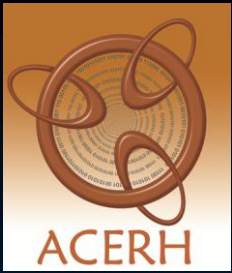
- Measure performance indicators
- Appraise performance indicators against benchmarks (is performance “good” or “bad”?)

Australia is doing well on the first, but needs more work on the second



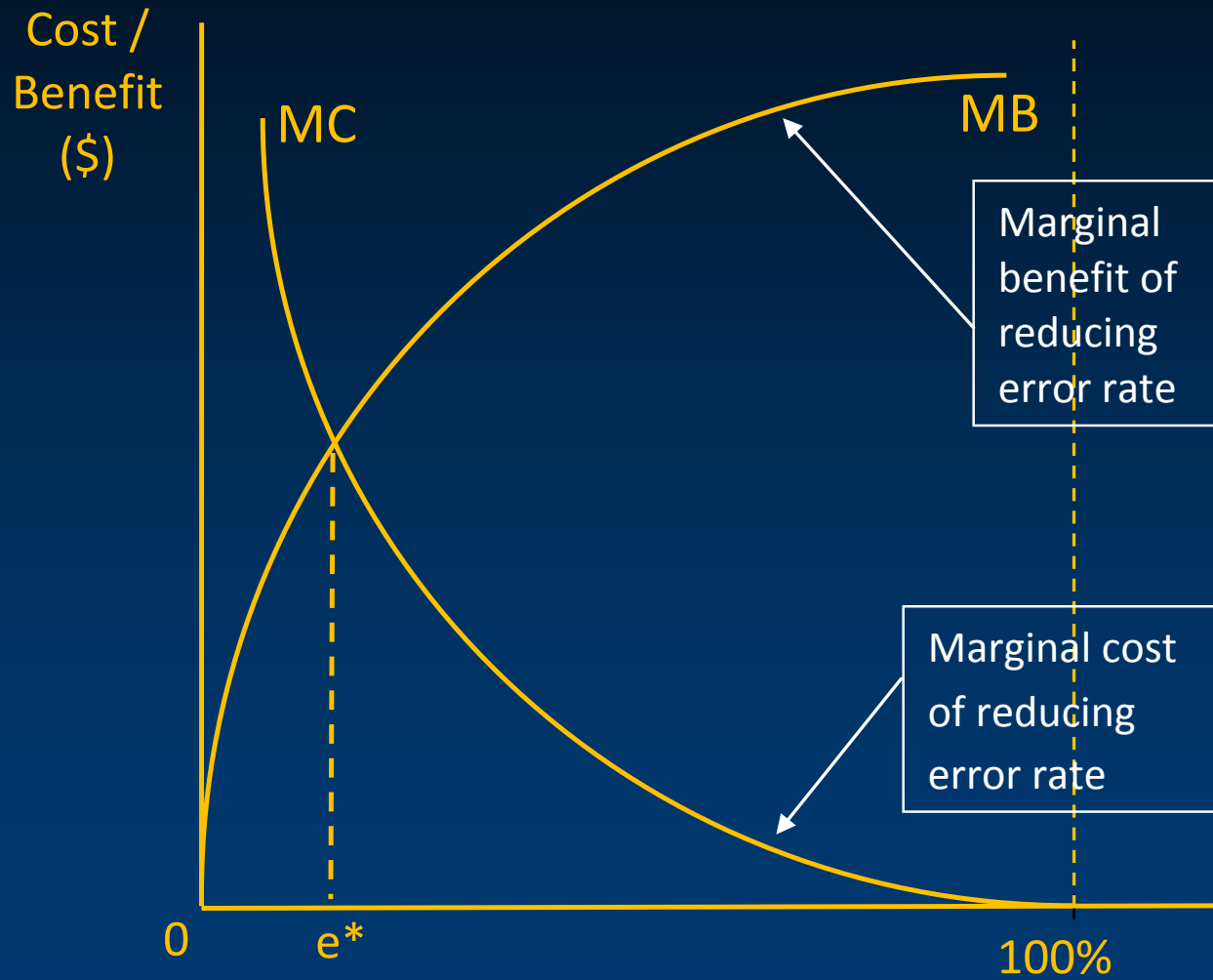
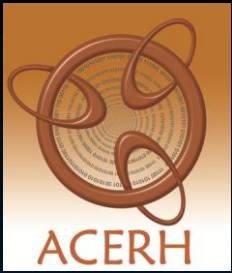
## Example of the first step:

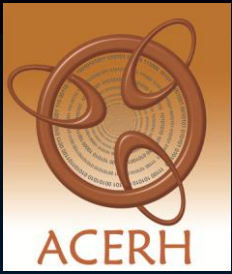
- Hospital errors claim the lives of 4,550 Australians a year, equivalent to the death toll from 13 jumbo jets crashing and killing all on board (NHHRC Report)
- Savings of \$1 billion a year could be made if problems including hospital-borne infections, medication mix-ups, drug side effects and patient falls were only halved.
- Such "adverse events" are estimated to have affected about 16 per cent of people admitted.



## 4 questions concerning the second step:

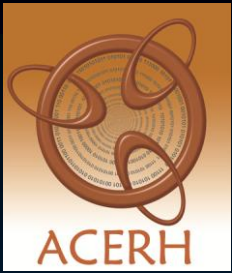
- Is it technically possible to eliminate all “hospital errors”?
- If yes, at what cost?
- Is the cost-quality trade-off “acceptable”?
- If not acceptable, what is the optimal cost-quality combination?





A common approach to estimating  $e^*$ :

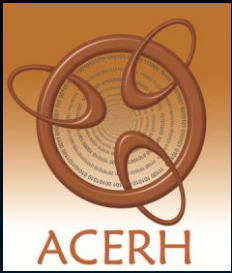
Use the industry average (e.g. mean error rate across all hospitals) then compare individual hospitals' error rates with industry average



# Productivity Commission

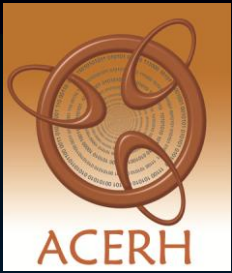
Australian Government has asked PC to examine and report on the relative performance of the public and private hospital systems, and related data issues.

- \* comparative hospital and medical costs for clinically similar procedures performed by public and private hospitals
- \* the rate of hospital-acquired infections by type, reported by public and private hospitals
- \* rates of fully-informed financial consent by privately-insured patients, out-of-pocket expenses for patients who do not give such consent, and best-practice examples where fully-informed financial consent is provided for every procedure



- \* other relevant performance indicators, including the ability of such indicators to inform comparisons of hospital performance and efficiency.

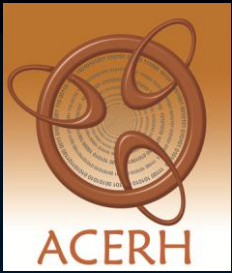
If any of the above tasks prove not fully possible because of conceptual problems or data limitations, the Commission is to propose developments to improve the feasibility of future comparisons.



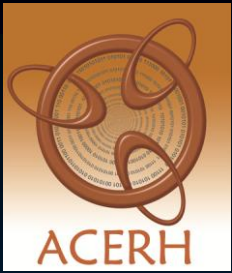
## PC approach: multivariate analysis

Multivariate analysis has the potential to overcome some of the shortcomings of reporting individual partial indicators, such as average costs and infection rates, by generating a single measure of performance that simultaneously accounts for a hospital's:

- diversity of activity
- quality and patient safety
- profile of patient risks
- other external factors that might affect its performance.



- The Commission intends to model these factors using stochastic frontier analysis and data envelopment analysis. Factors to be considered include:
- outputs (OP and IP activities)
  - inputs (labour, drugs, etc)
  - quality and patient safety (e.g. in-hospital mortality)
  - hospital/facility type
  - patient risk characteristics



# Conclusions

- Data sets are good, measurement of performance indicators accords with “best current practice” (not perfect)
- Comparison of measures with benchmarks to appraise performance requires a lot more work
- An economic approach to setting benchmarks (comparing costs and benefits) is advocated
- Productivity Commission analysis will potentially provide an example of measurement and benchmarking using “industry averages”