Safety, quality and performance in health: a national perspective

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About the Institute

• Statutory authority of the Australian Government, established through AIHW Act 1987
• About 360 staff, in Canberra
• Collaborating with others elsewhere in Australia
• Independent management board
• Ethics committee
Required under the AIHW Act to...

- Collect, produce and coordinate health information and statistics
- Undertake studies to assess the provision, use, cost and effectiveness of health services
- Develop relevant specialised statistical standards and classifications
- Report on the state of the nation’s health and welfare every two years
- Publish other methodological and substantive reports
Our Strategic Directions

• Better information and statistics for better health and wellbeing
  – Further strengthen our policy relevance
  – Improve the availability of information for the community and our stakeholders
  – Improve information quality, protecting privacy
  – Capitalise on the contemporary information environment
  – Cultivate and value a skilled, engaged and versatile workforce
What do we do?

• **Data development**: development of definitions for data to be reported as national minimum data sets or other national collections

• **Data collection / collation**: from states and territories, Commonwealth agencies, and service providers

• **Data analysis and dissemination** through reports and the Internet
We work with

• **Commonwealth departments** (Australian Government Department of Health and Ageing in particular)
• **State and territory** government departments
• **Other independent bodies**
  – Australian Commission on Safety and Quality in Health Care
  – National Health Performance Authority
  – COAG Reform Council
• **Australian Bureau of Statistics**
AIHW reports and outputs
Data also provided for national reporting and monitoring

- COAG Reform Council annual performance reports
- Report on Government Services
- NHPA’s MyHospitals website
About this presentation

- Overview of Australian approaches to health measurement, for performance reporting and for safety and quality improvement
- What do we mean by performance?
- What is measured and reported in Australia?
  - For performance reporting
  - For safety and quality improvement
- What is reported by the OECD?
What is performance?

• National Health Performance Framework
• National Healthcare Agreement
• Performance and Accountability Framework for health reform
• Steering Committee for the Review of Government Services: Report on Government Services
• OECD Health at a glance framework
What is performance?  
Health Ministers’ National Health Performance Framework

<table>
<thead>
<tr>
<th>Health status</th>
<th>How healthy are Australians?</th>
<th>Is it the same for everyone?</th>
<th>Where are the best opportunities for improvement?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Health conditions</strong></td>
<td>Prevalence of disease, disorder, injury or trauma, or other health-related states</td>
<td></td>
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<tr>
<td><strong>Human function</strong></td>
<td>Alterations to body structure or function (impairment), activity limitations and restrictions in participation</td>
<td></td>
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<tr>
<td><strong>Wellbeing</strong></td>
<td>Measures of physical, mental and social wellbeing of individuals</td>
<td></td>
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<tr>
<td><strong>Deaths</strong></td>
<td>Mortality rates and measures of life expectancy</td>
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<table>
<thead>
<tr>
<th>Determinants of health</th>
<th>Are the factors determining good health changing for the better?</th>
<th>Where and for whom are these factors changing?</th>
<th>Is it the same for everyone?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental factors</strong></td>
<td>Physical, chemical and biological factors such as air, water, food and soil quality</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Community and socioeconomic factors</strong></td>
<td>Community factors such as social capital, support services, and socioeconomic factors such as housing, education, employment and income</td>
<td></td>
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<tr>
<td><strong>Health behaviours</strong></td>
<td>Attitudes, beliefs, knowledge and behaviours such as patterns of eating, physical activity, smoking and alcohol consumption</td>
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<tr>
<td><strong>Biomedical factors</strong></td>
<td>Genetic-related susceptibility to disease; and other factors such as blood pressure, cholesterol levels and body weight</td>
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</tbody>
</table>
What is performance? Health Ministers’ National Health Performance Framework

<table>
<thead>
<tr>
<th>Health system performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>How does the health system perform?</td>
</tr>
<tr>
<td>What is the level of quality of care across the range of patient care needs?</td>
</tr>
<tr>
<td>Is it the same for everyone?</td>
</tr>
<tr>
<td>Does the system deliver value for money and is it sustainable?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Effectiveness</th>
<th>Safety</th>
<th>Responsiveness</th>
<th>Efficiency &amp; sustainability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Care, intervention, or action provided is relevant to the client’s needs and based on established standards. Care, intervention or action achieves desired outcome</td>
<td>The avoidance or reduction to acceptable limits of actual or potential harm from health-care management or the environment in which health care is delivered</td>
<td>Service is client orientated. Clients are treated with dignity and confidentiality, and encouraged to participate in choices related to their care</td>
<td>Achieving desired results with the most cost-effective use of resources. Capacity of the system to sustain workforce and infrastructure, to innovate and respond to emerging needs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Continuity of care</th>
<th>Accessibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to provide uninterrupted, coordinated care or service across programs, practitioners, organisations and levels over time</td>
<td>People can obtain health care at the right place and right time irrespective of income, physical location and cultural background</td>
</tr>
</tbody>
</table>
## What is performance?

### National Healthcare Agreement

**Australians are born and remain healthy**
- Low birth weight babies
- Prevalence of overweight and obesity
- Adult daily smoking
- Major causes of death
- Infant and child mortality
- Incidence of heart attack
- Risky alcohol consumption
- Life expectancy
- Adults with very high psychological distress
- Incidence of select cancers
- Prevalence of type 2 diabetes

**Australians receive appropriate high quality and affordable primary and community health services**
- Waiting times for GPs
- Treatment rates for mental illness
- Potentially avoidable deaths
- Potentially preventable hospitalisations
- Waiting times for public dentistry
- Avoidable GP-type presentations to EDs
- Financial barriers to select healthcare
- Effective management of diabetes

**Australians receive appropriate high quality and affordable hospital and hospital related care**
- Waiting times for elective surgery
- Waiting times for emergency department care
- Rate of community follow up within 7 days of discharged from psychiatric admission
- Healthcare associated infections
- Unplanned hospital readmissions
- Survival of people diagnosed with notifiable cancer
### What is performance?

**National Healthcare Agreement**

**Older Australians receive appropriate high quality and affordable health and aged care services**

- Residential and community aged care places per 1,000 population aged 70+ years
- Elapsed times for aged care services
- Number of hospital patient days used by those eligible and waiting for residential aged care
- Proportion of residential aged care services that are three year re-accredited
- Proportion of aged care residents who are full pensioners relative to the proportion of full pensioners in the general population
- Proportion of residential aged care days on hospital leave due to selected preventable causes.

**Australians have positive health and aged care experiences which take account of individual circumstances and care needs**

- Patient satisfaction and experience

**Australians have a sustainable health system**

- Full time equivalent employed health practitioners per 1,000 population (by age group and profession type)

**Australians have a health system that promotes social inclusion and reduces disadvantage, especially for Indigenous Australians**

All performance indicators, where it is possible and appropriate to do so, are reported by Indigenous status, disability status, remoteness area and socio-economic status to assess whether comparable health outcomes and service delivery outcomes are being achieved.
What is performance?
National Partnership Agreement on Improving Public Hospital Services: special measures

• National Emergency Access Target
  – 90% of patients discharged, transferred, admitted within 4 hours
  – Measures of access block (Admission from EDs)
  – Unplanned re-attendances at EDs

• National Elective Surgery Target
  – Surgery on time by urgency category
    • Improvements for urgency categorisation
  – Surgery for long wait patients
  – Adverse events, readmissions
  – Measures of access to emergency surgery
What is performance? Report on Government Services

• Sector-wide indicators – health status, risk factors, health workforce, access to services according to need
• Public hospitals, maternity services, primary and community health, mental health management
• Public hospital outputs
  – Equity
    • access
  – Effectiveness
    • access, appropriateness, quality (safety, responsiveness, continuity)
  – Efficiency
    • sustainability
• Public hospital outcomes
  • Mortality in hospitals, sentinel events, patient satisfaction
What is performance? Initial PAF indicators for hospitals and LHNs - examples

• **Effectiveness - Safety and quality**
  – Unplanned hospital readmission rates for Acute Myocardial Infarction
  – Healthcare associated *Staphylococcus aureus* (including MRSA) bacteraemia.

• **Effectiveness - Patient experience**

• **Equity and effectiveness - Access**
  – Emergency Department waiting times
  – Cancer care pathway – waiting times for cancer care.

• **Efficiency - Efficiency and financial performance**
  • Day of surgery admission rates for non emergency multi-day stay patients
  • Financial performance against activity funded budget (annual operating result)
What is performance? Initial PAF indicators for Medicare Locals - examples

• **Effectiveness - Safety and quality**
  – Selected potentially avoidable hospitalisations
  – Percentage of diabetic patients who have a GP annual cycle of care;
  – Five year survival proportions of selected cancers.

• **Effectiveness - Patient experience**

• **Equity and effectiveness - Access**
  – Waiting times for GP services
  – Screening rates for breast, cervical and bowel cancer
  – GP service utilisation by residents of Residential Aged Care Facilities

• **Efficiency - Financial performance**
  – Financial performance against budget.
What is performance? OECD Framework for *Health at a Glance*
Australian Commission on Safety and Quality in Health Care: Indicators of Safety and Quality

- Objectives are
  - Enhance the quality and safety focus in national health data standards and indicators
  - Drive improvement in safety and quality at local levels through fostering supportive feedback
  - Improve transparency and accountability in reporting on healthcare safety and quality
- Core, hospital-based outcome indicators
- Patient safety reporting for hospitals
- Patient experience and patient satisfaction in hospitals
- Practice-level indicators of safety and quality for primary health care
- Core outcome indicators for day procedure services
- Condition-specific indicators for Australian Clinical Standards
Hospital performance indicators reported in Australia: some examples

• **National Health Performance Framework:**
  – Effectiveness
  – Safety
  – Responsiveness
  – Continuity of care
  – Accessibility
  – Efficiency and sustainability

• **Comparisons:** over time, between states/sectors/countries, considering equity
Effectiveness: Accreditation of hospital beds, 2007-08 to 12
Safety: SAB

- *Staphylococcus aureus* bacteraemia (bloodstream infection, ‘golden staph’)
- An important measure of infection control in hospitals
- Data collected by infection control staff
- National Healthcare Agreement (NHA) performance indicator, and national benchmark set of no more than 2.0 episodes per 10,000 patient days
SAB episodes per 10,000 patient days in public hospitals, 2011-12: Australian states, territories

Benchmark is 2.0
Readmissions: safety and effectiveness

Hospital performance: readmissions following surgery

The proportion of separations for selected types of surgery that result in readmission to hospital within 28 days is regarded as an indicator of the safety and quality of admitted patient care in hospitals. Data for this indicator are only available for public hospitals, and only for readmissions to the hospital in which the surgery was performed. Readmissions to other hospitals are not included, so the readmission rates are likely to be underestimated.

In 2009–10, hysterectomy was followed by readmissions on about 3% of occasions, followed by prostatectomy and tonsillectomy and/or adenoidectomy. Readmissions following cataract surgery were relatively much rarer (Figure 28).

![Bar chart showing readmissions per 100 separations for various surgeries](chart.png)

Figure 28: Readmissions within 28 days to the same public hospital following selected types of surgery, 2009–10
Responsiveness

• No ‘designated’ indicators, but patient experience measures could fit here (from ABS Patient Experience Survey)
  – Proportion of people who went to an ED or who were admitted reporting doctors or specialists always or often listened carefully to them

![Bar chart showing responsiveness by state and admission status (ED vs. Admitted).]
Continuity of care

• No indicators
Accessibility: Waiting times for elective surgery, median days
Accessibility: Emergency Department care: % seen on time 2011-12
Accessibility: Admission to hospital from Emergency Department 2011-12

% within 4 hours or less (target 90%); 90th percentile (hours)
Efficiency and sustainability: cost per casemix-adjusted separation
Efficiency and sustainability: relative stay index, 2011-12
Safety and quality indicator examples: ACSQHC Core Hospital-Based Outcomes indicators

- Safety and quality value in the report-review-act cycle based on data provided routinely to hospitals
- *Draft* specifications are downloadable from Commission website
- The CHBOI Toolkit (SAS code and technical notes) is also available from the Commission - not yet validated - a screening tool for internal safety and quality improvement - not intended for public reporting or performance measurement
- AIHW provided data analysis assistance, and trial data sets for states/territories and private hospital groups
ACSQHC Core, Hospital-based Outcomes Indicators

• Hospital standardised mortality ratio
• Death in low-mortality Diagnosis Related Groups
• In-hospital mortality for
  – acute myocardial infarction (AMI)
  – stroke
  – fractured neck of femur, and
  – pneumonia
• Unplanned/unexpected hospital readmission of patients discharged following management of
  – acute myocardial infarction (AMI)
  – knee replacements
  – hip replacements
  – paediatric tonsillectomy and adenoidectomy
• Healthcare associated *Staphylococcus aureus* bacteraemia
• *Clostridium difficile* infection
Example presentations of some CHBOIs

• **Caterpillar plots** and **funnel plots**
• HSMRs use national data for 2004-2007 method investigation; 100 is reference value for all hospitals (public and private)
• Others shows reference value for all the private hospitals included in 2009-10 trial datasets
• **Upper and lower confidence limits**
• Hospitals that could be considered ‘outliers’ because they are outside the limits
• Risk adjustment for HSMRs and readmissions
• Possibly affected by *variation* in service organisation (transfers etc) and data quality
Hospital standardised mortality ratio

Caterpillar plot 2004-2007

Funnel plot 2004-2007
In-hospital mortality for acute myocardial infarction (AMI)

Caterpillar plot 2009-10

Funnel plot 2009-10
In-hospital mortality for fractured neck of femur

Caterpillar plot 2009-10

Funnel plot 2009-10
In-hospital mortality for pneumonia

Caterpillar plot 2009-10

Funnel plot 2009-10
Unplanned hospital re-admission for acute myocardial infarction (AMI)

Caterpillar plot 2009-10

Funnel plot 2009-10
Unplanned hospital re-admission for hip replacement

Caterpillar plot 2009-10

Funnel plot 2009-10
Unplanned hospital re-admission for paediatric tonsillectomy and adenoidectomy

Caterpillar plot 2009-10

Funnel plot 2009-10
OECD Medical practice variations project

- The ACSQHC is leading the Australian work, with assistance from the AIHW
- Three broad objectives:
  - To document medical practice variations, with a focus on within-country variations
  - To analyse possible causes of these medical practice variations, and
  - To explore policy options to reduce unwarranted variations and improve resource allocation.
- An Australian report is being prepared for the OECD and will present data at a Medicare Local level.
- The OECD will produce a comprehensive project by early 2014.
- In addition, a report is being prepared on Australian practice
- A project that is relevant to safety and quality of care, and access to care
Medical practice variation

- Overnight medical admissions
- Caesarean sections: hospital admissions
- Revascularisation: coronary artery bypass graft; coronary angioplasty and stenting; cardiac catheterisation
- Knee interventions: knee replacement; knee arthroscopy
- Hip fractures
- Hysterectomy

• In 2010–11, at the 10th and 90th percentiles, the amount of variation was smallest for caesarean sections (a 1.3 fold variation) and largest for cardiac catheterisation and knee arthroscopy (both twofold variation).

• Further work could focus on peer groups of Medicare Locals, underlying patterns of illness, and differences in availability of medical services
Variation in hysterectomy rates
Caterpillar plot and turnip plot

Table 12: Summary measures for separations involving hysterectomy by hospital sector, 2010–11

Australia

- Medicare Local
- Australia
Variation in hysterectomy rates
Public and private hospitals in Medicare Locals
Variation in hysterectomy rates

Maps of Medicare Local rates
OECD *Health at a glance*

- **Health status**
  - life expectancy, maternal and infant mortality
- **Non-medical determinants of health**
  - food consumption, alcohol and tobacco consumption, obesity and overweight
- **Health care resources and utilisation**
  - health employment, in-patient beds, medical technology, immunisation, average length of stay, surgical procedures
- **Pharmaceutical consumption and sales, and generics market**
- **Long-term care resources and utilisation**
  - nursing home beds, care recipients in institutions or at home
- **Health expenditure**
  - total expenditure, and on the various types of health goods and services, and by provider, and by source of funds
The average length of stay in hospitals has fallen in nearly all OECD countries, reflecting efficiency gains.

Average length of stay in hospital for all causes

1. The data for Japan refer to average length of stay for acute care (excluding long-term care beds in hospitals).

Source: OECD Health Data 2011; WHO, Russian Federation and national sources for other non-OECD countries
The consumption of pharmaceuticals is increasing across OECD countries, particularly for antidiabetics and antidepressants.

Source: OECD Health Data 2011, OECD (http://www.oecd.org/health/healthdata)
Screening and survival rates for cervical cancer have increased in most countries, but survival rates remain lower in Ireland and UK

Cervical cancer screening, percentage of women screened aged 20–69

Cervical cancer five-year relative survival rate

1. Programme. 2. Survey.

Note: 95% confidence intervals represented by H.

Source: OECD Health Data 2011, OECD (http://www.oecd.org/health/healthdata)
In-hospital mortality rates following heart attack have decreased in all OECD countries, indicating improvements in acute care.

Reduction in in-hospital case-fatality rates within 30 days after admission for AMI.

Note: Rates age-sex standardised to 2005 OECD population (45+). 95% confidence intervals represented by H.

Source: OECD Health Data 2011, OECD (http://www.oecd.org/health/healthdata)
Treatment for chronic diseases is not optimal. Too many persons are admitted to hospitals for asthma ...

Asthma admission rates, population aged 15 and over, 2009 (or latest year available)

<table>
<thead>
<tr>
<th>Rates per 100 000 population</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portugal</td>
<td>20.6</td>
<td>35.7</td>
</tr>
<tr>
<td>Canada</td>
<td>15.7</td>
<td>15.1</td>
</tr>
<tr>
<td>Mexico</td>
<td>15.1</td>
<td>16.0</td>
</tr>
<tr>
<td>Italy</td>
<td>19.2</td>
<td>19.3</td>
</tr>
<tr>
<td>Sweden</td>
<td>20.8</td>
<td>22.5</td>
</tr>
<tr>
<td>Germany</td>
<td>39.9</td>
<td>38.1</td>
</tr>
<tr>
<td>Netherlands</td>
<td>33.3</td>
<td>35.0</td>
</tr>
<tr>
<td>Switzerland</td>
<td>36.5</td>
<td>36.5</td>
</tr>
<tr>
<td>Iceland</td>
<td>37.0</td>
<td>37.0</td>
</tr>
<tr>
<td>Hungary</td>
<td>38.1</td>
<td>43.4</td>
</tr>
<tr>
<td>Denmark</td>
<td>39.9</td>
<td>43.5</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>43.9</td>
<td>43.9</td>
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<tr>
<td>Slovenia</td>
<td>47.6</td>
<td>43.5</td>
</tr>
<tr>
<td>France</td>
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<td>43.9</td>
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<tr>
<td>Ireland</td>
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<td>43.9</td>
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<tr>
<td>Spain</td>
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<td>47.6</td>
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<tr>
<td>Norway</td>
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<td>18.5</td>
</tr>
<tr>
<td>Belgium</td>
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<td>18.5</td>
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<tr>
<td>OECD</td>
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<td>50.0</td>
</tr>
<tr>
<td>Austria</td>
<td>166.8</td>
<td>166.8</td>
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<tr>
<td>Israel</td>
<td>125.8</td>
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<tr>
<td>Poland</td>
<td>101.5</td>
<td>101.5</td>
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<tr>
<td>United Kingdom</td>
<td>80.7</td>
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<tr>
<td>Finland</td>
<td>73.7</td>
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<tr>
<td>New Zealand</td>
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<tr>
<td>United States</td>
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<tr>
<td>Korea</td>
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<tr>
<td>Slovak Republic</td>
<td>68.4</td>
<td>68.4</td>
</tr>
</tbody>
</table>

Note: Rates age-sex standardised to 2005 OECD population. 95% confidence intervals represented by H.

Source: OECD Health Data 2011, OECD (http://www.oecd.org/health/healthdata)
... and too many persons are admitted to hospitals for uncontrolled diabetes, highlighting the need to improve primary care.

Uncontrolled diabetes admission rates, population aged 15 and over, 2009 (or nearest year)

Note: Rates age-sex standardised to 2005 OECD population. 95% confidence intervals represented by H.

Source: OECD Health Data 2011, OECD (http://www.oecd.org/health/healthdata)
OECD Health Care Quality Indicators

Examples – some under development

• Care for Chronic Conditions
  – Avoidable admissions: respiratory diseases such as COPD

• Care for Acute Exacerbation of Chronic Conditions
  – In-hospital and 30 day mortality following acute myocardial infarction

• Patient Safety
  – Obstetric trauma, vaginal delivery with/without instrument

• Care for Mental Disorders
  – Unplanned hospital re-admissions for schizophrenia

• Cancer Care
  – Cervical cancer screening, survival, mortality

• Care for communicable diseases
  – Childhood and influenza vaccination

• Patient experience
Questions and comments