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Charting the Safety and Quality of Health Care in Australia

This publication was developed under the auspices of the Australian Council for Safety and Quality in Health Care and the National Institute of Clinical Studies.

July 2004

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The Australian Council for Safety and Quality in Health Care was established in January 2000 by the Australian Government Health Minister with the support of all Australian Health Ministers to lead national efforts to improve the safety and quality of health care, with a particular focus on minimising the likelihood and effects of error. The Council reports annually to Health Ministers.

The National Institute of Clinical Studies (NICS) is Australia's national agency for improving health care by helping close important gaps between best available evidence and current clinical practice.

This document provides information on the quality of health care in Australia from various data sources. It is an attachment to the Council's fifth annual report to Health Ministers, Maximising National Effectiveness to Reduce Harm and Improve Care, Fifth Report to the Australian Health Ministers' Conference, 29 July 2004.

Copies of this document and further information on the work of the Council can be found at www.safetyandquality.org or from the Office of the Safety and Quality Council on telephone: +61 2 6289 4244 or email to: safetyandquality@health.gov.au.

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Foreword

Every year millions of people interact safely with the Australian health care system and receive quality care. However, the increasingly diverse nature and complexity of this system means that sometimes things can and do go wrong, and that the delivery of health care will always involve some risk.

The Australian Council for Safety and Quality in Health Care (the Council) is committed to minimising this risk by gaining a better understanding of the requirements for effective and systematic improvements in safety and quality. However, measuring safety and quality across complex systems is an extraordinarily challenging task.

I am frequently asked about the exact magnitude of the safety and quality problems faced within the Australian health care system. The truth is that we simply do not have a figure that truly represents the current state of affairs. There is no single source of statistics that provides an appropriate measure for safety and quality. The answer to this question relies on having multiple but consistent data collections and methodologies Australia-wide.

Even if there were a simple way of expressing measurements of health care safety, there is no doubt that any adverse incident which results from the care provided in the Australian health care system is unacceptable if it is potentially preventable. Every effort must continue to be made to improve the safety and quality of the care provided.

Reporting adverse events and incidents is the first step that must be taken nation-wide to allow a better understanding of problems that exist, why they occurred, and how best to address them. This will require increased support for collection and analysis of data so as to avoid increasing “the burden of caring” for over-stretched clinicians.

The Council has embarked on a number of initiatives that aim to achieve national uniformity and that add value to information collection and analysis that is already being conducted by the Australian Government, States and Territories and the private sector. For example, the Measuring Quality for Improvement Workshop held in September 2003, achieved agreement about a national approach to developing performance indicators and using them to improve quality of health care at all levels.

In addition, Council promotes and fosters the development of a transparent and just culture within which health care providers can report patient safety incidents without fear of inappropriate blame. This in turn supports measurement and analysis of data and opportunities for system improvement. So far, the Council has reached agreement in all jurisdictions about a national core set of Sentinel Events, has supported training in Root Cause Analysis, is promoting a national approach to clinical audit as a quality improvement activity, and has achieved agreement on a national approach to incident monitoring and management.

Given that the data used for the Quality in Australian Health Care Study is now 12 years old and considering that this type of study, as a single measurement tool, may not fully reflect the safety and quality of current health services, the Council has commissioned a large project that involves assessing the current status of the safety and quality of health care in Australia. This will include assessment of the size and nature of safety and quality problems in Australia, of the capacities needed to deliver even safer quality care, and of actions presently being taken to improve safety and quality. This important initiative is expected to give an accurate and up-to-date picture of the safety of health care services in Australia. The results are expected to be available early in 2006.

The publication of this Chartbook is another step in achieving clarity about the current status of the safety and quality of health care in Australia. Safety is only one dimension of quality and this report covers safety, effectiveness, appropriateness, responsiveness and accessibility. There are of course tensions between access, capability and safety.

The Chartbook has been produced to provide health care providers, policy makers, and consumers with a comprehensive overview of what is already known about the safety and quality of the Australian health care system by collecting together within the same cover useful published data from many sources. While the report cannot provide a complete set of indicators, it does provide a stimulus to the further development of performance measures that may assist future understanding of progress in health care safety and quality.

In addition, it sets the scene for agreement on the process for the development of a definitive Australian methodology that could be used nationally and internationally to obtain a quantitative and comparative understanding of health care safety and quality.

Above all, the data offers information about the gaps that still exist and our capacity to improve. It recognises the importance that Council places on the collection, reporting and analysis of useful information that will be used as the evidence-base to drive strategic investment to improve health care safety and quality in Australia.

A handwritten signature in black ink, reading "Bruce Barraclough". The signature is written in a cursive, flowing style.

Bruce Barraclough
Chair, Australian Council for Safety and Quality in Health Care

Introduction

Compared to most other countries in the world, the health of Australia's population is very good and has been improving over recent years. Our life expectancy is among the highest in the world and death rates from major diseases, such as heart disease, stroke and cancer have been decreasing. Unfortunately, good health is not shared equitably by all members of the community. In particular, Indigenous Australians have much lower life expectancies and suffer much higher rates of illness and disability than the rest of the population.

Contribution to health improvement unclear

However, the contribution of health care to the improvement in the health of Australians is not clear: whilst there are many indications that Australians receive a high standard of health care, a comprehensive view of the safety and quality of health care in the country remains elusive. Our health care system involves many players working across governments and the public and private sectors. Delivery of care frequently requires complex coordination of health care providers and resources. Medical advances and new demands arising from demographic change are challenging the Australian system to develop better ways of addressing the quality of care delivered and to assure the safety of patients.

Serious Quality Problems

Despite the many successes of Australia's health care, it is known there are serious quality problems across our health system. Poor quality care, including poor access to care, leads to significant human and social costs – pain and suffering, diminished ability to function, reduced productivity, or even death (Australian Council for

Safety and Quality in Health Care (ACSQHC) 2003). Poor quality is extremely costly and drains the system of precious resources.

Quality in Australian Health Care Study

Australia led the world in undertaking the first nationally representative study of adverse events in hospital patients, the *Quality in Australian Health Care Study* (Wilson et al 1995). This study revealed that 16.6 per cent of admissions to selected hospitals in New South Wales and South Australia were associated with an adverse event. Fifty one per cent of these were considered preventable. Reanalysis using US methodology suggests that at least 10 per cent of acute-hospital admissions were associated with a potentially preventable adverse event (Thomas et al 2000). It has been demonstrated that rates of serious adverse events are similar to those found in studies in the United States, with 0.3 per cent of admissions associated with an iatrogenic death and 1.7 per cent associated with major iatrogenic disability (Runciman et al 2000). The opportunities to improve the safety of health care are clear.

Not simply a matter of more money

Although strategic investments in the right areas are required, the challenges of quality are not simply a matter of more money. In 2001, expenditure on health in Australia was 9.3 per cent of Gross Domestic Product - close to the average of OECD countries. The available evidence suggests the level of patient safety problems in Australia is similar to levels in the United States, which currently spends 14 per cent of its Gross Domestic Product on health.

Australian Council for Safety and Quality in Health Care

To fully realise its potential, better approaches are required to tackle these and other quality issues for the Australian system, approaches that make the best use of available resources. Since the publication of the Quality in Australian Health Care Study, Australia has taken many steps towards realising this goal, most importantly by establishing a national body, the Australian Council for Safety and Quality in Health Care, that provides leadership and coordinates strategies across the health system. Sustainable improvements in quality require strategies that:

- create better systems that support practitioners to deliver safe and effective care;
- build a new culture of safety;
- involve consumers; and
- improve data and information (ACSQHC 2003).

Framework for Assessing Performance

Achieving an understanding of the magnitude and nature of quality problems will assist the many stakeholders interested in improving the performance of the Australian health care system, and will provide a foundation for communicating the success of strategies developed to address quality issues. In Australia, a framework for assessing health system performance has been agreed by Health Ministers (Figure i). This framework assesses health system performance across nine domains - *Effective, Appropriate, Safe, Responsive, Accessible, Continuous, Capable, Efficient and Sustainable*. The framework suggests health system performance be considered in relation to overall health outcomes and the non-health system determinants of health. Equity is considered as an issue that cuts across all domains, by asking the question: “Is it the same for everyone?”

Health status and outcomes (Tier 1)

How healthy are Australians? Is it the same for everyone? Where is the most opportunity for improvement?

<i>Health conditions</i>	<i>Human function</i>	<i>Life expectancy & wellbeing</i>	<i>Deaths</i>
Prevalence of disease, disorder, injury or trauma or other health-related states	Alterations to body structure or function (impairment), activities (activity limitation) and participation (restrictions in participation)	Broad measures of physical, mental and social wellbeing of individuals and other derived indicators such as disability adjusted life expectancy (DALE)	Age and/or condition specific mortality rates

Determinants of health (Tier 2)

Are the factors determining health changing for the better? Is it the same for everyone? Where and for whom are they changing?

<i>Environmental factors</i>	<i>Socioeconomic factors</i>	<i>Community capacity</i>	<i>Health behaviours</i>	<i>Person-related factors</i>
Physical, chemical and biological factors such as air, water, food and soil quality resulting from chemical pollution and waste disposal	Socioeconomic factors such as education, employment, per capita expenditure on health and average weekly earnings	Characteristics of communities and families such as population density, age distribution, health literacy, housing, community support and transport	Attitudes, beliefs, knowledge and behaviours, e.g. patterns of eating, physical activity, excess alcohol consumption and smoking	Genetic-related susceptibility to disease and other factors such as blood pressure, cholesterol levels and body weight

Health system performance (Tier 3)

How well is the health system performing in delivering quality health actions to improve the health of all Australians? Is it the same for everyone?

<i>Effective</i> Care, intervention or action achieves desired outcome	<i>Appropriate</i> Care, intervention or action provided is relevant to the client's needs and based on established standards	<i>Efficient</i> Achieves desired results with most cost-effective use of resources
<i>Responsive</i> Service provides respect for persons and is client orientated, including respect for dignity, confidentiality, participation in choices, promptness, quality of amenities, access to social support networks and choice of provider	<i>Accessible</i> Ability of people to obtain health care at the right place and right time irrespective of income, physical location and cultural background	<i>Safe</i> 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
<i>Continuous</i> Ability to provide uninterrupted, coordinated care or service across programs, practitioners, organisations and levels over time	<i>Capable</i> An individual's or service's capacity to provide a health service based on skills and knowledge	<i>Sustainable</i> System's or organisation's capacity to provide infrastructure such as workforce, facilities and equipment, and to respond to emerging needs

Figure i National Health Performance Framework, Australia (NHPC 2001)

Focus on Safety and Quality

Whilst reports from the National Health Performance Committee have presented data on health system performance, available information has been relatively poor with respect to some key quality and safety issues. This publication was developed with the hope of filling some of these gaps, focusing on domains crucial to the issues of quality - assessing the extent to which health care is effective, appropriate, safe, accessible and responsive.

By creating a resource that succinctly reviews what is known about quality and safety of health care in a number of key areas, it is hoped that this publication will provide a stimulus for discussion of these issues, between health care providers, policymakers, patients and the broader community. The report has selected data, presented through graphs and narrative to convey a sense of the challenges, successes, and opportunities to improve the quality and safety of Australian health care.

Having good information on quality and safety is an important starting point for improvement (ACSQHC 2001). In developing this report various data sources were accessed. It became evident that whilst high quality data are available in some areas, data on some important issues are quite limited. This highlights the continuing need for investments in developing and refining data collections and systems. Just as important is the need to build capacity to ensure available data is used appropriately to effect change and improvement.

Defining quality

Across the world there is growing awareness of the need to improve quality and safety in health care. However, quality is a multi-faceted concept which is difficult to define. Patients, the public, doctors, other health care providers, health care managers, public health officials and policy makers hold different, but legitimate, perceptions

of what are considered to be the critical elements of quality of care. It has been suggested that quality should be understood as a concept with multiple stakeholder interpretations – with all the difficulties this implies (Leatherman and Sutherland 1998).

Doctors often view quality “in a technical sense, such as whether an accurate diagnosis is made, whether a surgical procedure is performed proficiently and whether the patient’s health status has improved” (Leatherman and McCarthy 2002). This perspective is reflected in the Institute of Medicine’s definition of quality as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge” (IOM 1990). From this viewpoint quality can be measured by how well the actual practice and delivery of health services reflect what is scientifically sound and possible.

Traditional medical culture tends to see quality as an outcome of the values of professionalism – good intentions, sound medical education and training, with issues addressed quietly within the professional community (Leatherman & Sutherland 1998). These values emphasise the individual doctor’s responsibility for the patient, create expectations of perfection, and personalise error. Such values are reinforced by the legal system’s approach to medical error, and also public and media attitudes toward accountability of the medical profession (Wellington 1999).

Patients are more likely to assess health care by both its impact on their health and the extent to which doctors and health providers were responsive to their individual circumstances. For patients, responsiveness of health care is important in addition to health outcomes: for example, how well the doctor listened to what they said, how clearly the doctor communicated, whether health care providers were compassionate, how accessible were health care services and how long they had to wait for care.

Health consumer advocates are interested to ensure that the elements of safety that are important to individual patients are systematically included at the clinical level in the way that services are organised and delivered.

Health managers consider quality in terms of the adequacy of the systems established in local organisations to ensure quality and address local problems, as well as the adequacy of resourcing.

Policy makers are interested to ensure health care resources are allocated so as to optimise population health outcomes, to ensure that resources are used cost-effectively and allocated equitably across population groups both in terms of equitable access to care and equity in health outcomes.

Structure of this report

To provide a context to the discussion of quality and safety, a brief overview of major features of the Australian health care system is provided in **Chapter 1**.

Chapters 2-7 consider different aspects of quality reflecting the variety of perspectives discussed above. Key areas in which improvements that could significantly affect the process and outcomes of health care are:

- consistently providing effective care (**Chapter 2**);
- reducing the provision of inappropriate care (**Chapter 3**);
- eliminating avoidable mistakes (**Chapter 4**);
- lowering barriers to accessing service (**Chapter 5**);
- improving responsiveness to patients (**Chapter 6**); and
- reducing racial, ethnic, gender, socioeconomic, and other disparities and inequalities in access and treatment (**Chapter 7**).

The final chapter (**Chapter 8**) discusses the capacity to improve, the strategies required to create a focus on improvement in quality and central elements of health care in this country.

Notes on Content and Format

Organisation: This report has been designed to align with the domains identified in the National Health System Performance Framework (NHPC 2001) most relevant to safety and quality, that is: *Effective, Appropriate, Safe, Accessible and Responsive*. One point of difference is that, whilst equity issues have been picked up in discussion of individual indicators, a separate chapter has been added to highlight discussion of health disparities for a number of important areas.

Throughout the report two pages are devoted to each issue. The first page presents a discussion of why the issue is important, what the findings indicate and the implications of these findings. The second page presents data considered appropriate in various charts. Limiting the presentation to two pages for each issue has ensured the discussion and presentation of data is concise.

Selection of indicators: Issues and data presented in this report have been selected to reflect matters that have been assessed to be important and for which there is some relevant data available from Australian sources. Criteria for selecting indicators, set out by the National Health Performance Committee (2001), have been loosely used to select issues for presentation. These criteria include the requirement that the indicator/issue: be worth measuring; be measurable for diverse populations; be understood by people who need to act; galvanise action; be relevant to policy and practice; and reflect results of actions when measured over time. Where possible, indicators have been selected to illustrate key areas for improving

safety and quality, including the National Health Priority Areas, as these conditions reflect over 70 per cent of the disease burden for the Australian community. For the issues selected there needed to be some Australian data available. Where national data are available, these have been used, although in some instance we have used data only available at a State/Territory level or from specific studies.

Sources of Data: In most instances data presented have been sourced from published studies, government reports, or reports of other organisations. Sources of data are referenced for each chart. For this publication, some analyses of the National Hospital Morbidity Data Collection were undertaken by the Australian Institute of Health and Welfare.

Presentation: Most results presented are statistically meaningful however there are some charts in which statistical analysis has not been conducted. In these instances the issue has been sufficiently important and the comparisons considered meaningful. In some charts confidence limits are presented. Comparisons between jurisdictions are presented when this is considered to be important and data are available. Because of the constraints of space, only a limited range of comparisons are presented in this publication, even though other relevant comparisons are available.

Technical Appendix: The Technical Appendix presents a more detailed explanation of data sources and methods.

Chapter 1

The Australian Health System

Health care services are concerned with promoting, restoring and maintaining a healthy society. They involve illness prevention, health promotion, the detection and treatment of illness and injury.

Steering Committee for the
Review of Government Service Provision 2004

Chapter 1

The Australian Health System

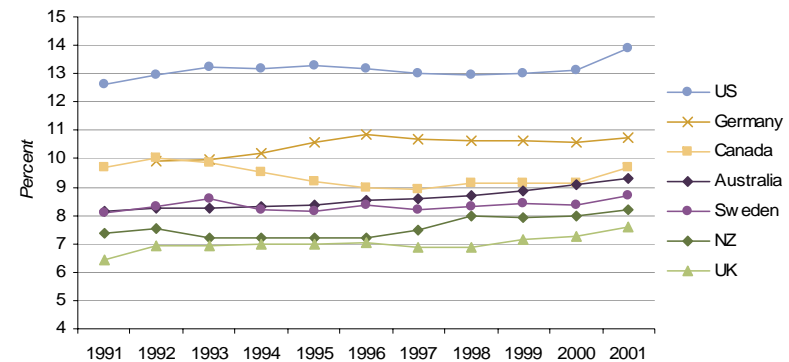
In 2003 the Australian population reached 20 million people. Australia is highly urbanised with 64 per cent of people living in the major cities. However, there are many unique challenges in meeting the health needs of people living in rural and remote communities scattered across the 7.7 million square kilometres of Australia's land mass. Indigenous Australians, many of whom live in remote regions, experience poor health, for example with life expectancy 15-20 years less than the rest of the population. Indigenous people make up around 2.4 per cent of the population. Compared to most other Western nations, Australia has a relatively young population with around 12 per cent of the population aged over 65 years in 2000, although this is predicted to rise to 24 per cent of the population in 2051, with important implications for health and social policy.

The Australian health system involves a complex interaction of levels of government and public and private sectors. Nevertheless, the system provides comprehensive coverage of health and social care services including medical services, pharmaceuticals, hospitals and residential aged care.

Health Spending

In 2001-02 health spending reached \$66.6 billion, representing 9.3 per cent of the Australian economy. This is close to the average of OECD countries (Chart 1-1). In the ten years to 2000-01 health spending grew at an average of 4.6 per cent per year after adjusting for inflation, outstripping general economic growth which averaged 3.9 per cent per year.

Chart 1-1 Health expenditures as a percentage of Gross Domestic Product selected nations – 1990-91 to 2000-01



Source: AIHW 2003e

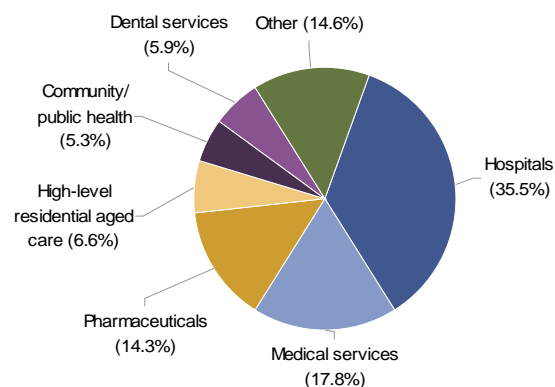
Australia has a federal system and government provides the major funding for the health care system at both the national and State/Territory level. Government contributions account for 68.4 per cent of health spending, the Australian Government contributing 46.1 per cent and State/Territory governments contributing 22.3 per cent.

Out-of-pocket payments from individuals and families account for 18.5 per cent of health spending, private health insurance 7.6 per cent and other non-government sources 5.4 per cent

Hospitals

Hospitals are the largest single area of expenditure accounting for 35.3 per cent of health expenditure, with expenditures on public hospitals representing 27.3 per cent of total health expenditure. Expenditures on hospitals grew by 3.3 per cent per annum in real terms over the last decade. Over that decade the proportion of expenditure on hospitals fell from 40.0 per cent to 35.3 per cent.

Chart 1-2 Recurrent health expenditure in Australia by broad category of expenditure 2001-02



Source: AIHW 2003e Note: Total recurrent expenditures in 2001-02 were \$62.7 billion, whilst total capital was \$3.9 billion.

Other Health Services

Spending on medical services represents 17.8 per cent of total recurrent expenditures. Spending on pharmaceutical represents 14.3 per cent of expenditures. Expenditures on pharmaceutical grew by 11.3 per cent per annum in real terms over the last decade, increasing the proportion of total expenditure on pharmaceuticals, from 9.9 per cent to 14.3 per cent.

Delivery

The delivery of health care occurs in a diverse range of settings including hospitals (public and private), aged care homes (public, private for profit and private not for profit), hospices, rehabilitation centres, private consulting rooms of doctors and other health professionals, community health centres, health clinics, ambulatory care services, and patient homes or workplaces.

Most health care in Australia is delivered by private or non-government providers, representing around 60 per cent of expenditure. These include private medical and dental practitioners, other health professionals (such as physiotherapists, optometrists and podiatrists), private hospitals, non-government aged care homes and pharmaceutical retailers.

Funding

Funding arrangements for the different components of the health system are complex. The Australian Government allocates funding to the States and Territories, private and non-government service providers and private health insurers in the form of:

- **Grants** to the States and Territories, including health care funding grants to support the provision of public hospital services free of charge under the Australian Health Care Agreements, and funding for particular public health activities under the Public Health Outcome Funding Agreements;
- **Subsidies for the delivery of medical services** under the Medicare Benefits Schedule (MBS);
- **Subsidies for pharmaceuticals** under the Pharmaceutical Benefits Scheme (PBS);
- Direct grants to non-government organisations for the provision of health care; and

- Rebates to offset the cost of private health insurance.

States and Territories have primary responsibility for the delivery and management of public hospital services and a wide range of community and public health services (including school dental, maternal and child, and environmental health programs). They fund these services through income raised from taxes, their share of the goods and services tax (GST) allocated by the Australian Government, grants from the Australian Government, and charges applied to users of services. States and Territories largely determine budgets for public hospitals and the arrangements under which they are funded, the number and location of public hospitals and community health services, the nature and extent of services available at each hospital, and public health priorities.

The States and Territories also are primarily responsible for regulating medical and other health care professions and private hospitals.

Patients admitted to hospital

In 2001–02, there were 724 public acute hospitals and 22 public psychiatric hospitals in Australia (AIHW 2003a). In the same period there were 4.0 million admitted patients treated by public hospitals, out of a total of 6.4 million admitted patients treated by public and private hospitals. Between 1997–98 to 2000–01, the rate of admitted patients treated in public hospitals per 1 000 decreased slightly, while rates for admitted patients in private hospitals increased (Table 1-1).

Patient days per 1 000 population and average length of stay fell for public hospitals, reflecting the increase in the proportion of hospital services delivered on a same day basis and improvements in health care treatments and technology resulting in reduced lengths of stay in hospital.

**Table 1-1 Hospital use by admitted patients
Australia, 1997-98 to 2001-02**

	1997-98	1998-99	1999-00	2000-01	2001-02
Admitted patients per 1,000 population^(a)					
Public hospitals	205.5	207.3	205.1	201.7	202.6
Private hospitals	99.6	102.5	108.8	119.8	125.1
<i>Total</i>	<i>304.4</i>	<i>309</i>	<i>313.1</i>	<i>320.6</i>	<i>326.7</i>
Same day admitted patient episodes as a % of total					
Public hospitals	43.3	44.7	45.8	46.4	47.6
Private hospitals	53.1	54.8	56.1	58.5	60.0
<i>Total</i>	<i>46.3</i>	<i>47.9</i>	<i>49.2</i>	<i>50.8</i>	<i>52.3</i>
Patient days per 1,000 population^(a)					
Public hospitals	918.4	885.9	868.6	825	827.8
Private hospitals	337.8	333.8	344.3	356.7	357.0
<i>Total</i>	<i>1,254.1</i>	<i>1,217.6</i>	<i>1,210.8</i>	<i>1,179.4</i>	<i>1,182.5</i>
Average length of stay (days)					
Public hospitals	4.4	4.2	4.2	4.1	4.1
Private hospitals	3.3	3.2	3.1	3.0	2.9
<i>Total</i>	<i>4.1</i>	<i>3.9</i>	<i>3.8</i>	<i>3.7</i>	<i>3.6</i>

Source: AIHW 2003a (a) Figures are rates per 1 000 directly age-standardised to the Australian population at 30 June 2001. For private hospitals, rates were derived using populations of the reporting states and territories only, without adjustment for incomplete reporting.

Public hospital workforce

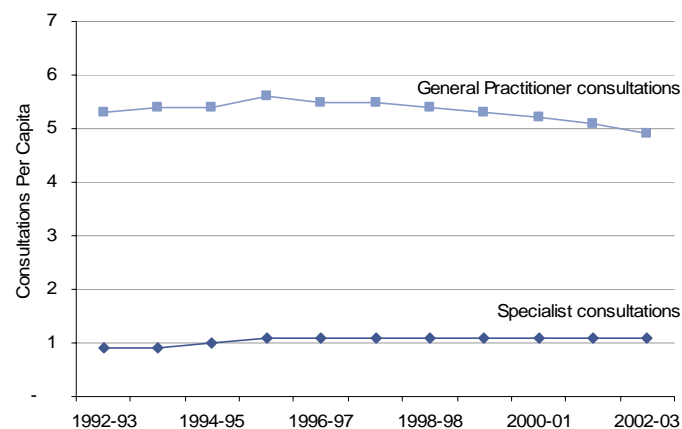
In 2001–02 nurses made up 43.8 per cent of the public hospital workforce, representing 84 265 full time equivalent staff. Salaried medical officers comprised a further 9.7 per cent of the workforce. Additional medical services were provided by visiting medical officers, contracted to public hospitals to provide services to public patients on a sessional or fee-for-service basis. However, comparable data on the numbers of visiting medical officers are not readily available. The balance of public hospital staffing comprised

diagnostic and allied health professionals, administrative and clerical staff, domestic and other staff.

Medical services

On average Australians attend a general practitioner 4.9 times a year, an equivalent of 97 million attendances each year. This rate of general practitioner attendance per person has dropped slightly in recent years (Chart 1-3). Specialist consultations have grown slightly over the same period (Chart 1-3). Excluding obstetrics, and consultations associated with operations, Australians see a specialist once a year on average, an equivalent of 21.5 million attendances in 2002-03. Pathology tests and diagnostic imaging have been the major growth areas for the Medicare Benefits Schedule. Over the last ten years benefits paid for pathology and diagnostic imaging have grown at a rate 50 per cent higher than other benefit categories.

Chart 1-3 General Practitioner and Specialist Consultations Per Capita subsidised under the Medicare Benefits Schedule, Australia, 1993-94 to 2002-03



Source: Australian Government Department of Health and Ageing 2004.

Pharmaceuticals

Expenditure on pharmaceuticals—whether on prescription pharmaceuticals, over-the-counter medicines or alternative medicines—grew strongly between 1991–92 and 2001–02 at an average of 9.4 per cent per year adjusted for inflation. Government funding of pharmaceuticals through the Pharmaceutical Benefits Scheme (PBS) and Repatriation Pharmaceutical Benefits Scheme (RPBS) was 53 per cent of the total expenditure of \$9.0 billion in 2001-02. Government funding has grown at 11.8 per cent per year after adjusting for inflation.

Quality initiatives

Quality improvement has been a specific focus of the Australian Health Care Agreements that provide a vehicle for funding for public hospitals. There has been significant funding allocated for quality improvement with \$680 million for the previous five year period and \$783 million for 2003-2008.

National and State Health Ministers have supported efforts to develop consistent measures and benchmarks to assess and report on the performance of the health system in Australia.

The national agency for health and welfare statistical information, the **Australian Institute of Health and Welfare** (www.aihw.gov.au) provides authoritative publications on many aspects of health performance to inform policy makers and the community. The AIHW agency manages many of the national data collections and provides analysis of these at the highest standard.

In addition to the AIHW, measurement and assessment of performance has been conducted in Australia through the work of several governmental bodies, including:

The Australian Council for Safety and Quality in Health Care (www.safetyandquality.org) facilitates national collaboration on safety and quality improvement. The Council is focusing on safety as the leading edge of quality improvement. It has produced reports on the adequacy of existing national data sources to identify and measure safety problems. The Council has set directions for a national approach to a safety reporting system incorporating elements such as Sentinel Event monitoring, improving the quality and usability of national morbidity and mortality data sets and methodologies for national snapshot surveys.

The National Institute of Clinical Studies (NICS) (www.nicsl.com.au) is Australia's national agency for improving health care by helping close important gaps between best available evidence and current clinical practice. Established by the Australian Government three years ago, NICS works to raise the awareness of the important gaps between what is known, from the best available research, and what is actually done in day-to-day practice.

As part of its mission to close the 'knowing-doing gap', NICS recently published a major report detailing 11 areas where gaps currently exist. The 'Evidence-Practice Gaps Report - Volume 1' spans a wide range of clinical areas highlighting issues across the continuum of care from prevention to follow up. For each of the topics covered, the report clearly and concisely explains why the area is important, what the best available evidence relating to the condition is, how current practice departs from the evidence and what the implications are.

The Evidence-Practice Gaps Report is available on the NICS website: www.nicsl.com.au or on tel: +61 3 8866 0400.

The National Health Priority Action Council (www.health.gov.au/pq/nhpa/) focuses on specific priority disease areas. Its role is to drive improvements in health services to achieve better outcomes in the national health priority areas, including for disadvantaged groups. Monitoring information on these areas is reported every two years through the publication, *Australia's Health* (AIHW 2002b). Further development of indicators with a focus on the quality of health care is underway.

The National Health Information Group (NHIG) (www7.health.gov.au/healthonline/nhig/nhig.html) has been established by Australian Health Ministers to provide advice on national health information requirements and related technology planning and management requirements. NHIG manages and allocates resources to health information projects and working groups where joint Commonwealth/State and Territory resources are involved. Two working groups of NHIG are:

The Statistical Information Management Committee advises on national health statistics, including data collection, storage, linkage and usage. This committee develops and coordinates the implementation of national minimum data sets; and

The National Health Performance Committee (www.health.qld.gov.au/nathlthrpt) develops and maintains a national performance measurement framework for the health care system. It reports to Health Ministers every second year against a small set of key indicators.

Steering Committee for the Review of Government Services (www.pc.gov.au/gsp) is a joint Australian Government, State and Territory initiative which develops indicators and reports annually on performance of government services across a broad range of functions including health. The Review focuses on comparisons of efficiency and effectiveness.

Despite these efforts indicators of the technical quality of health services remain limited. There are continued tensions in the search for sets of indicators that are meaningful at a national level and that can be useful for improvement purposes at the service provision level. There is a paucity of reliable and valid clinical data and limitations on the quality and usability of available data sets although there is effort to better link data sets to make the data more useful.

For further information see:

AIHW 2002b Australia's Health 2002 Canberra: AIHW

Commonwealth Department of Health and Aged Care 2000. The Australian health care system—an outline. Canberra: CDHAC.

European Observatory on Health Care Systems 2001. Health care systems in transition: Australia. Copenhagen: European Observatory on Health Care Systems.

Duckett SJ 2001. The Australian health care system. Oxford: Oxford University Press.

Chapter 2

Effectiveness

Effectiveness is probably the component of health care most readily identified because ultimately it represents the "bottom line," that is, whether care leads to improved outcomes in terms of health status and quality of life for patients.

- Institute of Medicine, 2001b

Chapter 2

Effectiveness: Introduction

Effectiveness means that the "care, intervention or action achieves its desired outcome" (National Health Performance Committee 2001). The Institute of Medicine in the United States defines effectiveness as "providing services based on scientific knowledge to all who could benefit, and refraining from providing services to those not likely to benefit" (Institute of Medicine 2001).

This chapter outlines information on the effectiveness of interventions for common diseases or conditions, organised to depict three consumer perspectives on health care:

- **Staying healthy** means getting help to avoid illness and remain well. This entails preventive care such as immunisations to prevent infectious diseases, cancer screenings to promote early detection and treatment of disease, and counseling on healthy behaviors.
- **Getting better** means getting help to recover from an illness or injury, such as acute myocardial infarction.
- **Living with chronic illness** means getting help for managing an ongoing condition such as diabetes. This often entails getting patient education, proper medication management, and regular follow-up care to prevent complications.

These data show improvements over time including:

- Improved rates of childhood immunisation (Chart 2-2);

- High rates of influenza vaccination in older adults (Chart 2-3);
- Improved rates of cervical and breast cancer screening (Charts 2-4 and 2-5); and
- Reduced prevalence of high blood pressure (Chart 2-7).

Yet, substantial opportunities to improve effective care are also evident, for example:

- Not all opportunities to advise patients on quitting smoking are taken up by their doctors (Chart 2-1);
- More than half of the people with high blood pressure are not treated for the condition (Chart 2-7);
- Only half the people with diabetes are diagnosed as having diabetes. For people with diagnosed diabetes, management of diabetes and screening for complications could be improved (Chart 2-9); and
- Many people with asthma who would gain improved control of symptoms, lung function and exacerbation risk by using preventer medications are either not using them at all or are not using them regularly (Chart 2-10).

Effectiveness: Summary of Charts and Findings

Chart 2-1 Smoking Cessation. Up to 50 per cent of smokers intend to quite smoking within the next six months. General practitioners identify the smoking status of only 65 percent of their patients. Advice on quitting is provided to only 50 per cent of patients identified as smokers.

Chart 2-2 Childhood Immunisation. Immunisation rates for Australian children have improved dramatically since 1997. Data for the December quarter 2003 show that around 8 per cent of children were not up-to-date with their immunisations at 12 months of age and 24 months of age. At 6 years of age 16.5 per cent of children were not up to date with their immunisations.

Chart 2-3 Immunisation for Older Adults. Seventy three per cent of people aged over 65 years received an influenza vaccination during the 2003 winter. One fifth of older people did not receive these potentially life saving vaccinations. Close to one third of persons aged over 40 years with high risk factors were not vaccinated.

Chart 2-4 Breast Cancer Screening and Outcomes. At least 57 per cent of women in the target group received mammography screening in 2000-2001. Mortality rates for breast cancer have declined since the commencement of organised breast cancer screening in Australia. There are opportunities to improve screening rates which are low for particular groups and lower in certain States and Territories.

Chart 2-5 Cervical Cancer Screening and Outcomes. Sixty-two per cent of women aged 20-69 years have a Pap smear every two years. Rates are lower for younger women. Mortality rates from cervical cancer have fallen by around 50 per cent since 1980 largely as a result of greater participation in cervical cancer screening.

Chart 2-6 HIV/AIDS Prevention. The number of Australians with newly diagnosed HIV fell dramatically from the mid 1980s to the late 1990s. The number of newly diagnosed HIV/AIDS cases in Australia fell from 1992. In the most recent year the number of cases of newly diagnosed HIV and AIDS both increased.

Chart 2-7 Treatment of High Blood Pressure. Rates of hypertension for Australians aged between 25-65 years have fallen significantly in the last 20 years. However, more than half of Australians with hypertension are not treated for the condition.

Chart 2-8 Managing Acute Coronary Heart Disease. Not all patients admitted to hospital for acute coronary heart disease receive ideal treatment. The proportion of patients receiving recommended interventions can be increased.

Chart 2-9 Stroke Prevention for Patients with Atrial Fibrillation. More strokes could be prevented through prescribing appropriate medication for people with atrial fibrillation.

Chart 2-10 Diabetes Management. Half the people with diabetes are undiagnosed. Many people with diagnosed diabetes do not receive optimal diabetes care.

Chart 2-11 Asthma Management. Many people with asthma who would gain improved control of symptoms, lung function and exacerbation risk by using preventer medications are either not using them at all or are not using them regularly. Between 65 and 80 per cent of people with asthma do not have a written asthma plan.

Chart 2-12 Treatment of Depression. There is a high level of unmet need for common mental disorders in patients seen by general practitioners. Less than half of patients identified by general practitioners as having a mental disorder receive evidence based treatments.

Effectiveness: Staying Healthy

Smoking Cessation

Why is this important? Smoking has serious health consequences. It is estimated around 19 000 deaths each year in Australia and 20 per cent of cancer deaths can be attributed to tobacco use (English et al 1995; Ridolfo and Stevenson 2001). Smoking is the most significant preventable cause of death and disease in Australia. Those who quit smoking can halve their risk of death from heart disease after one year, and their risk of lung cancer after ten years. General practitioners can play an important role in helping their patients to give up smoking. Data from 16 trials show that there is a small but significant increase in the proportion of patients who give up smoking when they have been advised by their general practitioner (Silagy and Stead 2003). As 80 per cent of the population see their general practitioner in any one year, advice from a general practitioner represents a good opportunity to assist patients to quit.

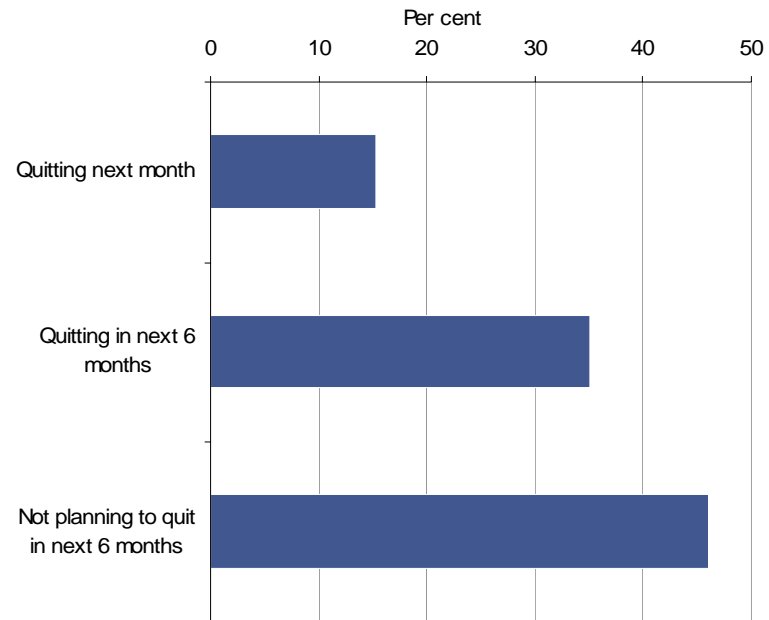
Findings: Around 15 per cent of Australian smokers report they intend to try to cease smoking in the next month, and a further 35 per cent report they intend to try to cease smoking in the next six months (Public Health Division 2002). Australian general practitioners identify the smoking status of around 65 per cent of their patients. Where they have identified that a patient smokes, they provide advice on quitting for only 50 per cent of patients (Dickinson et al 1989; Humair and Ward 1998; Young and Ward 2001, Wiggers and Sanson-Fisher 1997).

Implications: Doctors miss opportunities to provide advice to their patients to quit smoking. Even small increases in the provision of advice could have important effects on smoking cessation.

Chart 2-1 Smoking Cessation

Up to 50 per cent of smokers intend to quit smoking within the next six months. General practitioners identify the smoking status of only 65 percent of their patients. Advice on quitting is provided to only 50 per cent of patients identified as smokers.

Intention to quit smoking: current smokers aged 16 and over, NSW 1997 and 1998



Public Health Division, NSW Health Department 2002. Accessed 19 April 2004

Effectiveness: Staying Healthy

Childhood Immunisation

Why is this important? Immunisation is highly effective in reducing morbidity and mortality caused by vaccine-preventable diseases. Childhood vaccination for diphtheria was introduced in 1932 in Australia and use of vaccines to prevent tetanus, pertussis (whooping cough), and poliomyelitis became widespread in the 1950s, followed by measles, mumps and rubella in the 1960s. Since the introduction of childhood vaccination, deaths from vaccine-preventable diseases have fallen by 99 per cent and vaccinations are estimated to have saved some 78,000 lives (Burgess 2003).

Effectiveness in providing vaccination services can be measured by vaccination coverage at key milestones (such as 12 and 24 months and 6 years of age).

Childhood immunisation is a cornerstone of public health practice. The Immunise Australia Program is an Australian, State and Territory Governments initiative. Since 1997 this program has been also supported through the establishment of the Australian Childhood Immunisation Register (ACIR) which is managed by the Health Insurance Commission.

Findings: In March 1997, when the ACIR was established, 75 per cent of children were fully immunised at 12 months. Immunisation coverage for children aged 12 months increased to September 2003 and was 91.1 per cent of children at December 2003. Immunisation coverage for children aged 24 months has also increased, but from a lower base, to 91.5 per cent of children in December 2003. By December 2003, 83.5 per cent of six year olds were fully immunised. There were no marked differences between jurisdictions in immunisation coverage in 2002.

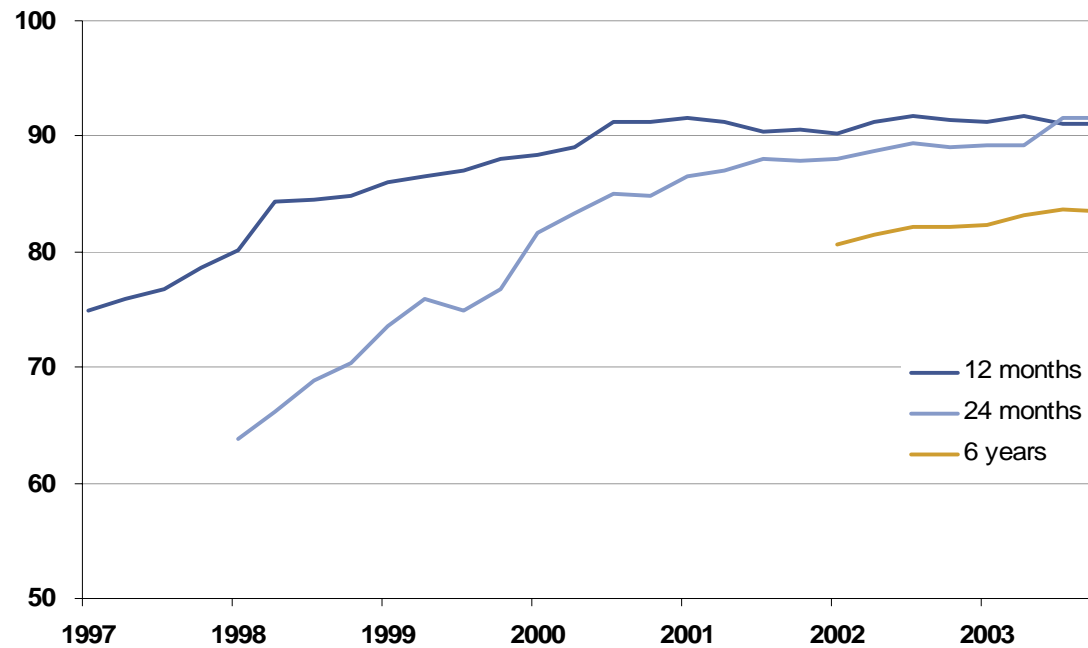
Between 1996 and 2000 there were an average of 3 deaths per year from the vaccine-preventable diseases of diphtheria, pertussis, tetanus, poliomyelitis, and measles, compared to an average of 1 032 deaths per year between 1926 and 1935 (Burgess 2003).

Implications: Increases in immunisation coverage since 1997 have resulted in Australia achieving a high level of childhood immunisation amongst younger children compared with most other countries. However, rates are not as high among children at six years of age.

Chart 2-2 Childhood Immunisation

Around 8 per cent of children are not up-to-date with their immunisations at 12 months of age and 24 months of age.
At 6 years of age 16.5 per cent of children are not up to date with their immunisations.

Per cent of children fully immunised at 12 months, 24 months and 6 years, Australia 1997-2003



Sources: National Centre for Immunisation Research and Surveillance of Vaccine Preventable Diseases (2002); Communicable Diseases Network Australia 2003

Effectiveness: Staying Healthy

Immunisation for Older Adults

Why is this important? The Australian Standard Vaccination Schedule, endorsed by the National Health and Medical Research Council (NHMRC 2002), recommends yearly influenza vaccination for those aged 65 years and over. Each year influenza and its consequences, together with pneumonia, account for many deaths in the elderly population and also place significant burden on the health system. In 2001 in Australia, influenza and pneumonia accounted for 2 702 deaths (the vast majority of which relate to pneumonia) and 62 917 or 1 per cent of hospital separations for the whole population. Influenza vaccination has been demonstrated to reduce the incidence of pneumonia, hospitalisation and death for older people (Nichol et al 1994; Gross et al 1995).

Findings: National monitoring of influenza vaccination of people aged 65 years and older began in 2002. Data presented in this report are for the 2003 winter only. An estimated 77 per cent of adults aged 65 years and over and living in the community received an influenza vaccine for the 2003 winter. Rates are higher for people aged 70 years and over. Rates are highest in South Australia (82.8 per cent of target population) and the Australian Capital Territory (80.7 per cent). The Australian Immunisation Handbook 8th Edition 2003 (NHMRC 2003), identifies additional population groups at

heightened risk from influenza including people suffering various circulatory, respiratory and immuno-suppressant conditions. Within risk groups aged 40 and over 67.4 per cent were vaccinated in 2003. Residents of aged care facilities were separately surveyed. It is estimated 86.7 per cent of residents of aged care facilities were vaccinated in 2003. In 2001–02, influenza and pneumonia were an underlying cause of death for 2 700 people over all age groups and for 2 250 people aged 75 years and over.

The Australian vaccination rate for adults aged 65 years and over compares favourably with that of the United Kingdom, where the rate was 66 per cent in 2001 (Department of Health UK 2002) and the United States of America where the rate was 65 per cent in 2000 (National Center for Health Statistics 2002).

Implications: Whilst Australia has achieved a relatively high rate of influenza vaccination for older people, one fifth of the target population does not receive an influenza vaccination. Close to one third of persons aged over 40 years with high risk factors was not vaccinated. Strategies to improve take up rates should be pursued, particularly for vulnerable populations.

Chart 2-3

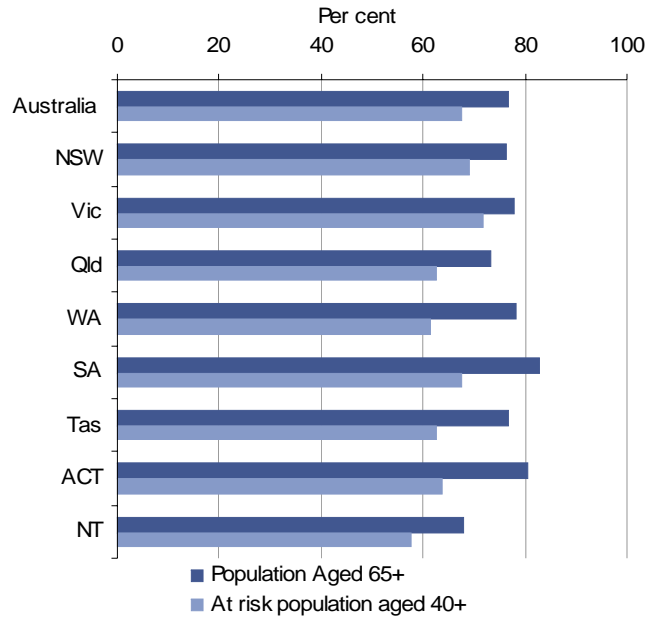
Immunisation for Older Adults

An estimated 77 per cent of people aged 65 years and over received an influenza vaccination during the 2003 winter.

One fifth of older people did not receive these potentially life saving vaccinations.

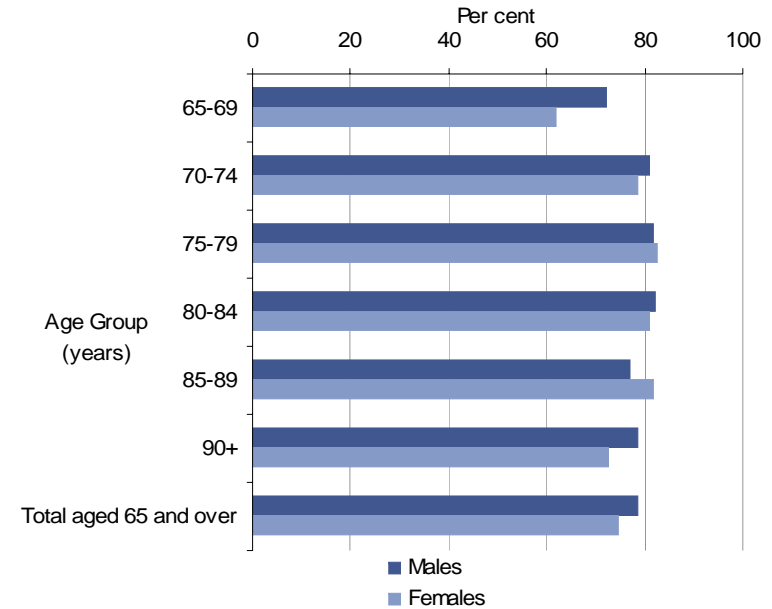
Close to one third of persons aged over 40 years with high risk factors were not vaccinated.

Percentage of community dwelling adults 65 years and over and at risk population aged 40 years and over who received an influenza vaccination for the previous winter by jurisdiction, Australia, 2003



Source: AIHW 2004

Percentage of community dwelling adults 65 years and over who have received an influenza vaccination for the previous winter by age and sex, Australia, 2003



Source: AIHW 2004

Effectiveness: Staying Healthy

Breast Cancer Screening and Outcomes

Why is this important? Breast cancer is a major cause of morbidity and death for women. Mammography screening offers an opportunity to detect breast cancer at an early stage and to begin effective treatment. Various studies have suggested that mammography screening is most effective in detecting breast cancer for women aged 50–69 years. Women in this age group are the target for Australia’s national screening program, BreastScreen Australia, although women aged 40–49 years and over 70 years are eligible to attend. Mammography screening provided through BreastScreen Australia targets women without symptoms. Other mammography for screening and diagnosis (for example for women with a strong family history or for investigation of breast symptoms) occurs in the private sector. Some private sector mammographies could be considered screening mammograms, but it is not possible to determine the exact number. Therefore the figures presented here will underestimate screening rates.

Findings: In 2000-2001, 56.9 per cent of women aged 50–69 years participated in the BreastScreen Australia program. Participation in the program has increased since 1996–1997 when 52.3 per cent of the target group participated. Participation has increased in all jurisdictions.

In 2000-2001 participation rates varied across States and Territories, with South Australia (64.3 per cent) Tasmania (60 per cent) and Victoria (59.2 per cent) achieving the highest rates.

Participation rates are lower in capital cities (54.8 per cent) and lower for women who do not speak English at home (48.9 per cent). However, participation rates are much lower for Aboriginal and Torres Strait Islander women (36.2 per cent).

Mortality rates for breast cancer have fallen since the early 1990s reflecting improvements in both screening and treatment. Mortality rates average across the five years to 2000-01 are 18 per cent lower than the rates observed in the five years to 1990-91 for women in the target group. Mortality rates are 12 per cent lower for women aged 70 years and over.

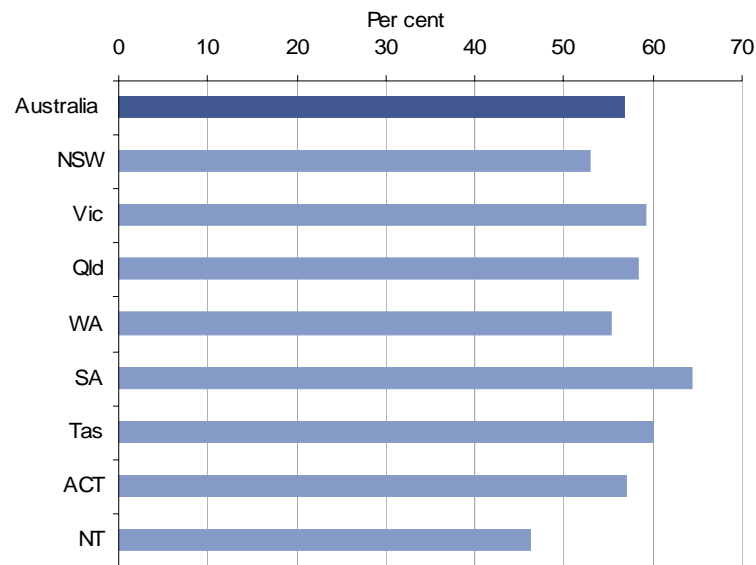
Implications: There are opportunities to improve screening rates which are low for Aboriginal and Torres Strait Islander women, women who do not speak English in the home, and women living in capital cities. Screening rates are significantly lower in certain States and Territories.

Chart 2-4

Breast Cancer Screening and Outcomes

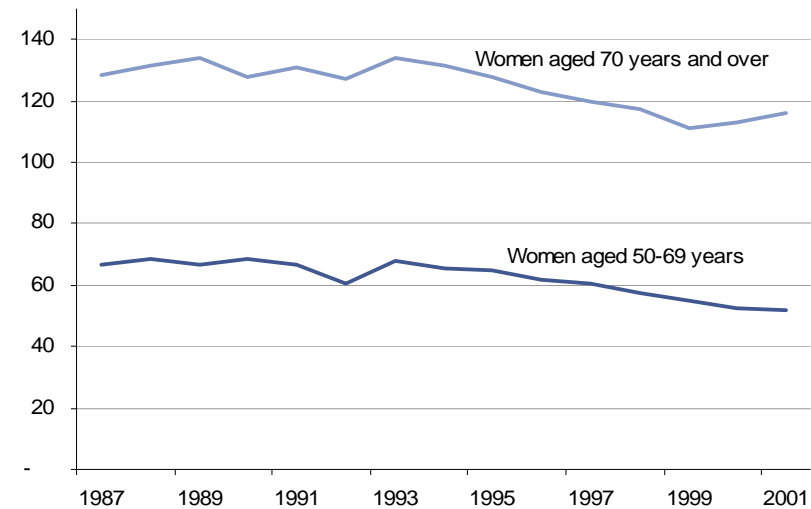
At least 57 per cent of women in the target group received mammography screening in 2000-2001. Mortality rates for breast cancer have declined since the commencement of organised breast cancer screening in Australia. There are opportunities to improve screening rates which are low for particular groups and lower in certain States and Territories.

Participation rates of women aged 50-69 years in BreastScreen Australia, by jurisdiction, bi-calendar years 2000 and 2001



Source AIHW 2003c

Mortality from breast cancer, rate per 100 000 women Australia, 1987-2001



AIHW (unpublished)

Effectiveness: Staying Healthy

Cervical Cancer Screening and Outcomes

Why is this important? Up to 90 per cent of all cases of cervical cancer could be prevented through regular screening. Increasing participation in cervical screening will reduce the number of women who develop cervical cancer and ultimately die from the disease. In Australia, it is recommended that women aged 20 to 69 years, who have ever been sexually active, have a Pap smear every two years.

The organised National Cervical Screening Program was established in 1991. Between 1988 and 1998 the mortality rate for cervical cancer in the age group 20 to 69 years fell by 53 per cent and the incidence fell by 41 per cent (AIHW 2003d, Taylor 2003). Cervical screening is mostly provided by general practitioners, although public sector providers such as family planning clinics and women's health services also play a role. States and Territories support screening programs through recruitment activities, population registers and reminder systems. The Australian Government is the primary source of funding through the Medical Benefits Scheme, coordinated national policy and quality standards in cervical cytology.

Findings: In 2000–01, 63 per cent of Australian women within the target age group were screened for cervical abnormalities. This represents a slight fall from the period 1998–99, when 66 per cent of Australian women within the target group were screened. The apparent decline in participation can be partly attributed to improvements in data linkage in the cervical cytology registers, and to changes in the hysterectomy fraction used to calculate the denominator.

Forty-nine per cent of women aged 20–24 years have been screened. Participation increases with age reaching a peak of 71 per cent for women aged 50–54 years. Participation drops for older women, decreasing to 45 per cent for women aged 65–69 years.

In 2000–2001, overall participation rates were highest for Tasmania (66.6 per cent) and South Australia (66.0 per cent) and lowest for New South Wales (59.8 per cent) and Queensland (58.1 per cent) (AIHW 2003d).

International comparison is difficult as many other countries adopt a three-year screening interval and some a five-year screening interval. Data from four States suggest that over 75 per cent of eligible women have been screened over a three-year period (various State Annual Reports, AIHW 2003c, Taylor R 2003).

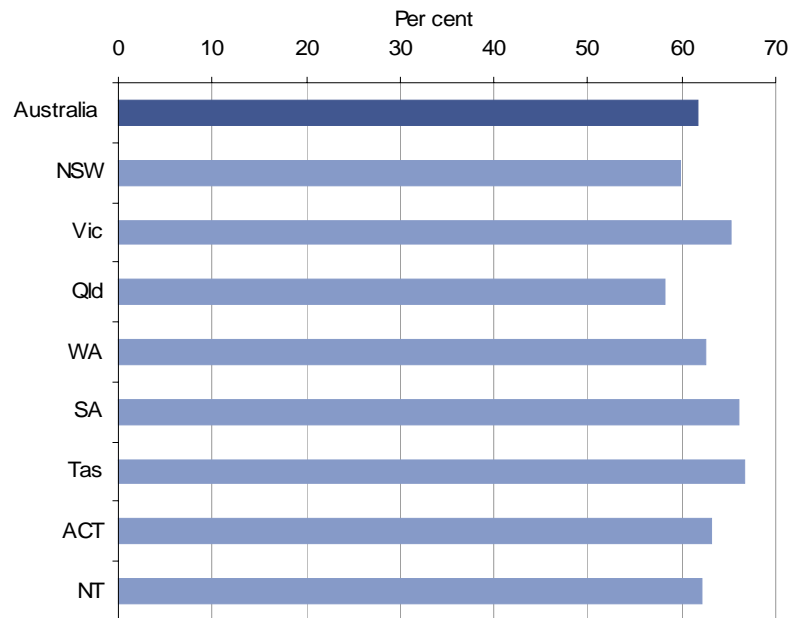
Mortality rates from cervical cancer have fallen by around 50 per cent since 1980 largely as a result of greater participation in cervical cancer screening.

Implications: A third of Australian women within the target group for the program do not have a Pap smear every 2 years, and a quarter of women do not have a Pap smear every 3 years. Improving screening rates, particularly for vulnerable populations represents an excellent opportunity to provide a highly effective method for preventing cervical cancer.

Chart 2-5 Cervical Cancer Screening and Outcomes

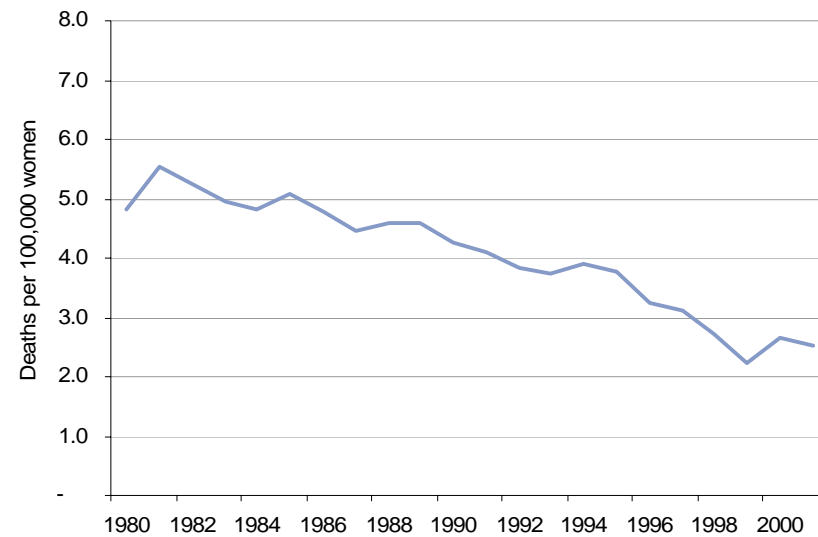
Sixty-two per cent of women aged 20-69 years have a Pap smear every two years. Rates are lower for younger women. Mortality rates from cervical cancer have fallen by around 50 per cent since 1980 largely as a result of greater participation in cervical cancer screening.

Percentage of women aged 20-69 years screened for cervical abnormalities in a 24 month period, Australia, by Jurisdiction bi-calendar years 2000 and 2001



Source: AIHW 2003d

Mortality from cervical cancer, rate per 100 000 women Australia, 1980-2001



Source: AIHW Unpublished.

Effectiveness: Staying Healthy

HIV/AIDS Prevention

Why is this important? The Human Immunodeficiency Virus (HIV) is the virus that causes Acquired Immune Deficiency Syndrome (AIDS). HIV attacks the immune system, after a number of years resulting in chronic, progressive illness, leaving affected people vulnerable to opportunistic infection. Antiretroviral drug treatment can slow this progression in the majority of cases.

HIV/AIDS is having a devastating effect on nations that have been unable to contain the epidemic. Australia's comprehensive national approach to responding to HIV/AIDS has long been regarded as one of the best in the world. From the endorsement of the first National HIV/AIDS Strategy in 1989, Australia has recognised the need for coordinated action in response to HIV.

Findings: From the first detection of HIV in Australia there have been an estimated 19 674 HIV diagnoses to 31 December 2002. There have been 9 083 cases of AIDS and 6 272 deaths due to AIDS in Australia, cumulative to 31 December 2002. The annual number of AIDS diagnoses in Australia peaked at 953 cases in 1994 and steadily declined to 246 AIDS cases in 2002.

The decline in AIDS incidence from 1994 was due to a fall in HIV incidence occurring in the mid 1980s, as well as the effectiveness since mid 1996 of antiretroviral therapy in delaying progression from HIV to AIDS. The annual number of cases of newly diagnosed HIV infection fell from a peak in 1994 of 953 cases to 650 cases in 1998. Since then, the number of newly diagnosed cases has increased to 808 in 2002. AIDS incidence and estimated HIV prevalence in

Australia at the end of 2002 were 1.3 and 67 per 100 000 population, respectively.

AIDS incidence in Australia in 2002 was similar to that recorded in the United Kingdom and was substantially lower than in France (3.3), Spain (7.1) and the United States (15.4 in 2001).

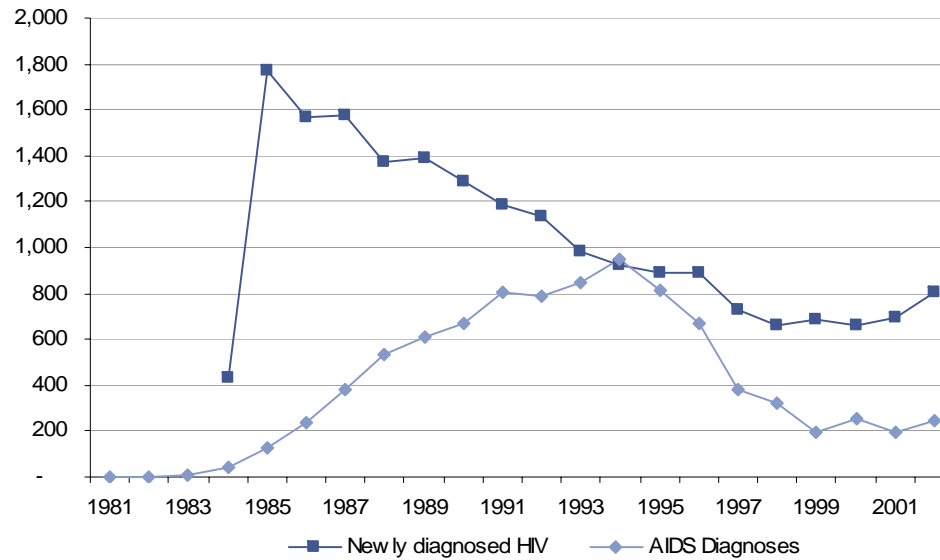
Implications: Australia has been relatively successful in responding to the HIV/AIDS epidemic. Recent increases in newly diagnosed HIV highlight the need to revitalise Australia's response.

Chart 2-6

HIV/AIDS Prevention

The number of newly diagnosed HIV infections in Australia fell dramatically from the mid 1980s to the late 1990s.
 The number of AIDS cases in Australia fell from 1992.
 In 2002 the number of cases of newly diagnosed HIV and AIDS both increased.

Diagnoses of HIV infection and AIDS in Australia, 1981- 2002



Source: National Centre for HIV Epidemiology and Clinical Research, 2003

Effectiveness: Staying Healthy

Treatment of High Blood Pressure

Why is this important? High blood pressure (hypertension) is a major risk factor for cardiovascular disease. People with high blood pressure have higher risks of stroke, coronary heart disease, heart failure, kidney failure, blindness and death. High blood pressure can be easily detected. All adults should have their blood pressure assessed regularly by their general practitioners. High blood pressure is the most common problem managed by general practitioners, accounting for 6.1 per cent of all problems managed and 8.7 per cent of all prescriptions (AIHW: Britt et al 2003). Effective treatments of high blood pressure have been shown to reduce rates of heart attack, stroke, heart failure and kidney disease and death.

Findings: The estimated prevalence of hypertension in Australian adults has fallen significantly from 45.4 per cent of men aged 25-65 years in 1980 to 22.3 per cent in 1999-2000. For women aged 25-65 years the estimated prevalence has fallen from 29.4 per cent in 1980 to 15.6 per cent in 1999-2000 (AIHW: Mathur 2002: 22).

The 1999–2000 *Australian Diabetes, Obesity and Lifestyle Study* estimated that around 28.6 percent or 3.7 million Australians over the age of 25 (including people aged over 65 years) had high blood pressure or were on medication for that condition (Briganti et al 2003: 138). 15.2 per cent of adults aged 25 and over had untreated hypertension.

Of the people with untreated hypertension just over half warranted treatment if current cardiovascular disease prevention guidelines were applied. For the other half, close monitoring would be required.

The study found that 80.8 per cent of people with undiagnosed hypertension had had their blood pressure measured in the last 12

months. 71.4 per cent of people without hypertension had had their blood pressure checked in the last 12 months.

For people with treated hypertension, 39.7 per cent had blood pressure measures within the normal range.

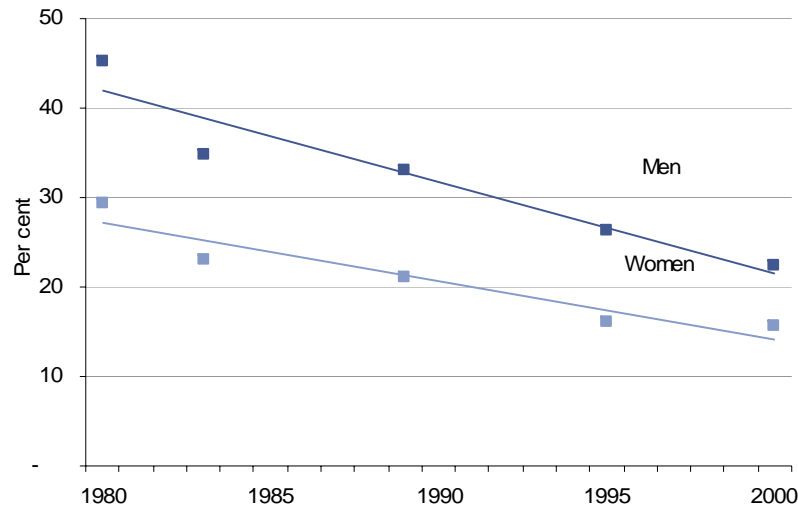
Implications: Blood pressure is frequently assessed by general practitioners. Around 80 per cent of people with untreated hypertension had had their blood pressure measured in the last 12 months. It is not clear why treatment for high blood pressure was not initiated. It appears “reluctance to treat hypertension, on the part of the doctor or the patient, is the probable contributor to the high prevalence of untreated hypertension” (Briganti et al 2003: 138). Overseas studies suggest contributing factors include lack of awareness of guidelines, doctors being less aggressive with mild hypertension (particularly in the case of older patients), patient compliance and attitudes to treatment. A priority for Australia is to research factors contributing to rates of untreated hypertension, and develop strategies to address these factors.

Chart 2-7

Treatment of High Blood Pressure

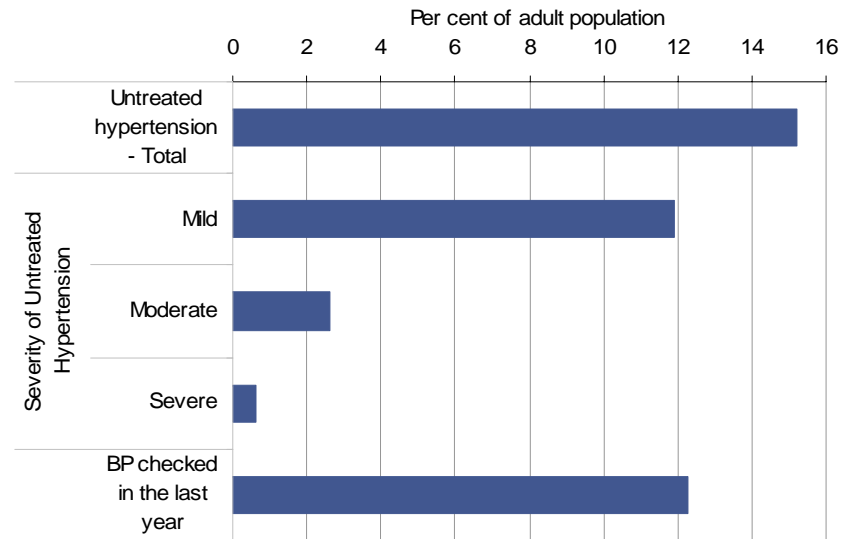
Rates of hypertension for Australians aged between 25-65 years have fallen significantly in the last 20 years. However more than half of Australians with hypertension are not treated.

Estimated prevalence of hypertension (treated and untreated) in adults aged 25-64 years, Australia 1980 to 1999-2000



Source: AIHW: Mathur 2002: 22

Per cent of population aged 25 years and older, assessed as having untreated hypertension, Australia 1999-2000



Source: Briganti et al 2003

Effectiveness: Getting Better When Sick

Managing Acute Coronary Heart Disease

Why is this important? In 2000–01 there were 48 238 acute coronary heart disease events among Australians aged 40-90 years, where the person either died from coronary heart disease or was admitted to hospital for an acute myocardial infarction but did not die (AIHW: Mathur 2002). Whilst mortality rates for coronary heart disease fell by 34 per cent between 1994 and 2001, this disease remains a significant cause of death. Treatment of patients admitted to hospital with acute myocardial infarction and unstable angina requires a range of interventions. There is now strong evidence that these interventions are effective (Aroney et al 2000; Braunwald et al 2000; British Cardiac Society 2001). However, not all patients admitted for these conditions receive care consistent with this evidence.

Findings: One Australian study, involving three teaching hospitals in Queensland, has examined the extent to which treatments provided to patients admitted with acute coronary syndrome accord with evidence based guidelines (Scott, Denaro, Flores et al 2002). Each of these treatments had a strong evidence base, demonstrating they contribute to improved survival of patients with these conditions. The Queensland study found a high rate of provision for certain indicated treatments for ideal patients, but for other treatments rates indicated room for improvements. For example, whilst 100 per cent of patients eligible for thrombolysis treatment received this treatment, only 76 per cent of these patients received this treatment within 1 hour of presentation.

Data from the Australian Council of Healthcare Standards show that in 2002, 77 to 80 per cent of patients with an acute myocardial infarction requiring thrombolysis receive thrombolytic therapy within one hour of presentation to the hospital or emergency department, for the 178 hospitals reporting these indicators (ACHS 2003). Rates have improved since being first measured in 1998. Some hospitals achieve higher rates. Rates achieved by the top 20 per cent of hospitals are around 10 per cent higher than the average of all hospitals.

The Queensland study also found rates of access to early coronary angiography (75 per cent of patients), and treatment with beta-blockers (84 per cent), ACE inhibitors (73 per cent) and lipid lowering drugs (82 per cent) could be improved.

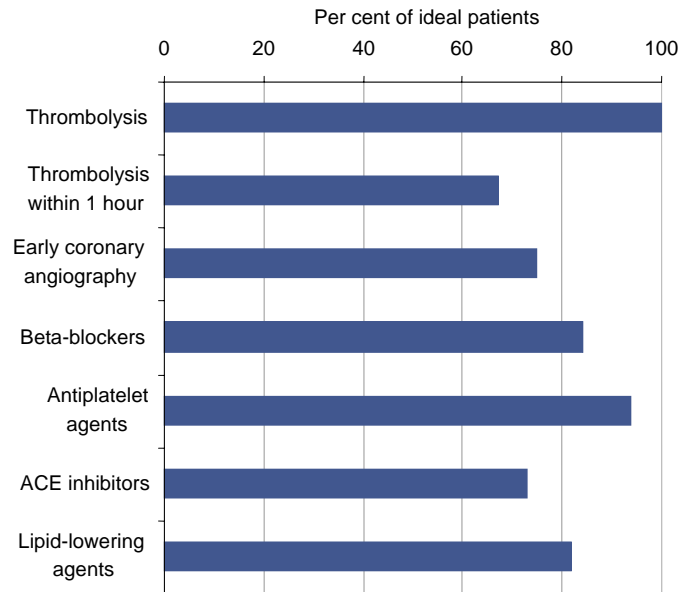
Implications: Ideal treatment for people with acute coronary syndromes is changing, for example, with primary angioplasty emerging as a feasible clinical option for patients close to tertiary facilities. Nevertheless there remain significant opportunities to ensure higher proportions of eligible patients receive treatment consistent with the evidence for these life threatening conditions. There is good evidence that implementing quality improvement processes can have a material influence on improving quality of care for people with acute coronary syndromes and on reducing the likelihood of death (See Chapter 8 and Scott et al 2001).

Chart 2-8

Managing Acute Coronary Heart Disease

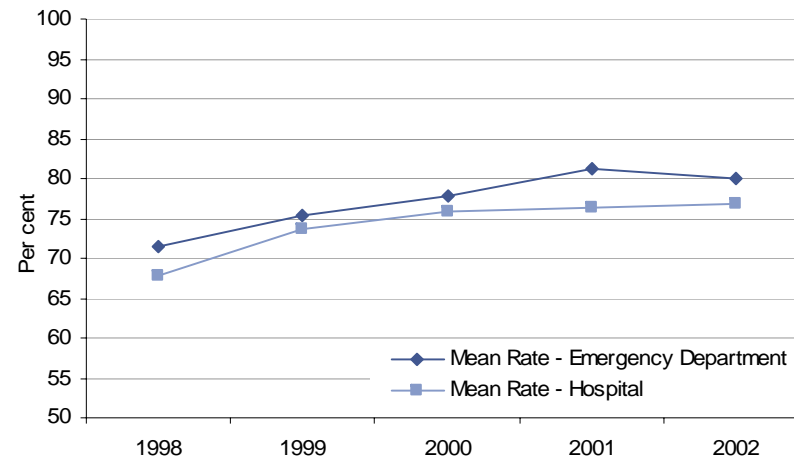
Not all patients admitted to hospital for acute coronary heart disease received ideal treatment.
The numbers of patients receiving recommended intervention can be increased.

Patients who received interventions for acute coronary syndrome - per cent of patients assessed as being ideal candidates for intervention, three Queensland tertiary hospitals, 2000-2001



Source: Scott, Denaro, Flores et al 2002

Per cent of patients with an acute myocardial infarction (AMI) requiring thrombolysis who receive thrombolytic therapy within one hour of presentation to: (a) the emergency department or (b) the hospital, selected hospitals, Australia 1998 to 2002



Source: ACHS 2002: Emergency Department indicator based on 126 hospitals reporting in 2002; the Hospital indicator based on 52 hospitals reporting in 2003. Reporting hospitals identified 3 725 patients admitted for AMI

Effectiveness: Living with Chronic Illness

Stroke Prevention for Patients with Atrial Fibrillation

Why is this important? Strokes claimed over 12 000 lives in 2001. Each year, around 40 000 Australians have a stroke, with 70 per cent of these first-ever strokes. Strokes can occur at any age but around 50 per cent affect people aged over 70 years. Stroke is the leading cause of long-term disability in adults and it places great demands on family members and caregivers.

Atrial fibrillation, a rapid, irregular and chaotic beating of the heart, increases the risk of stroke. With atrial fibrillation, the heart does not completely empty of blood, increasing the likelihood that clots will form that can break off and travel to the brain, causing a stroke.

There is strong evidence that prescription of anticoagulants can prevent stroke in some patients with atrial fibrillation, particularly those with high risks of stroke such as people who have previously had a stroke, have high blood pressure, have heart failure and who are older (Koudstaal 2003). The NHMRC has published clinical guidelines on the prevention of strokes using anticoagulants (NHMRC 1997).

Findings: A recent Australian study in one tertiary centre found that only 16 per cent of patients treated for stroke, who also had current or past atrial fibrillation, were prescribed warfarin at discharge. The study found 65 per cent of patients with atrial

fibrillation could have received warfarin if published clinical guidelines were followed (Evans 2002).

Another study of patients admitted for stroke in eight metropolitan hospitals across Australia found that of the 363 patients with ischaemic stroke and atrial fibrillation, 83 per cent received either warfarin (23 per cent) or an antiplatelet agent (51 per cent), or both (9 per cent), at discharge (Duffy et al 2003).

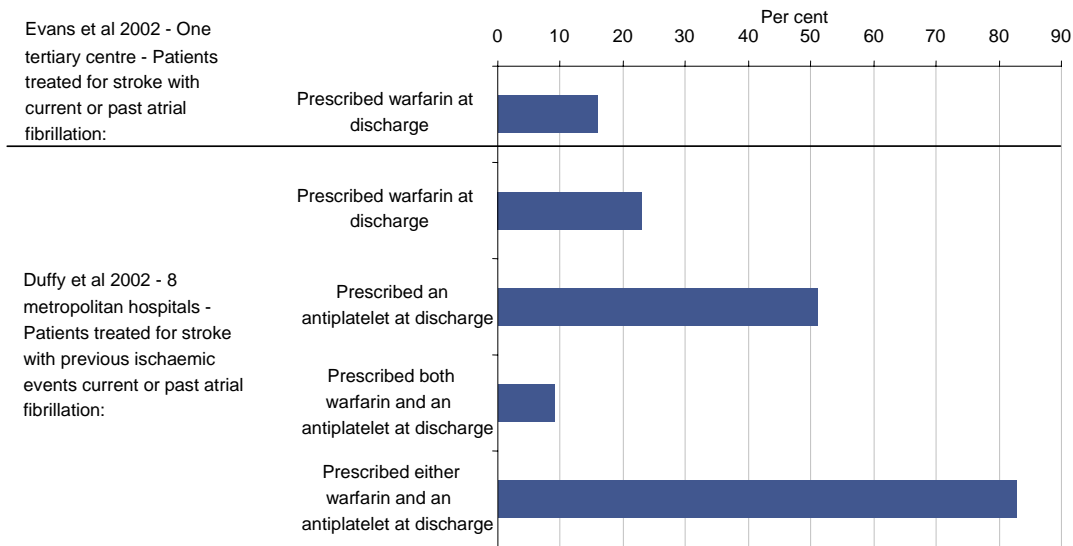
Implications: The wider use of anticoagulants in patients with atrial fibrillation is supported by the evidence. While there are risks and costs associated with anti-coagulant use and monitoring, the wider use of warfarin in certain patients could prevent a significant number of strokes each year (NICS 2003).

Chart 2-9

Stroke Prevention for Patients with Atrial Fibrillation

More strokes could be prevented through prescribing appropriate medication for people with atrial fibrillation.

Patients treated for stroke with current or previous atrial fibrillation, discharged with appropriate medication, selected Australian studies



Effectiveness: Living with Chronic Illness

Diabetes Management

Why is this important? It is estimated 900 000 Australians aged over 25 years have diabetes, although the condition is undiagnosed for one in two people (Dunstan et al 2001). Diabetes is a chronic illness that can have serious health consequences. A major aim of the clinical management of diabetes is to maintain blood glucose levels at near to normal levels. Two major trials have demonstrated that improved diabetes control is effective in preventing complications of diabetes such as cardiovascular, eye, kidney, and nerve damage (UK Prospective Diabetes Study and the Diabetes Control and Complications Trial). Assessment of blood glucose control through measurement of glycosylated haemoglobin (HbA1c) is considered a fundamental element of clinical management of diabetes, to prevent progression of the disease. Good management also requires regular examination of blood pressure, body mass index, cholesterol, triglycerides, microalbumin (for signs of kidney problems), eyes and feet.

Most people with diabetes in Australia are advised by their general practitioner in managing their diabetes. The Royal Australian College of General Practitioners and Diabetes Australia have developed guidelines identifying an annual cycle of care that involves appropriate management of diabetes. General practitioners participating in the Practice Incentive Program (PIP) provide patients with diabetes within their practice with an annual cycle of care, and are encouraged to detect people with undiagnosed diabetes within their practice populations.

Findings: The *Australian Diabetes, Obesity and Lifestyle Study* (AusDiab) found that 82 per cent of people with diagnosed diabetes reported they had had an eye examination within the previous 2 years, and 50 per cent reported that they had had their feet examined in the last 12 months (Tapp, Zimmet, Harper et al 2004).

People whose diabetes was treated with insulin had higher examination rates.

Data from 16 Divisions of General Practice that have implemented diabetes registers and participate in a process of quality improvement with the Centre for General Practice Integration Studies (2003), indicate regular examinations do not occur as often as the clinical evidence indicates. For example 70.1 per cent of patients on these registers had their HbA1c levels tested within the year, suggesting room for improvement.

Data from the Health Insurance Commission indicate 135 943 patients received an annual cycle of care for diabetes in 2002, estimated to be around 27 per cent of people with diagnosed diabetes. The vast majority (98.3 per cent) of these patients were from practices that participated in the diabetes management initiative.

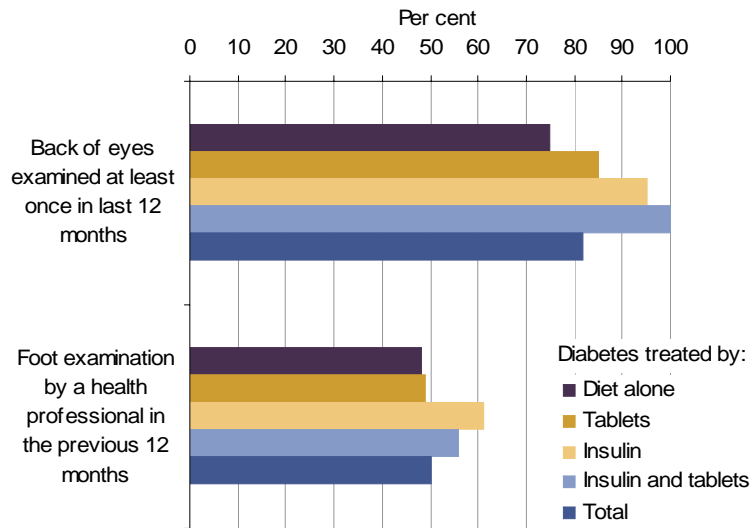
Implications: Various strategies are required to improve management of diabetes. Only 65 per cent of general practitioners use a diabetes register, which is crucial to improving compliance with recommended management. The Centre for General Practice Integration Studies has shown that through participation in the quality improvement process, general practitioners can recruit more patients onto diabetes registers, and through use of these registers improve quality of care for people with diabetes.

Chart 2-10

Diabetes Management

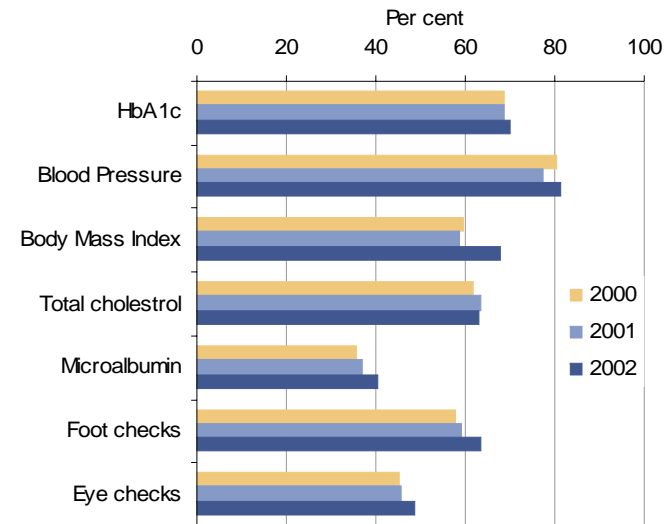
Half the people with diabetes are undiagnosed.
 Many people with diagnosed diabetes do not receive optimal diabetes care.

**Frequency of eye and foot examinations for people with diabetes
 AusDiab survey, Australia, 1999 - 2000**



Source: Tapp, Zimmet, Harper et al 2004

Per cent of patients having assessment where the general practitioner was seen at least once that year, patients on diabetes registers, 16 Divisions of General Practice, Australia 2000- 2002



Source: Centre for GP Integration Studies 2003

Effectiveness: Living with Chronic Illness

Asthma Management

Why is this important? Fourteen to 16 per cent of children and 10 to 12 per cent of adults in Australia have currently diagnosed asthma (Australian Centre for Asthma Monitoring 2003). The prevalence of asthma in Australia is high by international standards. For adults it appears prevalence rates have not changed in recent years. However for children, there is consistent evidence that prevalence increased during the 1980s and into the early 1990s (Australian Centre for Asthma Monitoring 2003), although in more recent years the trend has stabilised (Robertson et al 2004; Toelle et al 2004).

Asthma is an important cause of hospitalisation, particularly for children. In 2002, there were 397 deaths attributed to asthma. Mortality from asthma is higher for older people. Asthma is identified as a problem in around 3 per cent of GP consultations.

Inhaled corticosteroids, commonly known as “preventer medications”, improve control of symptoms and lung function and reduce the incidence of disease exacerbations and the need for oral corticosteroid therapy (Adams et al 2004). They are almost certainly also responsible for a reduced risk of death due to asthma (Suissa & Ernst 2003). Current guidelines recommend the use of preventer medications in patients with asthma who meet certain specified criteria (National Asthma Council 2002).

The use of an individualised written asthma action plan that has instructions on how to recognise when asthma is getting worse and what actions to take when this occurs has been demonstrated to

improve outcomes in patients with asthma (Gibson et al 2002; Gibson & Powell 2004).

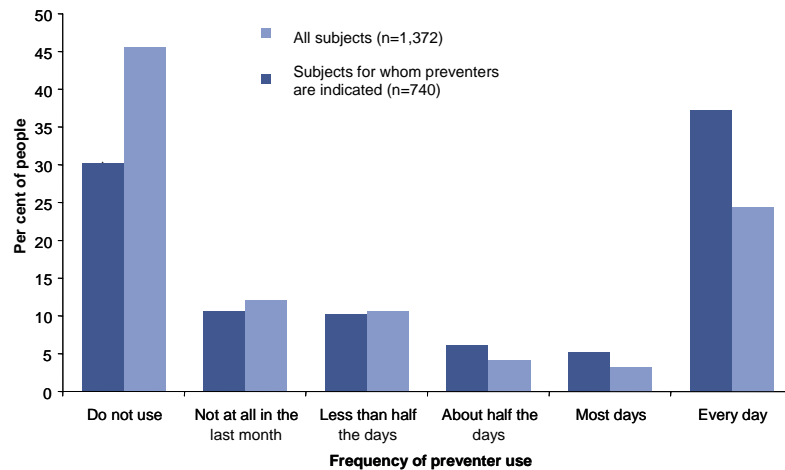
Findings: Many people with asthma who would gain improved control of symptoms, lung function and exacerbation risk by using preventer medications are either not using them at all or are not using them regularly. Similarly, many people with asthma do not have a written asthma action plan and there has been no increase in the rate of possession of these plans during the 1990s.

Implications: There are significant opportunities to improve these aspects of asthma management. Medical benefits for structured asthma care were not directly claimable until 2001 when the Australian Government introduced the Asthma 3+ Visit Plan under the Practice Incentive Program (PIP) based on evidence that self monitoring and regular medical review will improve patient outcomes (Gibson et al 2003). The program requires the development and ongoing review of a plan over at least three general practice visits for patients with moderate or severe asthma. Between March 2001 and June 2003, around 60 000 claims had been made under the Plan. Further research is required to identify the patient, doctor and system barriers to the uptake of these effective elements of asthma management, and to develop and measure population-based indicators of the effectiveness of interventions to reduce these barriers.

Chart 2-11 Asthma Management

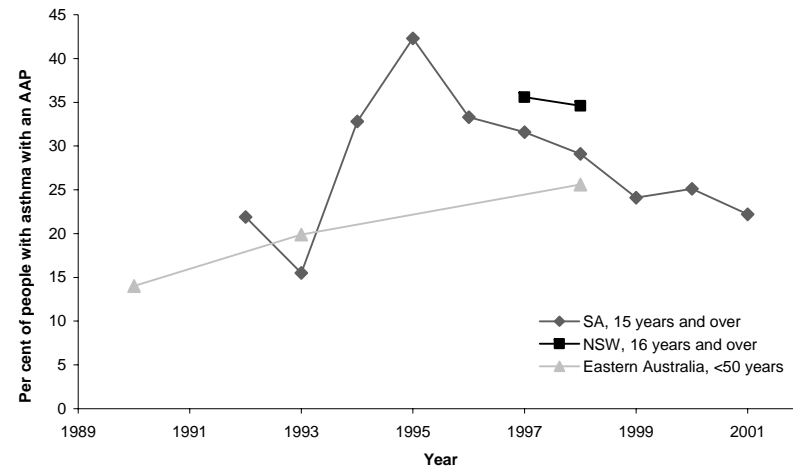
Many people with asthma who would gain improved control of symptoms, lung function and exacerbation risk by using preventer medications are either not using them at all or are not using them regularly. Between 65 and 80 per cent of people with asthma do not have a written asthma plan.

Frequency of preventer use in people with asthma, aged 16 to 54 years, New South Wales, 1997



Source: Marks et al. 2000.

Changes over time in the proportion of people with asthma who report possession of a (written) asthma action plan, Australia, 1990–2001



Sources: Comino et al. 1996; Gibson et al. 2000, Public Health Division 2001; Wilson et al. 2002, 2003.

Effectiveness: Living with Chronic Illness

Treatment of Depression

Why is this important? Depression is a common condition amongst Australians, which can result in a significant disruption to a person's normal lifestyle. Many people with depression also experience problems with anxiety or substance misuse. Depression is most often treated by general practitioners, either alone, or in partnership with specialist mental health services (Ellis, Smith 2002).

Findings: In a survey conducted in 1998-99, Australian general practitioners did not recognise mental disorders in 56 per cent of patients including 46 per cent of patients with a higher level of mental disorders (Hickie, Davenport, Scott et al 2001). Non-specific, non-pharmacological interventions are the most common form of intervention for patients with common mental disorders. Even for patients with the most severe level of psychological disorders, only 27 per cent received pharmacological or specific evidence based non-pharmacological treatments (Hickie, Davenport, Naismith 2001).

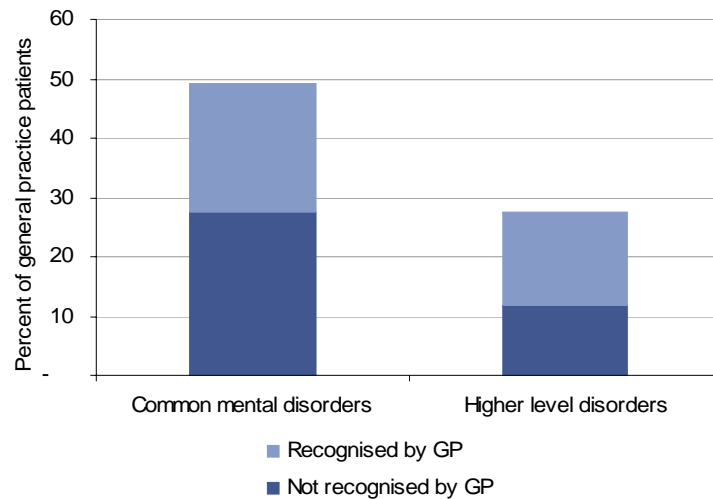
Whilst these findings suggest that general practitioners do not take all opportunities to identify and treat mental disorders, there have been significant increases in the prescribing of antidepressants in Australia since 1990. For adults there is an association between the increase in use of antidepressants and a reduction in rates of suicide. This association is strongest for older adults where the increase in use of antidepressants has been greatest (Hall, Mant, Mitchell et al 2003). However, there are issues concerning the safety and appropriateness of increases in prescribing of antidepressants for children, particularly the selective serotonin reuptake inhibitors (Whittington, Kendal, Fongary et al 2004; Jureidini, Doecke Mansfield et al 2004). These issues are currently being investigated by the Therapeutic Goods Administration.

Implications: General practitioners can play an important role in the treatment of depression. An important issue is the promotion of more systematic adoption of methods for screening for mental disorders by general practitioners (Hickie, Davenport Scott et al 2001). Guidelines have been developed recently for the treatment of depression in the primary care setting (Ellis, Smith 2002).

Chart 2-12 Treatment of Depression

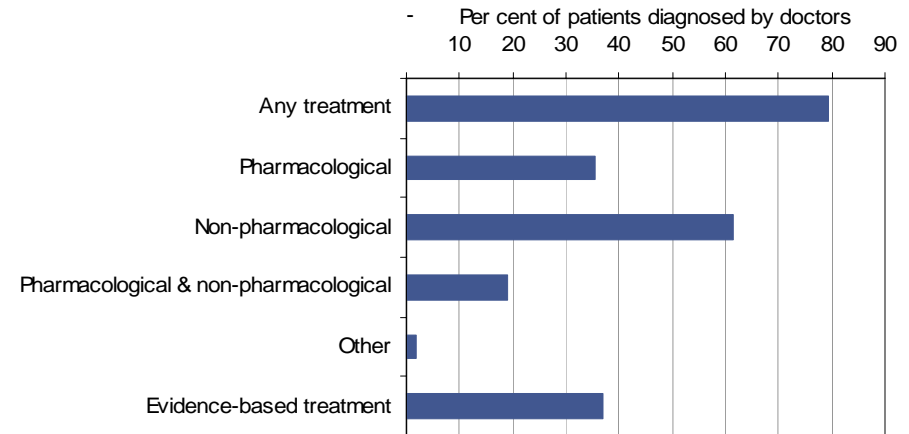
There is a high level of unmet need for common mental disorders in patients seen by general practitioners.
Less than half of patients identified by general practitioners as having a mental disorder, receive evidence based treatments.

Recognition of mental disorders in patients of general practitioners, cross sectional sample of Australian general practice, 1998-99



Source: Hickie, Davenport, Scott et al 2001

Treatments provided by general practitioners: per cent of patients diagnosed as having a mental disorders by the general practitioner cross sectional sample of Australian general practice, 1998-99



Source: Hickie, Davenport, Naismith et al 2001
Note: the categories presented are not mutually exclusive

Chapter 3

Appropriateness

Appropriateness - care, intervention or action provided is relevant to the client's needs and based on established standards.

- National Health Performance Committee 2001

Chapter 3

Appropriateness: Introduction

Appropriateness means that the "care, intervention or action provided is relevant to the client's needs and based on established standards" (National Health Performance Committee 2001).

In this chapter we review a number of indicators that suggest more appropriate provision or organisation of care is possible.

Some indicators suggest improvements in the appropriateness of care have occurred:

- **Prescribing of antibiotics** generally, and for upper respiratory tract infections, has declined over the last five years; and
- **Hysterectomy rates** have declined.

However, there is clear evidence that appropriateness might be improved further in these and other areas:

- **Prescribing of antibiotics** is still too common;
- **Geographic location** determines the use of hysterectomy. There is significant variation in the use of hysterectomy between different geographic localities in Australia, which is unlikely to be related to underlying need, and more likely to reflect different patterns of medical care;
- **Caesarean section rates** have been rapidly increasing. The implications of this trend for the health of women and babies has not been adequately assessed; and

- **More effective primary care** offering early interventions for both acute and chronic conditions could allow a large number of admissions to hospital to be avoided.

Appropriateness: Summary of Charts and Findings

Chart 3-1 Antibiotic Prescribing for Upper Respiratory Tract Infection. Prescribing of antibiotics by general practitioners has declined over the last five years. Prescribing of antibiotics for upper respiratory tract infections has also declined. However, antibiotics still appear to be overused for conditions for which they have no or little clinical benefit.

Chart 3-2 Hysterectomy Rates. One in five women will undergo a hysterectomy by the age of 50. Use of hysterectomy varies between regions across Australia. There appear to be systematic differences related to socio-economic status and whether a person lives in a metropolitan, rural or remote region. There are large unexplained variations between geographical localities in the use of this procedure.

Chart 3-3 Caesarean Section Rates. Caesarean section rates are rapidly increasing across Australia. Rates are higher for mothers treated as private patients in both public and private hospitals.

Chart 3-4 Potentially Avoidable Hospitalisations. In 2001-02 there were 247 732 hospitalisations for acute conditions and 343 649 for chronic condition that may have been prevented by the provision of earlier or non-hospital care.

Appropriateness

Antibiotic prescribing for Upper Respiratory Tract Infection

Why is this important? Upper respiratory tract infections are one of the most common problems managed by general practitioners, being present in around 6 to 7 per cent of general practice encounters (AIHW: Britt et al 2003). Upper respiratory tract infections without complications are most often caused by viruses. Antibiotics have no efficacy in the treatment of viral infections, but are still frequently prescribed when they occur.

Overuse of antibiotics increases bacterial antibiotic resistance in the general population. A decline in the prescribing rate of antibiotics generally and the prescribing rates for upper respiratory tract infection problems may be an indication of the more appropriate use of antibiotics and management of viral infections.

Findings: In 2002-03 antibiotics were prescribed in 14.3 per cent of general practice encounters, a decline from 17.3 per cent in 1998-99 (AIHW: Britt et al 2003). The prescribing rate of antibiotics for upper respiratory tract infections declined from 42.1 per 100 upper respiratory tract infections managed by general practitioners in 1998-99 to 33.1 per 100 problems in 2001-02, but increased slightly in 2002-03 to 35.1 per cent (AIHW: Britt et al 2003).

Between 1998-99 and 2002-03 the relative prescribing of narrow spectrum antibiotics (as a percentage of antibiotic prescribing for upper respiratory tract infections) increased, suggesting a move towards the more appropriate management of upper respiratory tract infections.

Implications: There are indications that there have been improvements in appropriateness of prescribing of antibiotics by general practitioners. However, over use of antibiotics remains a major problem that requires attention across the health system.

Chart 3-1

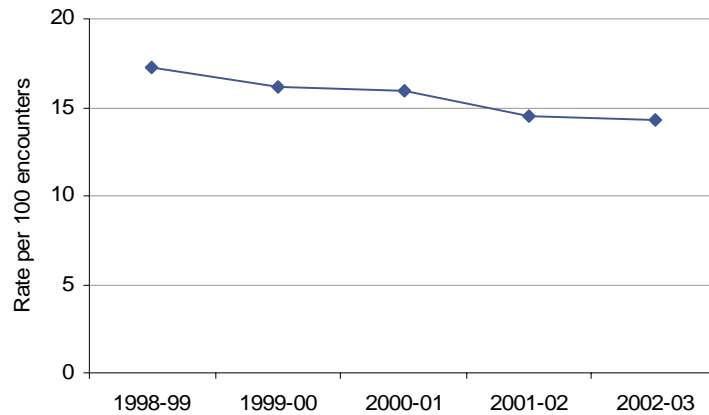
Antibiotic prescribing for upper respiratory tract infection

Prescribing of antibiotics by general practitioners has declined over the last five years.

Prescribing of antibiotics for upper respiratory tract infections has also declined.

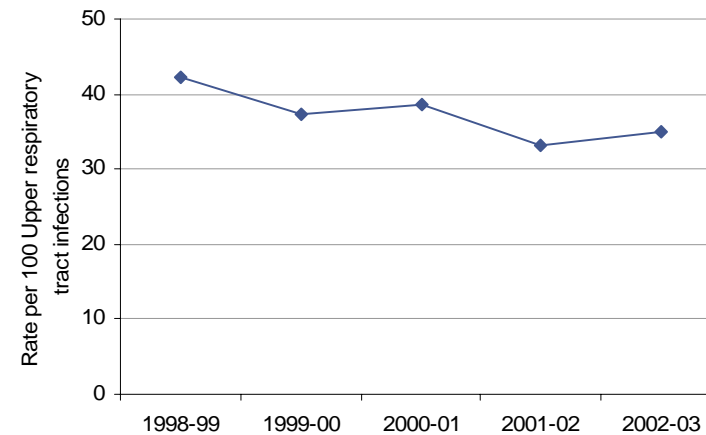
However, antibiotics still appear to be overused for conditions for which they have no or little clinical benefit.

**Rates of antibiotic prescribing per 100 general practice encounters
1998-99 to 2002-03**



Source: AIHW: Britt, Miller, Knox et al 2003

**Rates of antibiotic prescribing per 100 upper respiratory tract
infections managed in general practice encounters
1998-99 to 2002-03**



Source: AIHW: Britt, Miller, Knox et al 2003

Appropriateness

Hysterectomy Rates

Why is this important? Hysterectomy involves the partial or full removal of the uterus. It is one of the most common surgical procedures performed in Australian hospitals. Just under one in ten women will undergo a hysterectomy by the age of 40 years and around one in five will undergo a hysterectomy before the age of 50 years (Graham et al 2001). The procedure is usually performed to treat a range of conditions including recurrent uterine bleeding, chronic pelvic pain, or menopause, usually in some combination. Hysterectomies can also be performed to treat genital cancer or in cases of trauma.

Although there is no nationally agreed appropriate hysterectomy rate, it is believed that hysterectomies could be overused. Several studies have shown that the variation in hysterectomy rates between regions cannot be explained by the underlying patterns of disease (AHRQ 2002).

Findings: In 2001–02 there were 4.54 hysterectomies performed for every 1 000 Australian women aged 15–69 years (AIHW 2003a).

Hysterectomy rates have declined by around 20 per cent since 1993–94. Hysterectomy rates were highest for women aged 40–49 years.

The hysterectomy rate was highest in inner regional (5.27 per 1 000 women aged 15–69 years) and outer regional (5.23) areas. Rates were slightly lower than the national average for major cities (4.27) and remote areas (4.57). Rates were lowest for the most remote regions (3.55).

Hysterectomy rates were significantly lower for women in the most advantaged socioeconomic areas (4.04 per 1 000 women aged 15–69 years).

Rates vary between jurisdictions, with the highest rates reported for South Australia and the lowest for the Northern Territory and New South Wales.

There is considerable variation in the use of hysterectomies between different localities in which women reside. In an analysis of variation for 2001–02, 41 of 262 localities had significantly more separations for hysterectomy than expected, and 50 of the 262 localities had significantly fewer separations for hysterectomy than expected.

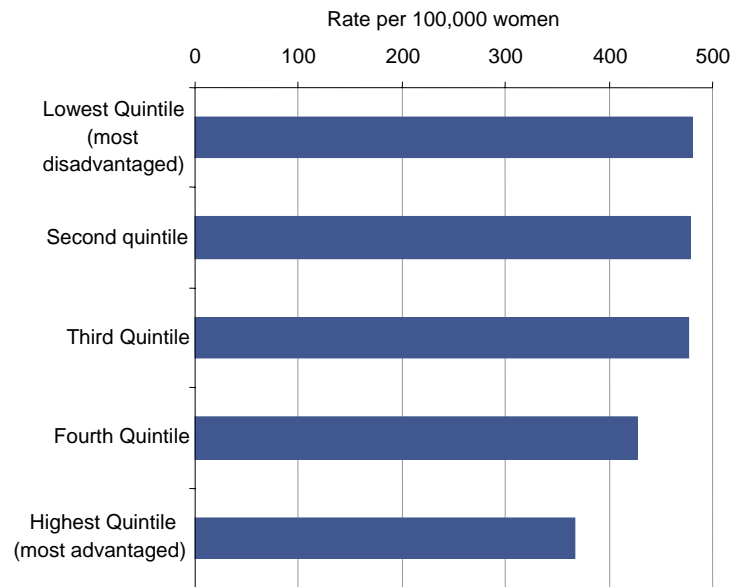
Implications: The evidence of variation in use of hysterectomies between regions is a starting point for further investigation and analysis. It is suggestive of the possibility that hysterectomy is overused for women living in many localities in Australia.

Chart 3-2

Hysterectomy Rates

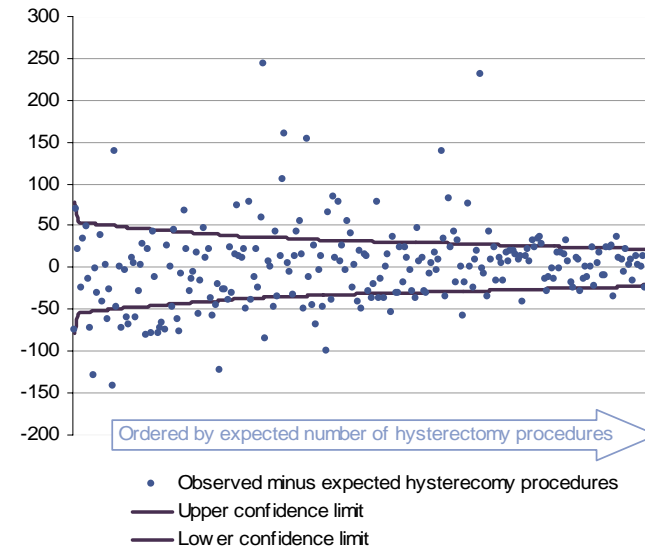
One in five women will undergo a hysterectomy by the age of 50. Use of hysterectomy varies between regions across Australia. There appear to be systematic differences related to socio-economic status and whether a person lives in metropolitan, rural or remote region. There are large unexplained variations between geographical localities in the use of this procedure.

Hospital separations for hysterectomy, women aged 20 years and over, by socio-economic status, 2001-02



Source: AIHW 2003

Difference between observed and expected number of hospital separations for hysterectomy, women aged 20 years and over for 262 geographic localities across Australia, 2001-02



Source: AIHW (Unpublished) Analysis of National Hospital Morbidity Data. A positive value indicates there are more procedures than expected. A negative value indicates there are fewer procedures than expected.

Appropriateness

Caesarean Section Rates

Why is this important? Caesarean section is the most common surgical procedure in Australia where a baby is delivered through an incision made in the woman's abdominal wall and uterus. Decisions to deliver by caesarean can be made before the onset of labour (elective caesarean) or after the onset of labour (emergency caesarean). Caesarean delivery may be appropriate in circumstances related to the clinical characteristics of patients (such as breech or transverse presentation) where a vaginal birth is not possible. Studies have shown that non-clinical factors also contribute to the rising rates of caesarean section. These include women's requests for delivery by elective caesarean when they perceive that benefits outweigh risks; elective induction of labour (with no obvious clinical indication); different practice patterns of individual doctors; and the private health insurance status.

Findings: In the year 2000 according to the latest national data available, 23.1 per cent of hospital births in Australia involved caesarean section. This rate has increased over the last decade from 17.5 per cent in 1990. The trend is continuing with the latest data from NSW showing the rate of caesarean section rose from 21.4 per cent in 2000 to 24.9 per cent in 2002 (Centre for Epidemiology and Research, NSW Department of Health. 2003). Rates have increased in both public and private hospitals, although they are consistently higher in the private sector.

Australian rates are the fourth highest out of 21 OECD countries (OECD 2002). Randomised controlled trials and some multi-centre trials (Hannah et al 1992, Hannah et al 2000) have pushed professional management guidelines and clinical practice toward

higher rates. A relaxed policy for elective caesarean (ACOG 2003), greater access to private hospitals, and changes in practice responding to the medical indemnity crisis have also contributed (AIHW 2003).

Implications: There is a body of evidence that illustrates the seriousness of the rising caesarean section rates in terms of maternal and infant complications, and the need for a more informed community debate. Whilst caesarean delivery is appropriate in some circumstances, it is associated with risks such as maternal mortality (Hall et al 1998), neonatal respiratory distress necessitating oxygen therapy (Morrison et al 1995), operative complications such as lacerations and bleeding (Hannah 2000, Bergholt 2003), and longer recovery times. There are also risks for subsequent pregnancies. Risks include: the need for a subsequent caesarean delivery (Bernstein 2002), problems in placentation, including placenta praevia (Ananth 1997), major bleeding (Lyndon Rochelle et al 2001), placental abruption and ectopic pregnancies (Rasmussen et al 1999), and stillbirth (Smith et al 2003). Contrary to popular belief, MacLennan et al (2000) found that pregnancy, not childbirth (unless compounded by instrumental vaginal delivery), was responsible for the frequency of pelvic floor dysfunction.

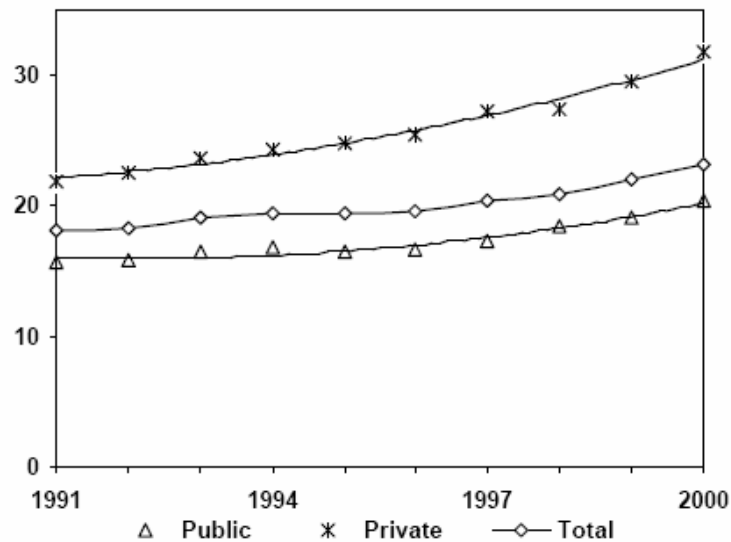
The UK National Collaborating Centre for Women's and Children's Health, under the auspice of the NHS Institute of Clinical Excellence recently released guidelines for the use of caesarean section. A cornerstone of these guidelines is that women should be provided with evidence based information on overall risks and benefits of caesarean section.

Chart 3-3

Caesarean Section Rates

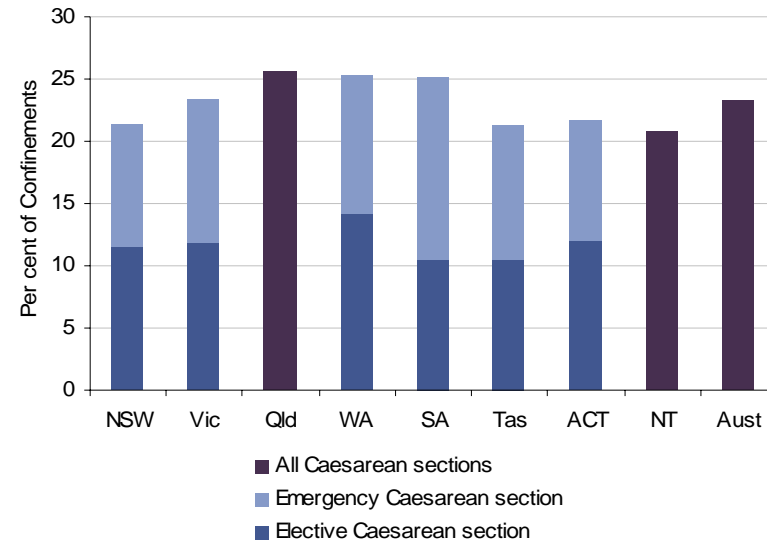
Caesarean section rates are rapidly increasing across Australia.
 Rates are higher for mothers treated as private patients in both public and private hospitals.

Caesarean section as a per cent of all confinements by accommodation status in hospital, 1991-2000
 Per cent of confinements



Source: AIHW NPSU 2003.

Elective and emergency Caesarean section as a per cent of all confinements by State or Territory, 2000



Source: AIHW NPSU 2003. Note: Elective and Emergency Caesarean data is not available for Queensland and the Northern Territory

Appropriateness

Potentially Preventable Hospitalisations

Why is this important? Potentially preventable hospitalisation rates measure the effectiveness, timeliness and adequacy of non-hospital care, including population health, primary care and outpatient services, in preventing hospitalisations for particular conditions (Victorian Government Department of Human Services 2002). Studies of hospitalisation for these conditions have shown that the availability of non-hospital care explains a significant component of the variation between geographic areas in hospitalisation rates for the specified conditions (Billings et al. 1993; Bindman et al. 1995; Weissman et al. 1992; UCSF-Stanford University Evidence-based Practice Center 2001). Other explanations for variation include variations in the underlying prevalence of the conditions, in clinical coding standards, and in the likelihood that patients will be treated as an outpatient rather than an admitted patient.

Findings: There were 600 759 hospital separations in 2001–02 that were identified as potentially preventable.

These included 16 545 separations for vaccine-preventable conditions (predominantly influenza and pneumonia) and 247 732 separations for acute conditions (with the largest numbers for dental, dehydration and gastroenteritis conditions).

Chronic conditions accounted for 343 649 separations, with diabetes complications (142 992) and chronic obstructive pulmonary disease (54 856) the conditions with the largest numbers of separations.

Hospitalisation rates for these conditions were highest in very remote regions, with rates more than 2.42 times the national average. Rates in other regional and remote areas were also much higher than rates in major cities. These patterns are consistent with the lower availability of general practice, other primary and specialist care in rural and remote Australia.

Rates of preventable hospitalisation in the most disadvantaged regions were 50 per cent higher than those of the most advantaged regions.

Across jurisdictions, rates for potentially preventable hospitalisations were lowest in the Australian Capital Territory and New South Wales (30 per cent and 9 per cent, respectively, below the national average) and highest in the Northern Territory (40 per cent higher than the national average). Rates for other States were between 4 per cent and 8 per cent higher than the national average.

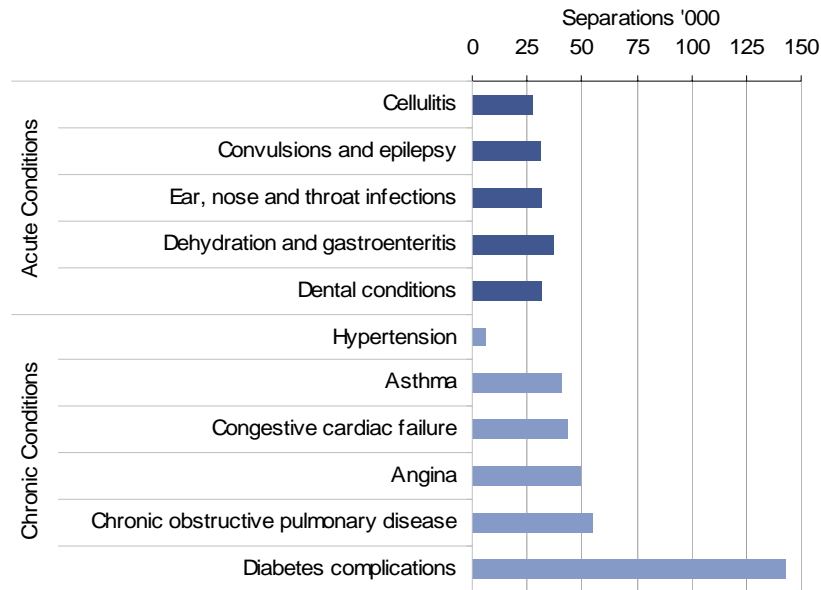
Implications: Potentially preventable hospitalisations will never be entirely eliminated, but the variation between geographic areas demonstrates considerable potential for strengthening the effectiveness of non-hospital care.

Chart 3-4

Potentially Preventable Hospitalisations

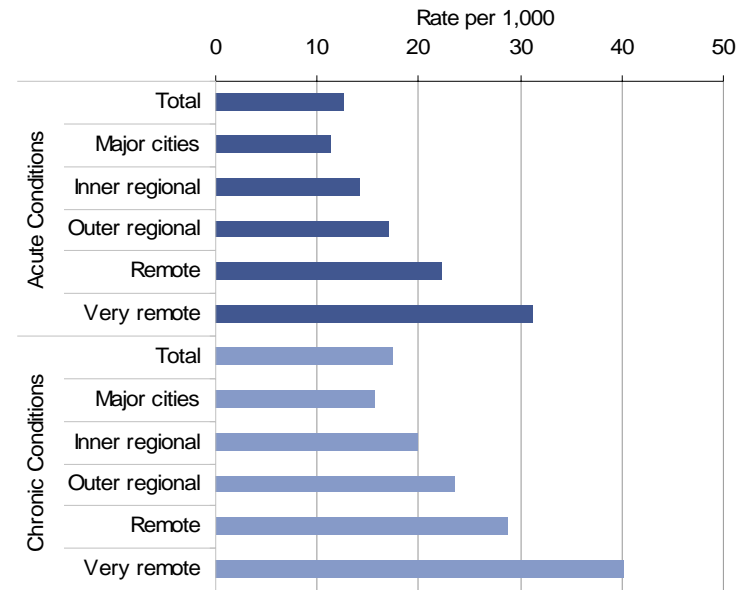
In 2001-02 there were 247 732 hospitalisations for acute conditions and 343 649 for chronic condition that may have been prevented by the provision of earlier or non-hospital care.

Number of separations for acute and chronic potentially preventable hospitalisation, Australia 2001-02



Source: AIHW 2003a

Potentially preventable hospitalisations, rates per 1 000 population, by remoteness area of usual residence, Australia, 2001-02



Source: AIHW 2003a

Chapter 4

Patient Safety

*Declare the past, diagnose the present, foretell the future; practice these acts.
As to diseases, make a habit of two things—to help, or at least to do no harm.*

- Hippocrates

Chapter 4

Patient Safety: Introduction

Patient safety is "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 " (National Health Performance Committee 2001).

Health care is a complex and at times high risk activity, where things can go wrong, including¹:

Medical errors which occur where there is a failure to complete an action as intended (i.e., error of execution), or the wrong use of a wrong plan to achieve an aim (i.e., error of planning);

Incidents, events or circumstances which could have, or did lead to unintended and/or unnecessary harm to a person, and/or a complaint, loss or damage;

Adverse events which are incidents in which harm resulted to a person receiving health care; and

Preventable adverse events, which are potentially avoidable events in the relevant circumstances. Generally adverse events attributable to error are preventable. Negligent adverse events represent a subset of preventable adverse events that satisfy legal criteria used in determining negligence (i.e. whether the care provided failed to meet

the standard of care reasonably expected of an average physician qualified to take care of the patient in question).

Study of Adverse Events

Australia is the first country to have undertaken a nationally representative study of adverse events, the *Quality in Australian Health Care Study* (Wilson et al 1995). The study adopted methods developed for studying adverse events in the United States. It revealed that 16.6 per cent of admissions to hospitals in NSW and SA were associated with an adverse event. Fifty one per cent of these were considered preventable. Reanalysis using US methodology suggests that at least 10 per cent of acute-hospital admissions were associated with a potentially preventable adverse event (Thomas et al 2000). A follow-up comparison of the Australian study and an American study of adverse events in Utah and Colorado, found that the level of serious adverse events was almost identical between the studies. In both studies 0.3 per cent of admissions were associated with an iatrogenic death and 1.7 per cent associated with iatrogenic disability (Runciman et al 2000).

Subsequent analysis of the *Quality in Australian Health Care Study* also found that 80 per cent of adverse events could be classified into potentially preventable events, with 20 per cent associated with events that were not preventable with current knowledge (Runciman et al 2000). The study estimated that adverse events associated with hospital admissions alone would account for 3.3 million bed days per year, of which 1.7 million would be from adverse events which were potentially preventable.

¹ Based on definitions agreed by the Australian Council for Safety and Quality in Health Care (www.safetyandquality.org/definition/); IOM (1990) and Runciman and Moller 2001.

Root Causes

Adverse events arise through a complex interaction of system and human factors. Writing about accidents in other industries, James Reason observed that in most circumstance there is a conjunction of casual factors “each necessary but none sufficient to bridge the system’s defence by itself... a large number of the root causes were present within the system long before the accident sequences was apparent” (Reason 1990). These insights are just as relevant to health care, and form the basis of developing effective strategies to improve patient safety in health care. Reducing risk of harm from adverse events and minimising the impact on patients requires strategies to address causes at several levels. Solutions involve redesigning systems at all levels to reduce risks, and this will take time to implement. Key strategies include:

- **Changing the culture** of health care to encourage reporting of errors and adverse events;
- **Working in partnership** with patients so that they are informed, involved and empowered; and
- **Leadership and resources** at all levels of the system to effect change and sustain improvements (ACSQHC 2003).

In giving effect to these strategies, Australian Health Ministers recently decided, on advice from the Australian Council for Safety and Quality in Health Care, on a uniform set of steps across the country to improve patient safety in public hospitals. A national timetable has been agreed for:

- Adoption by all public hospitals of the “**Correct patient, Correct site, Correct procedure protocol**”, to reduce the possibility that patients are treated on the wrong side of their body;

- Ensuring **incident management systems** in public hospitals that comply with national protocols have been implemented by June 2005;
- Ensuring all public hospitals will have in place a **patient safety risk management plan** by the end of 2004;
- Requiring all public hospitals to **report all Sentinel Events** by the end of 2005, and to contribute to a National Report on Sentinel Events;
- Adoption of a **national medication chart** by June 2006. The same medication chart will be used wherever a doctor or nurse works and wherever the patient is within a hospital;
- Ensuring that by the end of 2006, every hospital has in place a process for **pharmaceutical review** of medication prescribing, dispensing, administration and documenting processes for the use of medicines; and
- Ensuring all public hospital patients receive a copy of the booklet *10 tips for safer health care: what everyone needs to know* at or before the time of admission (reproduced in Chapter 8).

The charts in this chapter describe various aspects of patient safety, in terms of incidence of adverse events, types and consequences. Whilst Australia is a leader in the study of adverse events, good quality, recent, and nationally consistent data are not readily available. A constant tension in the measurement of adverse events is the “blame culture” that discourages accurate recording of events in routine data collections. Those organisations that overcome this barrier often risk appearing to have a higher incidence of adverse

events, at least in the short term. Interpreting trends is complicated by the success of strategies to improve recording relevant data.

Indicators of Improvement

Some indicators suggest improvements in patient safety:

- Deaths associated with anaesthesia have dropped significantly over time;
- Risk of dying during pregnancy and childbirth has dropped significantly; and
- Mortality from Coronary Artery By-Pass Graft surgery in Australia out-performs some international benchmarks.

Indicators on Continuing Problems

Other indicators demonstrate there is still a long way to go in achieving levels of patient safety acceptable to Australians:

- There are at least 70 000 hospital admissions each year associated with an adverse drug event;
- Up to 158 cases of pulmonary embolism could be avoided if all hospitals achieved the rates of the best performing hospitals; and
- Many hospital patients suffer pressure ulcers, which could be avoided with simple measures to assess risks and implement preventive measures.

Patient Safety: Summary of Charts and Findings

Chart 4-1 Estimated Deaths Associated with Adverse Events.

2.2 per cent of deaths in 1997 and 1998 were identified as having an adverse event as an underlying cause or a contributing cause of death.

Chart 4-2 Anaesthesia-Related Deaths. There are 1.3 anaesthesia related deaths for every 100 000 anaesthetic procedures. There were 130 anaesthetic related deaths identified across Australia in the three years 1997-1999, and 19 deaths where it was reasonably certain or there was a high probability, but some doubt, that the death was caused by anaesthesia or a factor under the control of the anaesthetist.

Chart 4-3 Surgical Mortality. Adverse events directly caused death in 3 per cent of surgical mortality cases audited in Western Australia. Adverse events contributed to death in 20 per cent of surgical mortality cases.

Chart 4-4 Mortality for Coronary Artery By-Pass Grafts. In-hospital mortality rates for coronary artery by-pass graft operations were reported as 1.78 per cent for 38 hospitals performing 9000 operations in 2002. Thirty day mortality rates for isolated coronary artery by-pass graft operations were 1.5 per cent for Victorian hospitals in 2002-03. These rates compare favourably with rates for cardiac surgery in other countries.

Chart 4-5 Maternal Mortality. In the three years 1994-1996 there were 100 maternal deaths in Australia, a rate of 13 deaths for every 100 000 confinements.

Chart 4-6 Drug Adverse Events. At least 70 000 hospital separations each year are associated with drug adverse events. Older people experience drug adverse events at higher rates.

Chart 4-8 Health Care Acquired Infections. The rate of surgical site infection varies according to the type of surgery. Collection of data for indicators for specific types of surgery has only recently commenced across Australia.

Chart 4-9 Post-Operative Pulmonary Embolism. Post-operative pulmonary embolism is reported in 0.38 per cent of cases staying in hospital longer than 7 days. If all hospitals achieved the rate of hospitals ranked in the top 20 per cent in 2002, 158 cases of pulmonary embolism would be avoided. Seventy-three cases would be avoided by addressing high rates reported for 12 outlier hospitals. 218 cases would be avoided if States with higher rates were able to implement strategies to reduce rates to that of the State with the lowest rate.

Chart 4-10 Pressure Ulcers. Based on a recent study conducted in Victoria, it is estimated that 26.5 per cent of patients occupying a hospital bed have evidence of a pressure ulcer. Patients with the most severe forms of pressure ulcer (stages 3 and 4) account for 4.6 per cent of patients occupying a hospital bed. An estimated 17.9 per cent of patients occupying a hospital bed have acquired a pressure ulcer during their hospital stay.

Chart 4-11 Patient Falls. Patient falls are common in acute care settings. Many falls do not result in serious injury. There are around 550 surgical patients across Australia who suffer hip fractures as a result of fall occurring during their hospital stay.

Chart 4-12 Medical Device Problems. Between 500 and 600 reports are made to the Medical Device Incident Report Investigation Scheme each year. An average of 200 reports a year are assessed as having the potential for injury or death, and 149 reports relate to events resulting in the patient dying or suffering an actual injury.

Chart 4-13 Accreditation. Public and private hospitals achieve a high level of accreditation. Accreditation is becoming common for general practice, with 72 per cent of practices accredited with one of the accreditation bodies.

Patient Safety

Estimated Deaths Associated with Adverse Events

Why is this important? Death is the most serious consequence, of an adverse event. Estimates of the extent to which adverse events contribute to mortality provide a guide to the priority that should be accorded to patient safety by health policy makers. Data on the nature of the adverse events resulting in death can also assist in identifying where patient safety initiatives might be targeted. The *Quality in Australian Health Care Study* provides one estimate of deaths arising from adverse events. The study estimated that there were 18 000 deaths per year associated with an adverse event.

Another potential source is data on causes of death routinely collected by the Australian Bureau of Statistics (ABS). Cause of death is determined from information contained on death certificates completed by doctors or coroners. Both the underlying cause of death (the disease or injury that initiated the train of morbid events leading directly to death) and any other cause of death (immediate or any intervening causes that contributed to death) are coded using the International Classification of Diseases. Accidental and violent deaths are classified according to the external cause: that is, the circumstances of the accident or violence that produced the fatal injury. Using the external cause codes, deaths can be categorised into *misadventures* (misadventures to patients during surgical and medical care), *complications* (deaths resulting from an abnormal reaction or later complications of surgical and medical procedures), and *drug adverse events* (deaths from therapeutic use of drugs, medicaments and biological substances). Some disease codes are also able to identify adverse events (for example, wound infection following surgery).

Findings: An analysis of mortality data for 1997 and 1998 (Hargreaves 2001) found that:

- One hundred and seventy seven deaths or 0.07 per cent of all deaths had an adverse event recorded as the underlying cause of death. An adverse event was identified in 5 533 deaths or 2.2 per cent of all deaths as an underlying or contributing cause of death;
- Complications of care were the most significant group of adverse events. Complications were the underlying cause in 98 deaths and a contributing cause in 4 055 deaths;
- Misadventures were the second most important group for underlying causes of death, accounting for 48 deaths. Thirty seven of these deaths related to accidental cut, puncture, perforation or haemorrhage during medical care; and
- Drug adverse events were the second most important contributing cause, recorded in 1 473 deaths.

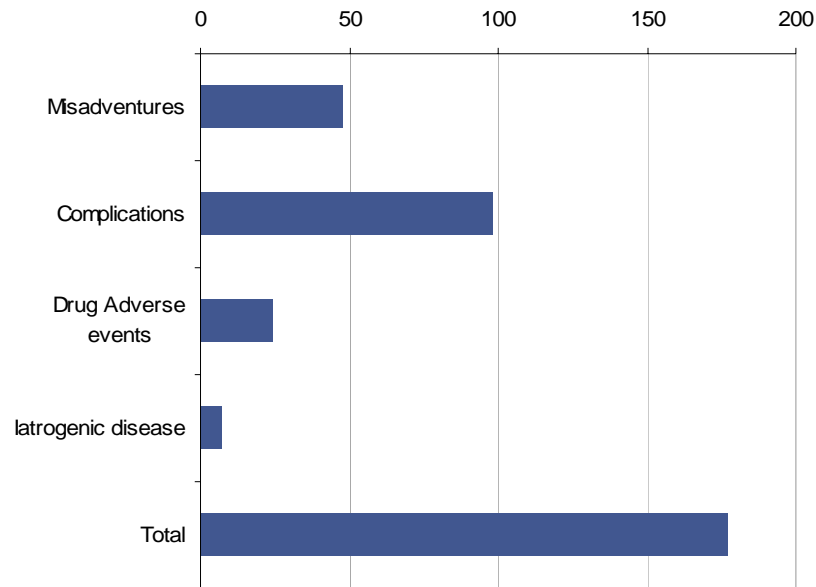
Implications: Routine sources of data are almost certainly going to underestimate mortality associated with adverse events. Nevertheless these data show that adverse events are a significant contributor to mortality in Australia.

Chart 4-1

Estimated Deaths Associated with Adverse Events

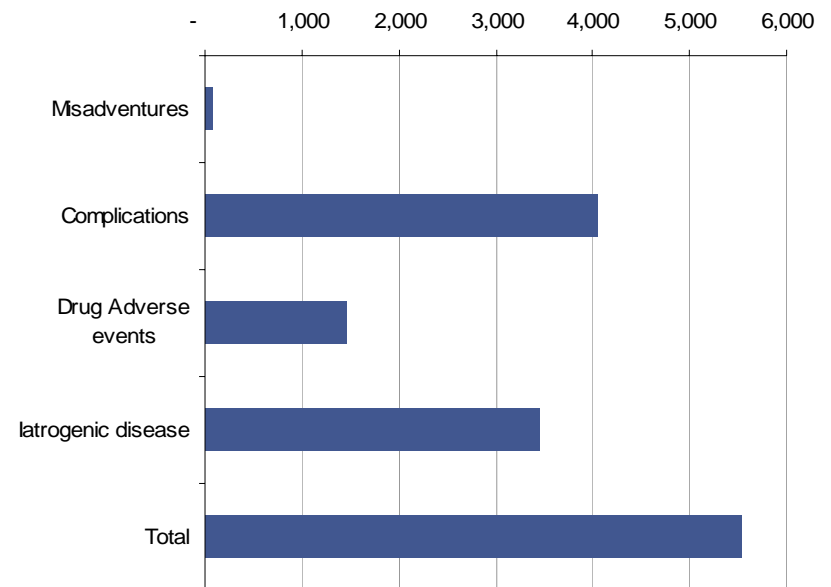
2.2 per cent of deaths in 1997 and 1998 were identified as having an adverse event as an underlying cause or a contributing cause of death.

Number of Deaths, 1997 and 1998 with an adverse event as an underlying cause



Source: Hargreaves 2001

Number of Deaths, 1997 and 1998, with an adverse event as an underlying or contributing cause



Source: Hargreaves 2001

Patient Safety

Anaesthesia-Related Deaths

Why is this important? General anaesthesia is a complex process in which the anaesthetist assumes almost total control of the patient's body. "The body is paralysed, the brain rendered unconscious, and machines are hooked up to control breathing, heart rate, blood pressure – all the vital functions. Given the complexity of the machinery and of the human body, there are a seemingly infinite number of ways in which things can go wrong" (Gawande 2002: 64).

Nevertheless anaesthetists have been at the forefront of studying error in medicine and applying methods to reduce error and adverse events. Studies of the incidence of anaesthetic mortality have been undertaken since the 1950s. The longest standing, continuing analysis of anaesthetic mortality in the world is based in New South Wales (Warden et al 1994).

Since the late 1970s the value of critical incident analysis has been recognised in which "factors associated with anaesthetists and/or factors that may have predisposed anaesthetists to err" are analysed, with a focus on "the process of error – its causes, the circumstances that surround it, or its association with specific procedures, devices etc. – regardless of the final outcome" (Cooper 1978). Significant improvements in safety have been achieved through development of better techniques for monitoring patients under anaesthesia, improved airway management, redesign of equipment, and increases in the number and quality of anaesthetic trainees, and continuous professional development (Pierce 1996, Kerridge 2002). Australian anaesthetists lead the world in establishing processes for confidential audits of anaesthetic-related deaths, and audits of critical incidents, with Mortality Committees established for all States and the

Northern Territory (MacKay 2002). These committees review all deaths, assess contributing factors, and initiate actions to address contributing factors.

Findings: In the three years 1997-1999 there were:

- One hundred and thirty anaesthetic related deaths identified across Australia, equivalent to 1.3 deaths for every 100 000 anaesthetic procedures (MacKay 2002);
- Nineteen deaths were classified as category 1 (where it was reasonably certain the death was caused by anaesthesia or factors under control of the anaesthetist) or category 2 (where there is some doubt that the death was entirely attributable to anaesthesia or factors under control of the anaesthetist);
- In other cases anaesthetic deaths were caused by both surgical and anaesthetic factors; and
- In the 1950s it was estimated a death occurred every 2 700 procedures (Pierce 1996). In 1984 it was estimated that in NSW a death occurred every 26 000 anaesthetic procedures.

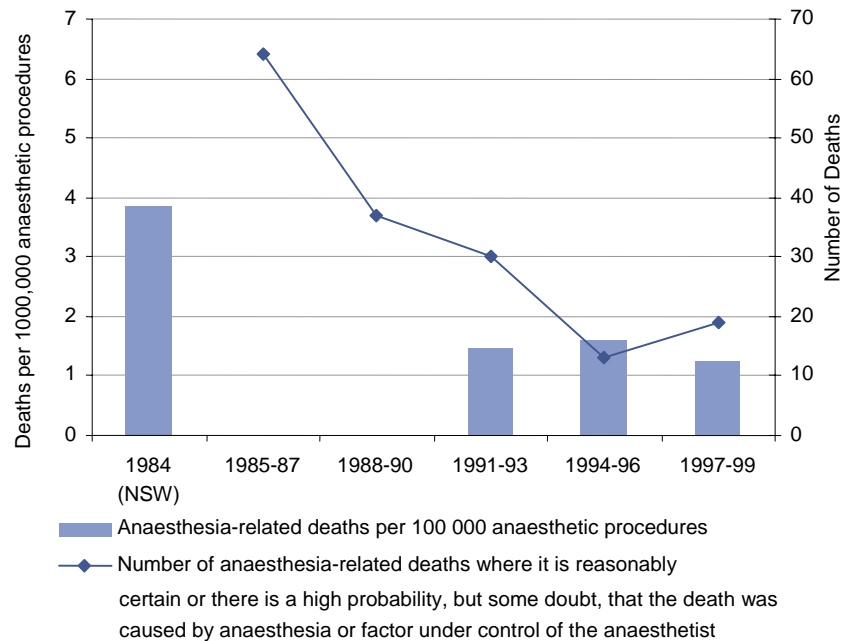
Implications: The safety of Australian anaesthesia compares favourably to other countries (Kerridge 2002). However, the potential to improve safety "by increased anaesthetic involvement in pre- and post-operative care is increasingly recognised" (Kerridge 2002).

Chart 4-2

Anaesthesia-Related Deaths

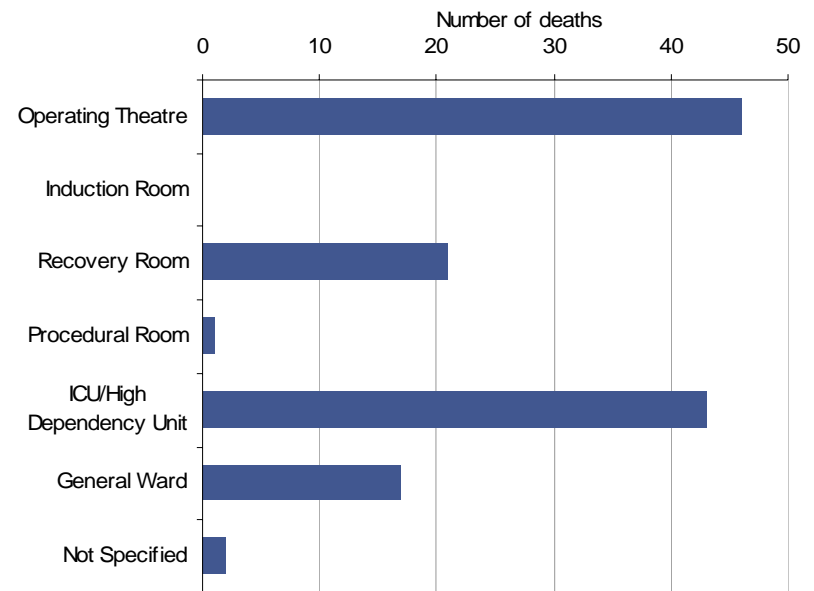
There are an estimated 1.3 anaesthesia-related deaths for every 100 000 anaesthetic procedures. There were 130 anaesthesia-related deaths identified across Australia in the three years 1997-1999, and 19 deaths where it was reasonably certain or there was a high probability, but some doubt, that the death was caused by anaesthesia or a factor under the control of the anaesthetist.

Anaesthesia-related Deaths, Australia



Source: Mackay 2002

Location where Anaesthesia-related deaths occurred, Australia, 1997-1999



Source: Mackay 2002

Patient Safety

Surgical Mortality

Why is this important? Around 9 000 patients who are admitted to hospital and have surgery, die in hospital. This represents around 0.55 per cent of patients (AIHW unpublished). Many of these patients die as a result of the injuries or illnesses that lead to their admission to hospital in the first place. However, the study of the causes of surgical mortality provides an opportunity to improve patient safety.

The Western Australia Audit of Surgical Mortality (WAASM) was established in 2001, the first comprehensive system for auditing surgical mortality in Australia. It has been based on the design and experience of the Scottish Audit of Surgical Mortality. Eight-five per cent of surgeons in Western Australia are participating in the audit process. In its first 21 months 1 247 deaths have been identified and/or reported to WAASM. In 943 of these deaths an audit has commenced, a process involving review of the case by peer assessors (surgeons). Audits have been completed in 663 cases. Of these 527 deaths involved deaths associated with surgical operations. Based on a record linkage study, it is estimated that there were a further 157 hospital deaths in participating hospitals that were not reported to WAASM, and a further 151 cases in non-participating hospitals.

Findings: Adverse events were identified in 166 of the 663 audited deaths. In total there were 293 adverse events identified. In 20 cases (3 per cent of deaths) the assessor stated that the adverse events caused the death. Adverse events caused or contributed to death in

122 cases (18 per cent of deaths) according to the assessors. Adverse events associated with operative deaths included:

- technical errors in surgery (13 per cent);
- delays to surgery or surgeon (11 per cent);
- failure to use drugs to prevent deep venous thrombosis (DVT) (6 per cent);
- diagnosis-related problems (5 per cent);
- delays in recognising complications (5 per cent);
- incorrect/inappropriate therapy (5 per cent);
- general complications (5 per cent); and
- post-operative bleeding (5 per cent).

If these findings were translated to the national level, there would be around 270 patient deaths a year for surgical patients where adverse events caused death, or 0.017 per cent of patients receiving surgery.

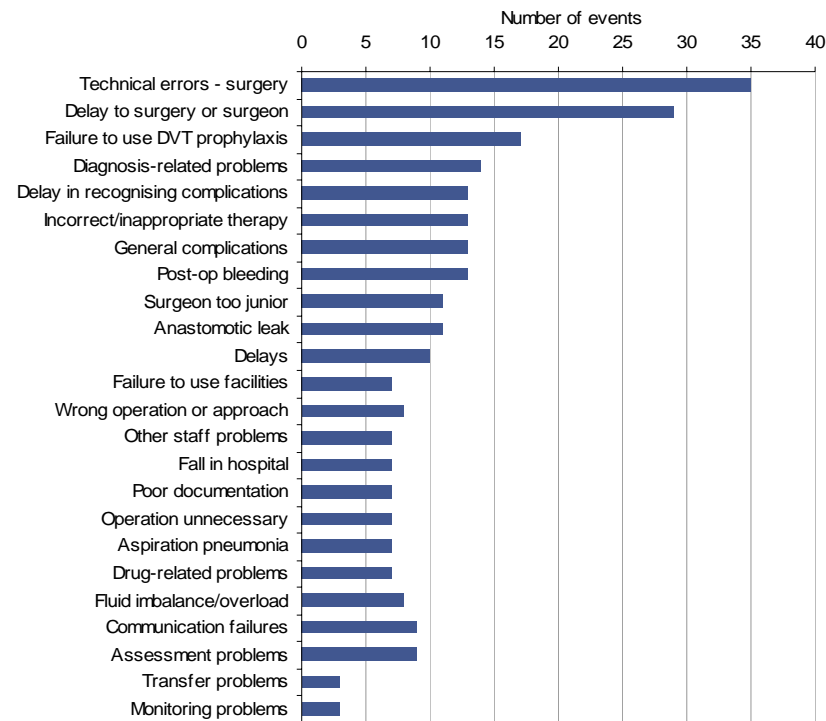
Implications: Many of the adverse events identified by the audit could be prevented, and a key aspect of the WAASM project will be to follow up with strategies to address identified problems, for example, appropriate use of drugs to prevent DVT was identified by the first WAASM annual report as an important opportunity to improve safety.

Chart 4-3

Surgical Mortality

Adverse events caused death in 3 per cent of surgical mortality cases audited in Western Australia.
 Adverse events caused or contributed to death in 18 per cent of surgical mortality cases.

Nature of Adverse events associated with Surgical Mortality cases in Western Australia, 2001 and 2002



Source: WAASM 2003

Patient Safety

Mortality for Coronary Artery By-Pass Grafts

Why is this important? Coronary heart disease is a major cause of morbidity and mortality. Coronary heart disease may be treated medically (with drugs) or through revascularisation either using medical procedure (percutaneous coronary intervention) or a surgical procedure – a coronary artery by-pass graft. Coronary artery by-pass grafts involve opening the patient's chest and using veins, taken from the patient legs or elsewhere in the body, to by-pass the diseased coronary arteries. By-pass surgery has been shown to improve quality of life for people with coronary heart disease and to reduce the risk of death (Yusuf, Zucker, Peduzzi et al 1994). However, the procedure itself carries risks, including the risk of death. Across the world various approaches have been adopted to further minimise these risks and consequently reduce mortality rates.

Findings: Data from the National Cardiac Register for 1998 and 1999 indicate that 14 263 coronary artery by-pass graft operations were registered in 1999. Analysis of the National Hospital Morbidity Data found the patient died in 2.3 per cent of cases (Davies and Senes 2003). These cases include operations where a by-pass was performed along with other cardiac operations. This rate is not adjusted for risk factors, so comparisons with rates for other systems should be treated with some caution. Another source of

national data is the clinical indicators collected by the Australian Council on Healthcare Standards (ACHS 2003). These data were collected on a voluntary basis, but were submitted for 38 hospitals providing approximately 9 000 by-pass operations. Hospitals reporting these data had an average in-hospital mortality rate of 1.78 per cent in 2002. Rates for reporting hospitals have declined since 1998 and 1999, when the average mortality rate was above 2 per cent of cases. A more detailed study of mortality for cardiac operations undertaken by Victorian units in 2002-03, found that the thirty day mortality rate for coronary artery by-pass graft without other cardiac procedures was just over 1.5 per cent, and for by-pass grafts plus a heart valve procedure was 5.6 per cent (Reid et al 2004). Risk adjusted mortality rates for all six Victorian units in 2002-03 were better than benchmarks set for the United States and better than the United Kingdom benchmark in five units (Reid et al 2004).

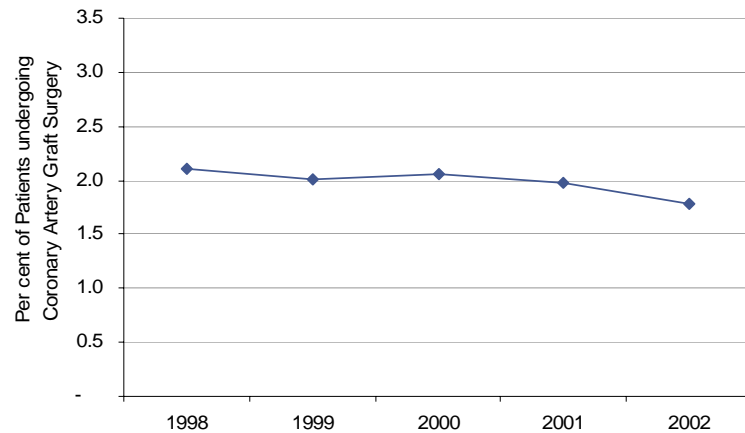
Implications: Australian mortality rates for coronary artery bypass graft surgery appear to be equivalent or better than international standards.

Chart 4-4

Mortality for Coronary Artery By-Pass Grafts

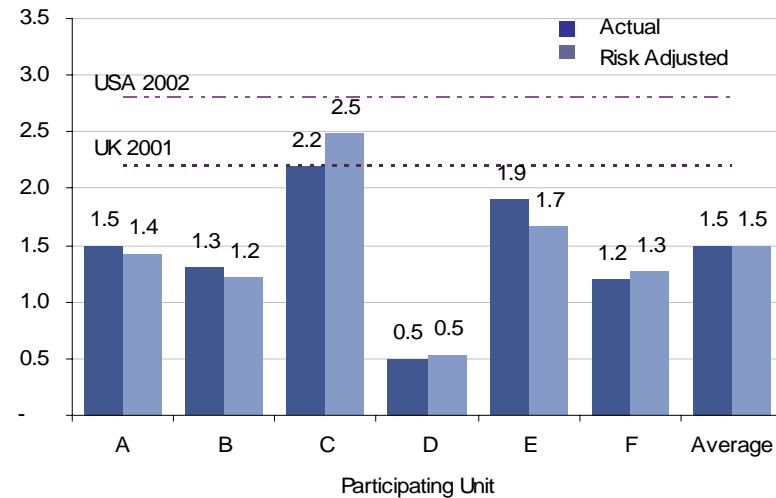
In-hospital mortality rates for coronary artery by-pass graft operations were reported as 1.78 per cent for 38 hospitals performing 9000 operations in 2002. Thirty day mortality rates for isolated coronary artery by-pass graft operations were 1.5 per cent for Victorian hospitals in 2002-03. These rates compare favourably with rates for cardiac surgery in other countries.

Per cent of patients who die in the same admission as having coronary artery by-pass graft surgery, selected hospitals, Australia 1998-2002



Source: ACHS 2003

Mortality rate within 30 days of coronary artery by-pass graft surgery alone, for the six Victorian public hospital cardiac surgery units, 2002-03



Source: Reid et al 2004: Note Risk Adjusted rates based on the Euroscore Model

Patient Safety

Maternal Mortality

Why is this important? Childbirth poses a range of potential risks to mothers. During childbirth life-threatening complications can occur, often unpredictably. Over many years obstetric and midwifery practices in Australia have made significant gains in improving the safety of childbirth for both mothers and babies. Whilst the death of a mother during childbirth is now a relatively rare event, maternal mortality was significant earlier in the 1900s. Since 1964 a report on maternal deaths has been produced each triennium. The latest reports have been produced by the AIHW National Perinatal Statistics Unit under the auspice of the National Health and Medical Research Council. Through these reports, experts have examined the cause of each maternal death and identified opportunities to improve safety and quality of care. The latest report, produced in 2001, relates to the triennium 1994-1996 (AIHW 2001).

Findings: In the three years 1994-1996 there were:

- One hundred maternal deaths in Australia out of 770 000 confinements, a rate of 13 deaths for every 100 000 confinements;
- Of these deaths 46 directly resulted from obstetric complications of the pregnant state (pregnancy, labour and puerperium), from interventions, omissions, incorrect treatment, or from a chain of events resulting from any of the above;
- Twenty deaths were indirect deaths related to pre-existing disease which may have been aggravated by the physiological effects of pregnancy; and

- Thirty-four were incidental deaths due to conditions occurring during pregnancy, where the pregnancy is unlikely to have contributed significantly to the death.

(Ford, Sullivan, Walters et al 2001)

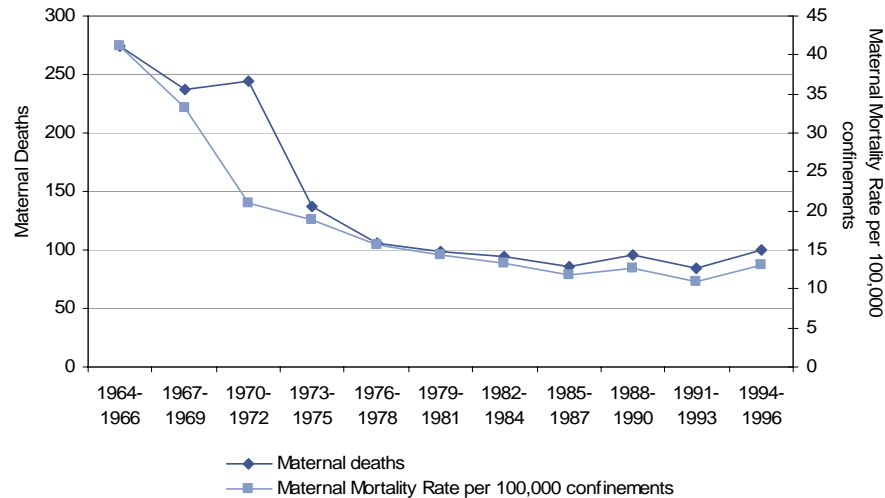
The maternal mortality rate has fallen by around 70 per cent since it was first estimated for 1964-66. However, the latest triennium saw a slight increase in deaths compared to 1991-93. The most common principal causes of death for direct maternal deaths were pulmonary embolism, amniotic fluid embolism, pre-eclampsia/pregnancy induced hypertension, and septicaemia.

Implications: Whilst the risks of a mother dying during childbirth are very low in Australia, safety for mothers could be improved. The slight increase in deaths identified during the latest triennium was noted as an issue of concern by the Maternal Mortality Committee. The committee reported that it was “critical that there be close monitoring of maternal deaths in the future to determine if there is a real increase and that all maternal deaths be investigated and scrutinised to determine if there are any modifiable or preventable factors” (Ford J, Sullivan E, Walters W et al 2001).

Chart 4-5 Maternal Mortality

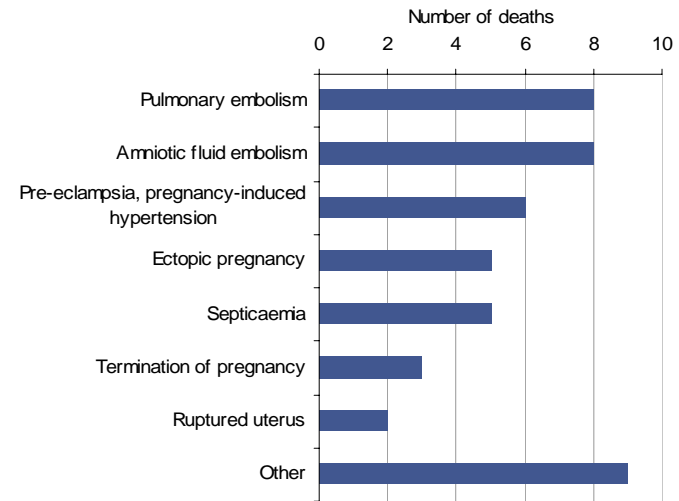
In the three years 1994-1996 there were 100 maternal deaths in Australia out of 770 000 confinements, a rate of 13 deaths for every 100 000 confinements.

Maternal deaths and maternal mortality rate per 100 000 confinements, Australia, 1964-66 to 1994-96



Source: Ford, Sullivan, Walters et al 2001

Direct maternal deaths by principal cause Australia 1994-96



Source: Ford, Sullivan, Walters et al 2001

Patient Safety

Drug Adverse Events

Why is this important? About 70 per cent of Australians have taken at least one medicine in the previous two week period. Medication incidents that result in harm to the patient are known as *adverse drug events*. In a small number of cases, adverse drug events result in serious injury or death. Whilst there may be a low likelihood of adverse drug events occurring, the large numbers of people taking medications, means that adverse drug events are a very significant problem. Risks are higher for people who are prescribed more than one medication, particularly older people.

Findings: Studies undertaken in Australia involving review of medical records suggest that between 2 and 3 per cent of all hospital admissions are related to problems with medicines (ACSQHC 2002). The *Quality in Australian Health Care Study* estimated that just under 2 per cent of hospital admissions in 1994 were associated with an adverse drug event (Day et al 1995). Hospital morbidity data show that in 2000-01 around 70 000 hospital admissions were related to drug adverse events. These problems may be problems that occurred prior to admission, when the patient was living in the community, or that occurred during the patient's stay in hospital. Hospital separations with adverse drug events appeared to increase up to 1998-99, but have been relatively stable since. The increase is most likely to reflect better recording of these events in medical records and coding in morbidity data. Risks of hospital admission associated with adverse drug events are higher for older people - people over 65 years account for 63 per cent of hospital separations with drug adverse events. Analysis of data from the *Quality in Australian Health Care Study* estimated 43 per cent of adverse drug

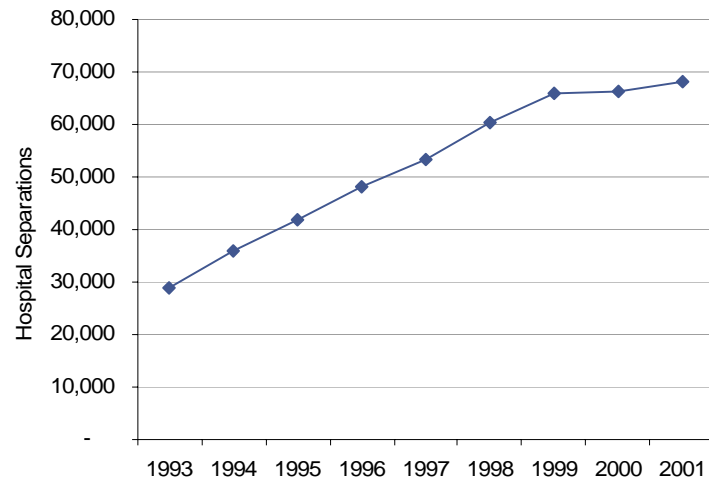
events associated with hospital admissions could be prevented (Day et al 1995).

Implications: Improving medication safety is a major priority for Australia. The Australian Council for Safety and Quality in Health Care identified various strategies that have been shown to reduce medication incidents including: computerised prescribing by doctors with clinical decision-support systems; computerised drug adverse drug event alerts; individual patient medication supply in hospitals where medicines are labelled, supplied and stored for individual patients; clinical pharmacy services which provide patient and staff education, monitoring and medication review; effective transfer of information between hospital and community settings; community based medication management and case conferencing; and discharge medication management (ACSQHC 2002). Australian Health Ministers recently agreed to implement a National Medication Chart, so that the same medication chart will be used wherever a doctor or nurse works and wherever the patient is within a hospital. Ministers also agreed to ensure every hospital has in place a system for pharmaceutical review of prescribing, dispensing, administration and documenting processes for the use of medicines.

Chart 4-6 Drug Adverse Events

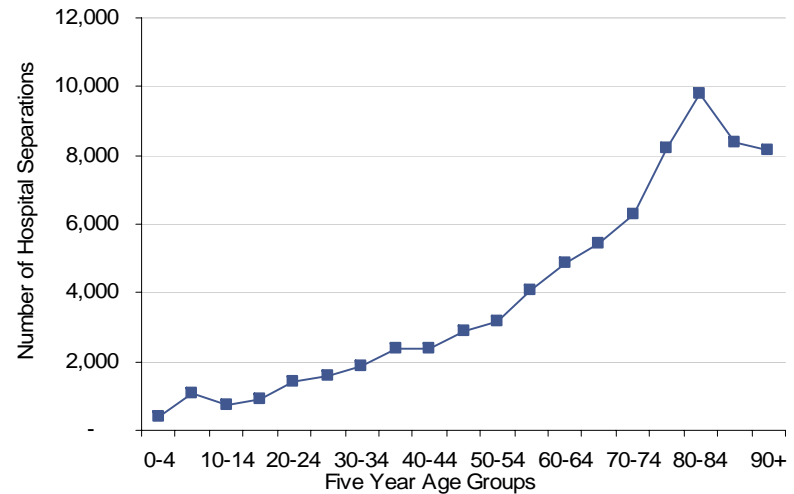
At least 70 000 hospital separations each year are associated with drug adverse events.
Older people experience drug adverse events at higher rates.

**Hospital separations associated with adverse drug events
Australia 1992-93 to 2000-01**



Source: Analysis of National Hospital Morbidity Data by the AIHW, 2004

**Hospital separations associated with adverse drug events
by 5 year age groups, Australia 2001-02**



Source: Analysis of National Hospital Morbidity Data by the AIHW, 2004

Patient Safety

Health Care Acquired Infections

Why is this important? Health care associated infections, (also termed hospital acquired infections or nosocomial infections) are defined as infections acquired in a hospital or health care setting. The definition encompasses those infections, occurring as a result of health care interventions, which may manifest after discharge from a health care setting. Health care associated infections and the management of antibiotic resistance are significant issues for health systems.

The first national survey of hospital acquired infections in Australia was conducted during July 1984. The study estimated that 6.3 per cent of hospital patients acquired an infection during their hospital stay (McLaws et al 1988). It has been estimated that in Australia there may be as many as 150 000 health care associated infections, contributing to 7 000 deaths each year, many of which could be prevented through implementing appropriate infection control practices (Australian Infection Control Association Expert Working Group, 2001). It is estimated that surgical site infections could be costing as much as \$268 million per year and that the total annual health care costs associated with bloodstream infections may be as high as \$686 million (Nimmo et al 2001).

Findings: The Australian Council of Healthcare Standards in association with the National Advisory Board to the Australian Infection Control Association has developed standard definitions and indicators for hospital acquired infections (Richards et al 2003). Since 2002 data have been collected on a voluntary basis in line with

these definitions through the Australian Council on Healthcare Standards Clinical Indicators (ACHS 2003).

Since January 2003, the NSW Health Department has mandated the collection of defined subsets of these indicators by public hospitals. Recently NSW Health published results for the first six months (NSW Health 2004). Based on national data for surgical site infections, rates vary considerably between different types of surgery. For example, around 1.5 per cent of procedures involving hip prostheses involved a surgical site infection, whereas over 6 per cent of femoral-popliteal by-pass procedures involved a surgical site infection. NSW reports 4.26 central line infections per 1 000 central line patient days, which compares with approximately 5 per 1 000 days reported for the United States (Centre for Disease Control and Prevention, National Nosocomial Infection Surveillance).

Victoria recently published initial results for the Victorian Nosocomial Infection Surveillance System which commenced in 2002 (VICNISS 2004). This surveillance approach is modelled closely on the US Centres for Diseases Control and Prevention, National Nosocomial Infection Surveillance System.

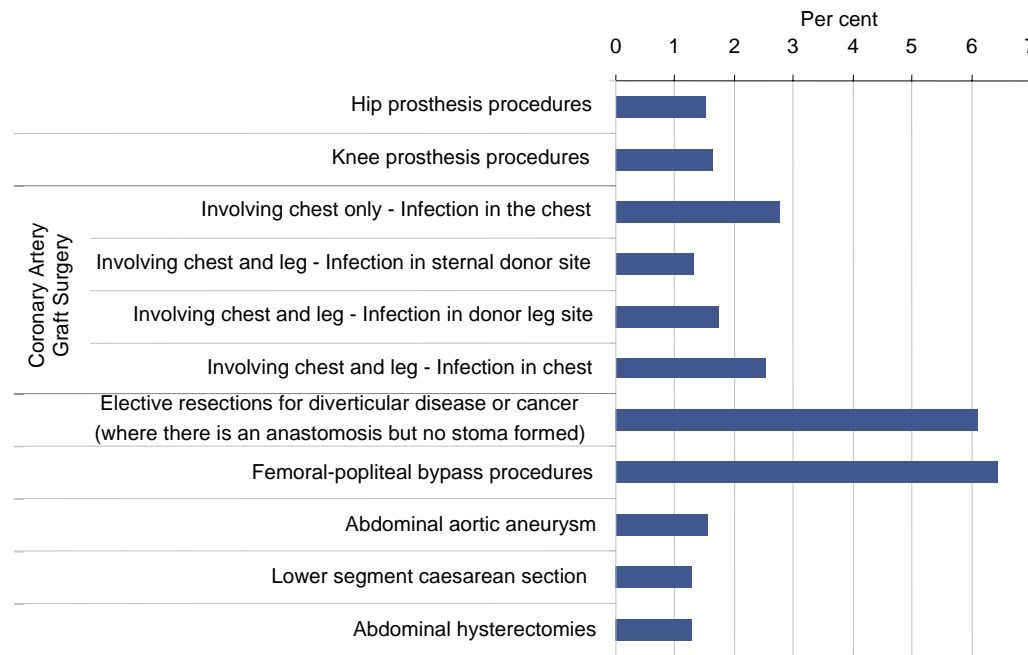
Implications: Health care associated infections are an important patient safety issue. Improvements in national monitoring are occurring but will require persistence. A range of strategies is required to achieve improvements (ACSQHC 2003a).

Chart 4-8

Health Care Acquired Infections

The rate of surgical site infection varies according to the type of surgery.
 Collection of data for indicators for specific types of surgery has only recently commenced across Australia.

Per cent of surgical procedures where a Surgical Site Infection was reported by selected types of surgery, Selected Hospitals, Australia 2002



Source: ACHS 2003. Numbers of hospitals reporting vary by indicator. For example, 89 hospitals reported indicators for hip replacement with 7 942 procedures. 15 hospitals reported indicators for femoral-popliteal by pass procedures with 186 procedures.

Patient Safety

Post-Operative Pulmonary Embolism

Why is this important? Venous thromboembolism (VTE) is a complication that can occur following surgery. VTE involves an occlusion (blockage) of the venous system. The occlusion may involve deep vein thrombosis (DVT), typically involving the legs, or pulmonary embolism (PE), involving occlusion of the pulmonary arteries. Pulmonary embolism is a serious condition with a high rate of mortality, estimated to be 15 per cent of cases (Cushman et al 2001). Risks vary by the age of the patient and the type of surgery. Without prophylactic treatment, it has been estimated that the incidence of DVT is 20 per cent following all major surgical procedures, whilst it is estimated PE occurs in 1-2 per cent of cases (Kleinbart et al 2001). Risks are higher for orthopedic surgery, where it is estimated that DVT can occur in over 50 per cent of cases without prophylaxis, and PE in up to 30 per cent of cases (Kleinbart et al 2001). DVT and PE also occur in patients admitted for medical conditions who do not undergo major surgery. Risks of VTE can be significantly reduced with the use of prophylactic strategies including the use of various mechanical interventions (such as graduated elastic stockings and intermittent pneumatic compression) and prescription of drugs. Prophylaxis, which is generally low cost, is recommended for many patients, except low risk patients for whom early ambulation is often sufficient to reduce risks. Various studies, including Australian studies, have shown that not all patients

receive appropriate prophylaxis (National Institute of Clinical Studies 2003).

Findings: The Australian Council on Healthcare Standards (ACHS) clinical indicators include the rate of post-operative pulmonary embolism for patients with a post-operative length of stay equal to or greater than 7 days. One hundred and seventy-two hospitals reported this indicator in 2002. The mean rate for 2002 was 0.38 per cent of cases. This is close to the rate reported over the previous four years. If all hospitals were able to reduce rates to the rate achieved by the hospital at the 20th percentile, 158 cases of pulmonary embolism would be avoided. Seventy-three cases could be avoided if the 12 hospitals identified as statistical outliers reduced their rates to be within the range of other hospitals. Rates vary between States. In 2001 and 2002 New South Wales, Queensland and Western Australia hospitals reported higher rates. Reducing states to the rate reported for Victorian hospitals would avoid 218 cases in 2002.

Implications: Whilst rates of post-operative pulmonary embolism are low, there is sufficient variability between hospitals to suggest there are significant opportunities to improve. Strategies are required to ensure all appropriate patients received prophylactic interventions.

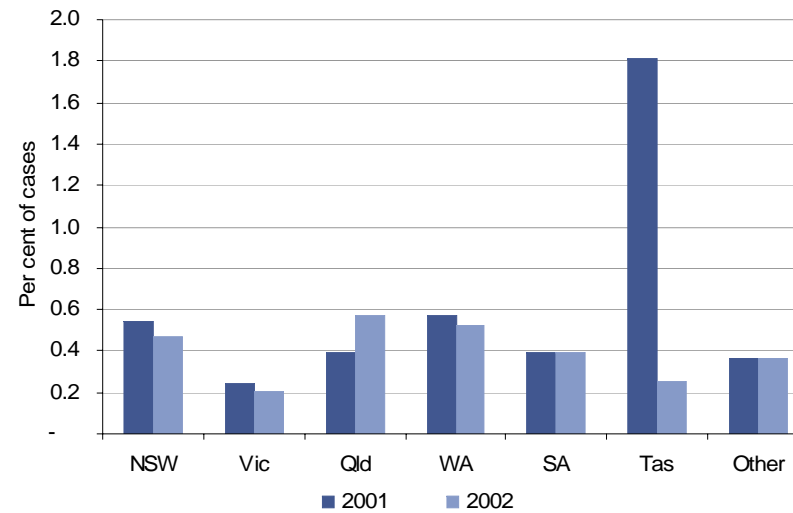
Chart 4-9

Post-Operative Pulmonary Embolism

Post-operative pulmonary embolism is reported in 0.38 per cent of cases staying in hospital longer than 7 days. One hundred and fifty-eight cases of pulmonary embolism would be avoided if all hospitals achieve the rate of hospitals ranked in the top 20 percent in 2002.

Seventy-three cases would be avoided by addressing high rates reported for 12 outlier hospitals. Two hundred and eighteen cases would be avoided if States with higher rates were able to implement strategies to reduce rates to that of Victoria, the State with the lowest rate.

Rate of post-operative pulmonary embolism for patients with a post-operative length of stay equal to or greater than 7 days: 172 Australian hospitals 2001 and 2002



Source: ACHS (2003)

Patient Safety

Pressure Ulcers

Why is this important? Pressure ulcers, also described as decubitus ulcers, pressure sores or bed sores, occur as a result of friction causing injury to the skin and prolonged unrelieved pressure preventing blood flow to the area causing the skin and underlying tissue to break down and die. Pressure ulcers can be painful, disfiguring and interfere with basic activities of daily living. In extreme cases they may become infected or lead to serious bone infections that could be life-threatening. Pressure ulcers are graded according to their stage of severity:

Stage 1: signs of observable pressure yet the skin remains intact

Stage 2: signs of a superficial ulcer, abrasion or blister

Stage 3: a deep ulcer involving the full skin thickness

Stage 4: a deep ulcer that involves deep underlying muscle, tendon or bone

Pressure ulcers are largely preventable injuries that occur across all health care and community settings as a result of prolonged periods of immobility and bed rest, often associated with hospital and nursing home admissions. In the majority of cases they can be regarded as an adverse outcome of a healthcare admission. The development of a pressure ulcer adds to patients' length of stay, the cost of care, and adversely affects patients' quality of life, morbidity and mortality (Prentice, Stacey 2001; Defloor, Bours, Schoonhoven et al 2002; Nelson 2003; Bethell 2002; National Pressure Ulcer Advisory Panel 2001; McGowan, Hensley, Maddocks 1996; Walker, Caldwell 2003). Several factors increase the risk of pressure ulcer development including immobility or restricted mobility, loss of bowel or bladder control, poor nutrition, impaired mental awareness, and age. Pressure ulcers are more common in older patients.

Findings: Pressure ulcers are known to occur at unacceptable levels within Australian health care settings. A recent study of the prevalence of pressure ulcers in Victoria conducted between August and December 2003 (Victorian Quality Council 2004), estimated:

- Twenty six and a half per cent of patients occupying a hospital bed have evidence of a pressure ulcer;
- Patients with the most severe forms of pressure ulcer (stages 3 and 4) account for 4.6 per cent of patients occupying a hospital bed; and
- Seventeen point nine per cent of patients occupying a hospital bed have acquired a pressure ulcer during their hospital stay.

The Victorian study is consistent with a national study in 2000 which estimated prevalence at 26.5 per cent of patients in 5 tertiary teaching hospitals, ranging of 13 to 37 per cent (Prentice 2001). In that study prevalence was subsequently reduced to 22 per cent of patients (range: 16 to 31 per cent) following the introduction of national clinical guidelines for pressure ulcers.

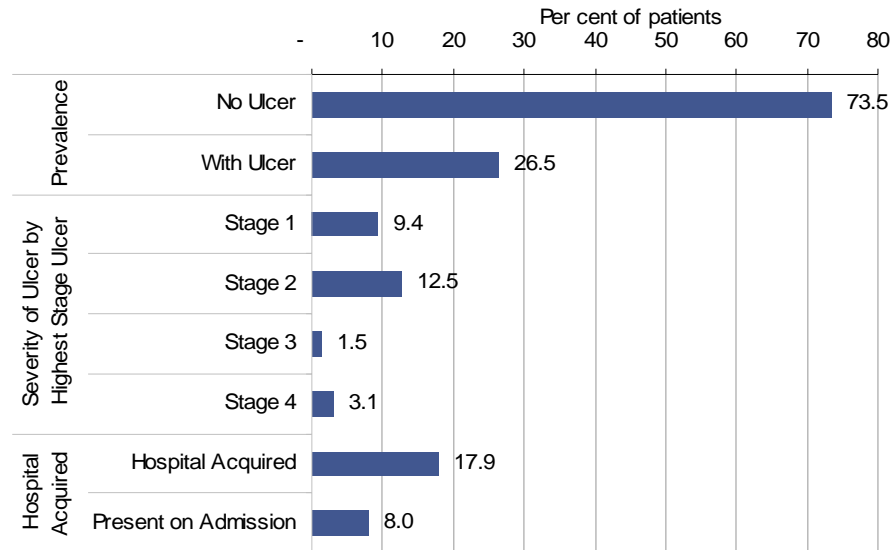
Implications: Guidelines and strategies to reduce the incidence of pressure ulcers have been developed in Australia (Australian Wound Management Association 2001; NICS 2003). Strategies include risk assessment of patients, and prevention strategies for at-risk patients including appropriate support surfaces and/or specialised equipment, regular repositioning, active rehabilitation, and early ambulation.

Chart 4-10

Pressure Ulcers

It is estimated 26.5 of patients occupying a hospital bed have evidence of a pressure ulcer. Patients with the most severe forms of pressure ulcer (stages 3 and 4) account for 4.6 per cent of patients occupying a hospital bed. An estimated 17.9 of patients occupying a hospital bed have acquired a pressure ulcer during their hospital stay.

Estimated Prevalence of Pressure Ulcers for Acute and Sub Acute Patients Occupying a Hospital Bed, Victoria 2003



Source: Victoria Quality Council 2004

Patient Safety

Patient Falls in Acute Care Settings

Why is this important? Falls are a significant cause of injury for people, particularly older people, living in the community and can result in death or initiate a train of events leading to death. Falls are also major cause of injury for people admitted to residential aged care or hospital. Falls are one of the most common forms of adverse events suffered by people in hospital, accounting for around 38 per cent of events reported through the Australian Incident Monitoring System, a voluntary system used for the reporting of adverse events in health care (Rigby, Clark, Runciman 2000). People who are hospitalised may be at greater risk of falling, due to a range of factors including the nature of their illness, their immobility and deconditioning, medications, and changes in medication regimes occurring during a hospital stay. Data on the incidence of falls in hospital patients are limited. Estimates range from 2 to 5 per cent of patients in acute care settings generally (Bakarich et al 1997; Mahoney 1998) to up to 46 per cent of patients reporting a fall at least once in their hospitalisation in sub-acute and rehabilitation settings (Forster, Young 1995; Tutuarima et al 1997). Not all falls in these settings result in injury, but some can result in serious injuries such as hip fractures, and some patients may die as a result of the injuries suffered (Emmet, Ibrahim 2003).

Findings: A recent audit of falls incidents reported in a major teaching hospital during a 10 week period, found 188 falls related to 91 patients. Sixty five per cent of these patients were aged 75 years and over. Falls were associated with a range of activities, but most commonly getting out of bed. Around a third of patients were taking medications most commonly associated with risk of falling (sedatives, psychotropics and narcotic analgesics). Fifty-six per cent of patients did not suffer an injury. Injuries suffered include pain,

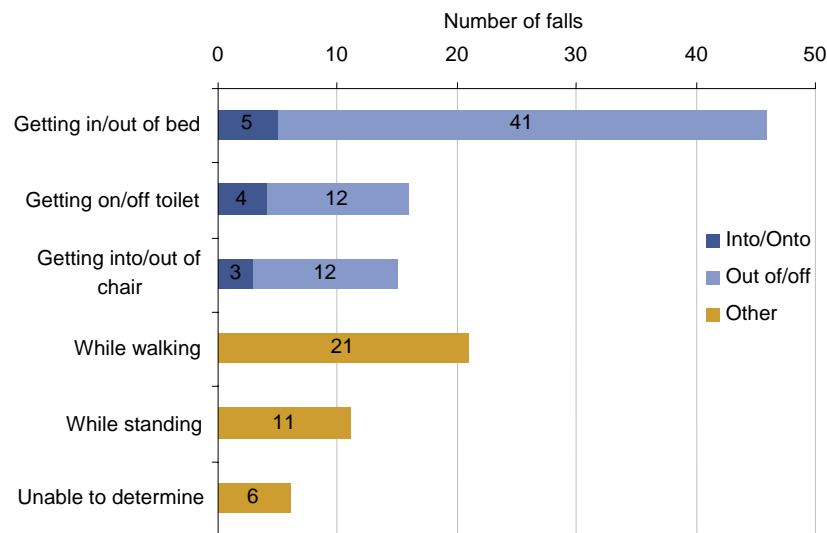
laceration and bruising, but no patients suffered a fracture. Analysis of hospital morbidity data for Australia in 2001-02, show that 546 surgical patients were coded as having a hip fracture when this would not be expected. In these cases it can be reasonably assumed the fracture occurred as a result of a fall whilst the patient was in hospital. These patients represent 0.055 per cent of surgical patients. This rate compares to estimates of 0.08 per cent for the United States in the year 2000.

Implications: Whilst falls in acute care settings are common, evidence on the effectiveness of preventive interventions is limited (Hill, Smith, Murray et al 2000; Agostini, Baker, Bogardus 2001). Nevertheless, many initiatives have been taken across Australian hospitals. For example in Victoria, following an initiative of the Clinical Liaison Service of the State Coroner's Office, an investigation standard has been developed to standardise processes for investigating deaths associated with patient falls, and better identify actions required to prevent future serious injury from falls. The Australian Council for Safety and Quality of Health Care has also distributed a CD-ROM containing Queensland guidelines on falls prevention, to hospitals and aged care facilities throughout Australia (ACSQHC 2003).

Chart 4-11 Patient Falls in Acute Care Settings

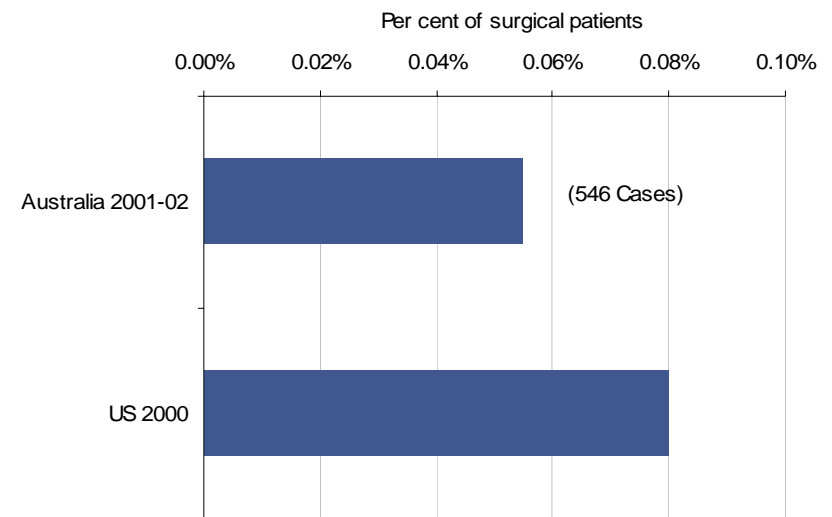
Patient falls are common in acute care settings. Many falls do not result in serious injury. There are around 550 surgical patients across Australia who suffer hip fractures as a result of a fall occurring during their hospital stay.

Fall incidents reported over a 10 week period in 2001, St George Hospital, Sydney: Activity at time of fall



Source: Donoghue, Graham, Gibbs et al 2003

Per cent of surgical patients with hip fracture as an additional diagnosis, excluding certain cases Australia (2001-02) and United States (2000)



Source: AIHW Unpublished; Romano et al 2003

Patient Safety

Medical Device Problems

Why is this important? Adverse events associated with medical devices can cause death or serious injury to patients. Problems with medical devices that could result in adverse events should be able to be detected early and acted on to prevent further or potential harm to patients.

In Australia a National Medical Device Incident Report Investigation Scheme operates through the Therapeutic Goods Administration. Incidents, problems and adverse events associated with the use of medical devices reported to the Therapeutic Goods Administration are investigated in order to determine the most likely cause of the event and recommend appropriate action that can be taken to prevent, reduce the likelihood or reduce the severity of any future events. Outcomes of investigations may include product recalls, product improvements, manufacturing site audits and manufacturing process improvements, hazard alerts, safety alerts, and other communications to users. Medical devices returned to the Therapeutic Goods Administration with adverse event reports are often tested in the Therapeutic Goods Administration laboratories.

Findings: Between 500 and 600 reports are made to the Medical Device Incident Report Investigation Scheme each year. On average:

- Thirty seven per cent of these reports (200 a year) are assessed as having the potential for injury or death;

- Twenty six per cent (149 a year) resulted in the patient dying or suffering an actual injury; and
- Twenty three actual deaths a year related to reports to the scheme.

In 2002-03, around 28 reports were assessed as having the potential for causing death, and 17 reported cases actually involved a patient dying. In the same year around 133 reports were assessed as having the potential to result in serious injury, whilst 57 reports involved a patient actually suffering a serious injury. A further 33 reports were assessed as having the potential for temporary injury, whilst 67 reports involved the patient actually suffering a temporary injury.

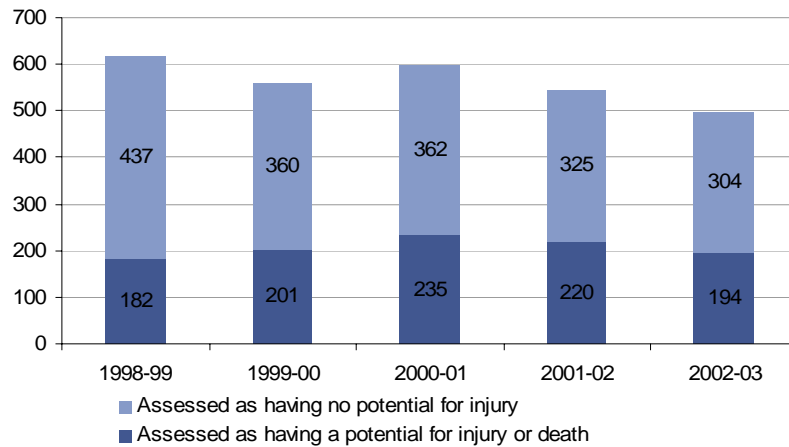
Investigations of reports can result in a range of actions. In 2002-03, there were 43 recommendations made for product improvement, 31 recalls/hazard alerts issued, 17 safety alerts issued, and improvements to user education recommended in 26 cases in addition to 65 other actions.

Implications: Despite rigorous testing of medical devices through the development phase, adverse events can occur because of design problems or inappropriate use. The national surveillance system for medical device problems creates the capacity for the regulator to investigate then initiate a range of actions to address problems.

Chart 4-13 Medical Device Problems

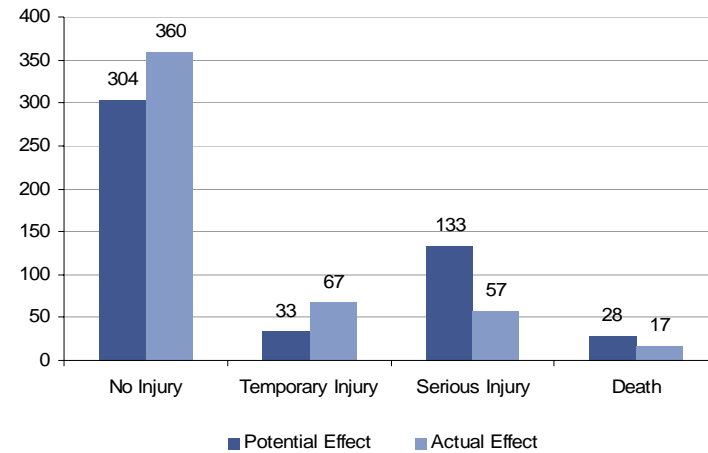
Between 500 and 600 reports are made to the Medical Device Incident Report Investigation Scheme each year. Each year, an average of 200 reports are assessed as having the potential for injury or death, and 149 reports relate to events resulting in the patient dying or suffering an actual injury.

**Reports received through the Medical Device Incident Report Investigation Scheme, Therapeutic Goods Administration
1998-99 to 2002-03**



Source: Therapeutic Goods Administration (Unpublished)

Reports received through the Medical Device Incident Report Investigation Scheme, Therapeutic Goods Administration, 2002-03



Source: Therapeutic Goods Administration (Unpublished)

Safety

Accreditation

Why is this important? The Australian Council for Safety and Quality in Health Care concluded that accreditation of health care facilities contributed significantly to quality practices and system wide awareness of quality issues (ACSQHC 2003c). The Council noted accreditation processes could be improved, and that any national effort to improve accreditation processes must lead to sustainable and demonstrable improvements in patient safety (ACSQHC 2002). Accreditation provides only an indirect indicator of the quality of services. Accreditation typically involves independent assessment of a range of quality and risk management processes.

Public hospitals can be accredited through a variety of processes, including the Australian Council on Healthcare Standards (ACHS) Evaluation and Quality Improvement Program, the Australian Quality Council, the Quality Improvement Council, the International Standards Organisation (ISO) 9000 Quality Management System or other equivalent programs. The Australian Council on Healthcare Standards requires hospitals to demonstrate continual adherence to quality improvement standards to gain and retain accreditation. Public hospital accreditation is voluntary in all jurisdictions except Victoria, where it is now mandatory for all public hospitals. Private hospitals require accreditation as part of their contracting arrangements with health funds.

Accreditation of general practices is a systematic way to help identify quality in general practice and to provide general practitioners with a framework for improving their practices over

time. Accreditation is provided by two companies - Australian General Practice Accreditation Limited and General Practice Australia. These companies arrange a peer review process to assess practices against Standards for General Practices.

Findings: Seventy-two percent of public hospitals and 92 per cent of public hospital beds were in accredited hospitals at 30 June 2002. Seventy-five percent of private hospitals and 94 per cent of private hospital beds were accredited at June 2002. The Australian Council on Healthcare Standards is the main accrediting agency accounting for 91 per cent of beds accredited in public hospitals.

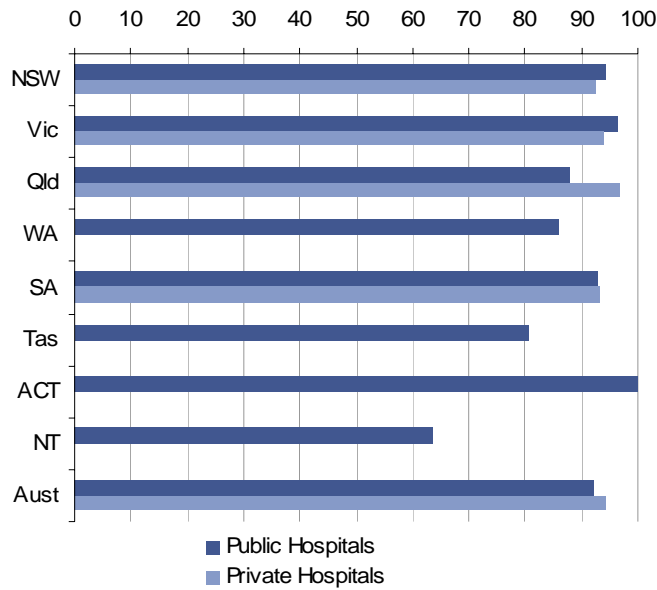
In October 2003, 4249 general practices (or 72.1 per cent of those eligible) were accredited with Australian General Practice Accreditation Limited.

Implications: Both the public and private sectors achieve high levels of accreditation. While recognising that there are risks in care delivery, consumers attending accredited services can have confidence that there are systems in place to minimise risks and to continually improve practice. However, there is a need for accreditation agencies to continue to improve the rigour and transparency of their processes, to minimise duplication in their programs for better resource utilisation, and to support the hospitals and services participating in their programs to provide more information to the public on accreditation reports and results.

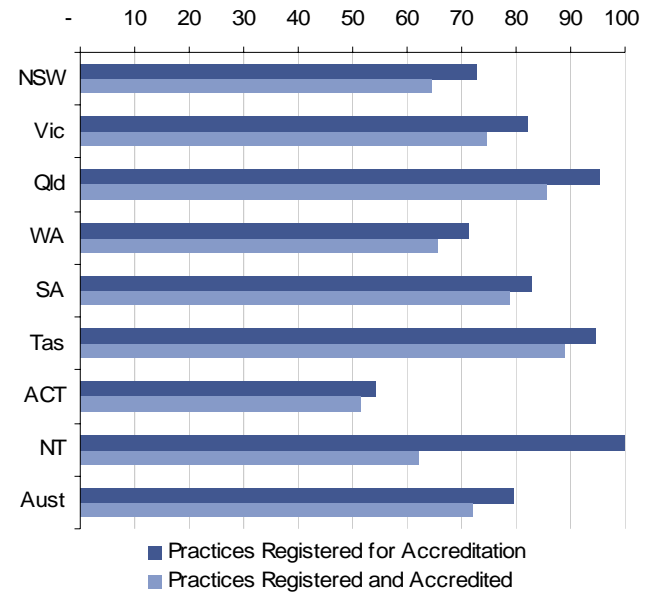
Chart 4-14 Accreditation

Public and private hospitals achieve a high level of accreditation.
Accreditation is becoming common for general practice, with 72 per cent of practices accredited with one of the accreditation bodies.

**Beds in Hospitals Accredited as a Percentage of all Hospital Beds
2001-02**



**General practice accreditation by
Australian General Practice Accreditation Limited, October 2003**



AIHW 2003a. Note: Data on accreditation for private hospitals is based on data collected by the Australian Bureau of Statistics.

AIHW 2003a

Chapter 5

Access to Care

Access refers to the ability of people to obtain health care at the right place and right time irrespective of income, physical location and cultural background.

National Health Performance Committee 2001.

Chapter 5

Access to Care: Introduction

Access to care refers to the "ability of people to obtain health care at the right place and right time irrespective of income, physical location and cultural background" (National Health Performance Committee 2001).

Compared to many other western health systems, Australia has a relatively comprehensive system of universal health insurance, covering medical services, pharmaceuticals, hospitals and long term care. Nevertheless there is a wide range of evidence that shows that the capacity to access care is not equivalent for different groups in society. In some instances barriers to access reflect geographical factors. Adequate availability of health professionals is a major issue for some communities, particularly in rural and remote Australia. Lower socio-economic groups, despite experiencing a disproportionate share of disease, often face barriers to accessing effective care, due to the location of facilities, the availability of health professionals and financial costs.

This chapter examines a range of indicators related to access. The data show:

- **Primary medical practitioners:** many rural and remote communities face significant shortfalls in the availability of

primary medical practitioners, although the situation has improved since 1996-97;

- **Public hospital beds:** the supply of public hospital beds is higher in rural and remote communities. People living in these communities have higher rates of admissions to hospital and in particular public hospitals, often outside of the local region;
- **Elective surgery in public hospitals:** 50 per cent of people wait longer than 27 days for elective surgery in public hospitals in Australia;
- **Emergency departments:** less urgent patients in emergency departments often have to wait longer than suggested by national benchmarks;
- **Dental Care:** access to dental services is a significant issue, particularly for people on low incomes; and
- **Costs:** many Australian still do not access various forms of health care because of the cost of care.

Access: Summary of Charts and Findings

Chart 5-1 Availability of Health Professionals. Over the last five years availability of general practitioners per 100 000 people has decreased marginally by around 3 per cent. Whilst rural and particularly remote regions continue to have lower availability of general practitioners, differences between metropolitan, rural, and remote regions have been reduced.

Chart 5-2 Timely Initiation of Antenatal Care. In NSW in 2002, 86.4 per cent of confinements involved mothers who had had their first antenatal visit within 19 weeks of gestation.

Chart 5-3 Access to Hospital Services. People living in rural and remote regions of Australia use public hospitals at a higher rate than the rest of the population. Rural and remote regions have higher supply of public hospital beds compared to the major cities and inner regional areas.

Chart 5-4 Waiting Times for Elective Surgery. In 2001-02 the median waiting time for patients admitted for elective surgery in Australian public hospitals was 27 days. However, waiting times vary significantly between procedures and between States and Territories.

Chart 5-5 Waiting in Emergency Departments. In 2002-03 over 99 per cent of patients requiring resuscitation were seen immediately. Seventy six per cent of emergency patients were seen within 10 minutes. Sixty one per cent of urgent patients were seen within 30 minutes. Waiting times vary across jurisdictions for emergency and urgent patients.

Chart 5-6 Access to Aged Residential Care. The supply of operational residential aged care varies slightly between states and geographical localities. In 2001-02 around 20 per cent of people entering high care residential care waited over three months for a placement.

Chart 5-7 Access to Dental Care. Access to dental care for children varies across States and Territories, and is impacted by the reach of school dental services. Adults in low income households have poorer access to dental care.

Chart 5-8 Access Problems Due to Cost. Despite universal health insurance arrangements, many Australian still do not access various forms of health care because of the cost of care.

Access

Availability of General Practitioners

Why is this important? General practitioners are often the first point of contact for health services. The availability of general practitioners is a key aspect of accessibility for any health care system. By June 2002, there were 24 307 non-specialist medical practitioners (general practitioners) who claimed benefits under the Medicare Benefits Schedule. This figure does not account for variations in the number of services provided by each general practitioner, or the extent to which general practitioners work on a full-time, part-time and casual general practitioners. Full-time workload equivalent measures account for the partial contribution of casual and part-time general practitioners, and the contribution of general practitioners who work more than the average full-time doctor.

Findings: In 2001-02 there were:

- 16 736 full-time workload equivalent general practitioners in Australia, a small increase on 1997-98. However, due to population growth, the number of full-time workload equivalent general practitioners has decreased for Australia overall, from 88 per 100 000 people to 85 per 100 000 people.
- Availability was higher in capital cities and lower in rural and remote regions. General practitioner availability in remote regions was much lower than the rest of the country.

- Nevertheless over the last five years there has been good progress in reducing inequalities in access to general practitioners, with availability in rural and remote areas increasing by 11.4 per cent (from 3 596 to 4 005 full-time workload equivalent general practitioners).

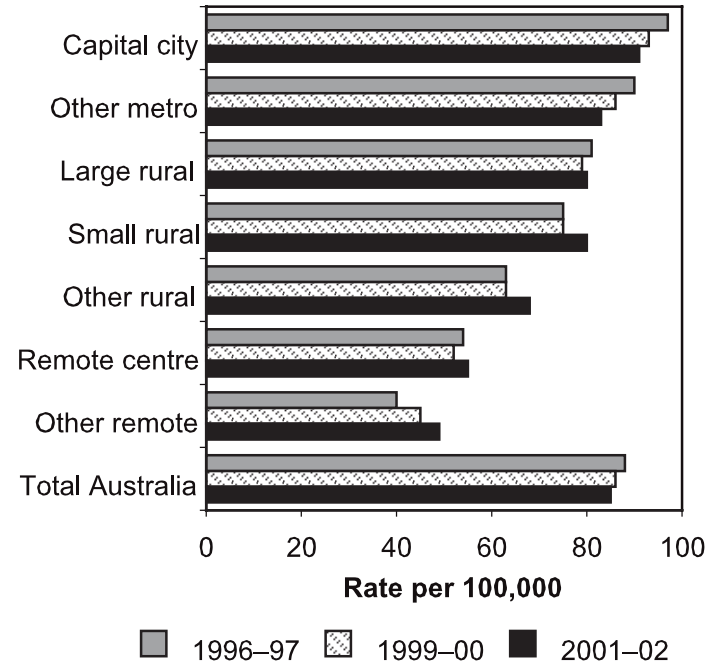
Implications: The availability of the primary care medical workforce has declined since 1996-97. Achieving an appropriate supply and balance of the medical workforce, particularly between primary and secondary/tertiary care sectors is an important function for government. Whilst there has been some success in improving the availability of general practitioners in rural and remote regions since 1996-97, large disparities remain. This requires ongoing and new strategies to address regional imbalances.

Chart 5-1

Availability of General Practitioners

Over the last five years availability of general practitioners per 100 000 people has decreased marginally by around 3 per cent. Whilst rural and particularly remote regions continue to have lower availability of general practitioners, differences between metropolitan rural and remote regions have been reduced.

**Full time workload equivalent general practitioners per 100 000 population by area of practice of general practitioner
Australia, 1996-97; 1999-00 and 2001-02**



Australian Government Department of Health and Ageing (unpublished)

Access

Timely Initiation of Prenatal Care

Why is this important? The purpose of antenatal visits is to monitor the health of both the mother and baby, provide advice to promote the health of both the mother and baby, and to identify antenatal complications to provide appropriate intervention at the earliest time. Antenatal services to pregnant women can be provided through general practitioners, specialist obstetricians, and public hospitals. If the first antenatal visit occurs within 20 weeks gestation, early monitoring can occur and interventions conducted to prevent problems developing in both the mother and baby. The babies of mothers who present later in their pregnancies, and the mothers themselves, often have poorer outcomes.

Findings: National data on the commencement of antenatal care are not available. However some States have collected these data. In NSW in 2002, mothers who had their first antenatal visit within 20 week of gestation accounted for 86.4 per cent of confinements. This was a slight increase on 1998 (84.9 per cent). There is considerable variation between regions in NSW. In the most remote region, the Far West Area Health Service, 74.4 per cent of mothers were seen within 20 weeks.

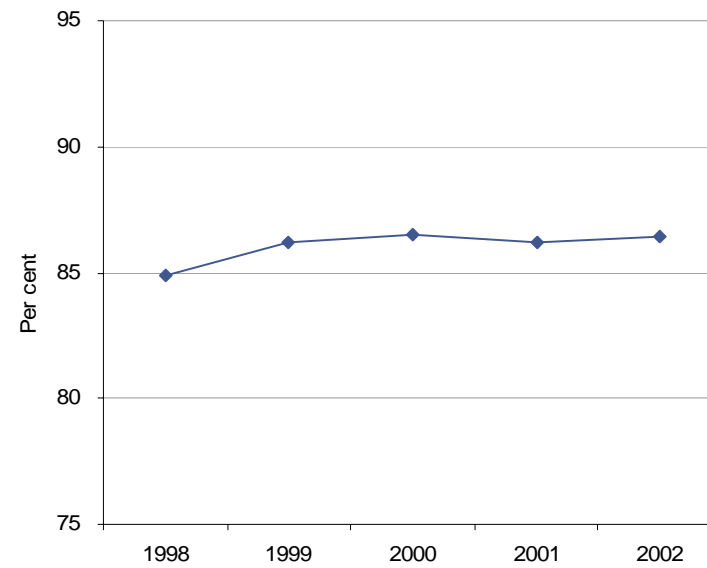
Implications: Ensuring all mothers access antenatal care early in their pregnancy is important. However there are inconsistent practices and guidelines on the initiation, regularity and content of antenatal care across Australia (Hunt and Lumley 2002). Particular groups have higher risks of poor pregnancy outcomes. Low birth weight is a major issue for Indigenous mothers, which may have short and long term health consequences for babies affected.

Chart 5-2

Timely Initiation of Prenatal Care

In NSW 86.4 per cent of confinements involved mothers who had had their first antenatal visit within 19 weeks of gestation.

Confinements by duration of pregnancy at first antenatal visit, NSW 1998-2002



Source: Centre for Epidemiology and Research, NSW Department of Health. 2003.

Access

Access to Hospital Services

Why is this important? Hospitals form an important component of health systems, providing secondary and tertiary level services for people who are very sick, require diagnostic services, or assistance through episodes such as childbirth. Public hospitals are a key feature of the Australian system of hospital care. Under the principles of the Australian Health Care Agreements, eligible Australians are able to access public hospitals free of charge on the basis of clinical need and within a clinically appropriate period. The Agreements also provide that there be equitable access to services for all eligible persons, regardless of their geographic location.

Giving effect to these principles is complicated by a range of issues such as impact of private health insurance and private hospitals and the adequacy of primary medical care in the local community. The analysis presented below focuses on one dimension of access – the extent to which access to public hospitals is equitable across the regions of Australia.

Findings: People living in rural and remote regions of Australia use public hospitals at higher rates than the rest of the population. For example, people living in very remote region are admitted to public hospitals at rates that are 80 per cent higher than the rest of Australia.

To some extent these differences reflect the lower use of private hospitals by people living in rural and remote regions. Nevertheless, when public and private hospitals are considered together, hospital admission rates are higher for rural and remote regions. Higher rates of use reflect several factors including higher health needs in these populations, less developed primary health care systems capable of preventing hospitalisation (as discussed in Chart 3-4), and fewer alternatives for residential aged care. The distribution of public hospital beds across regions follows a similar pattern, with higher supply in rural and remote regions.

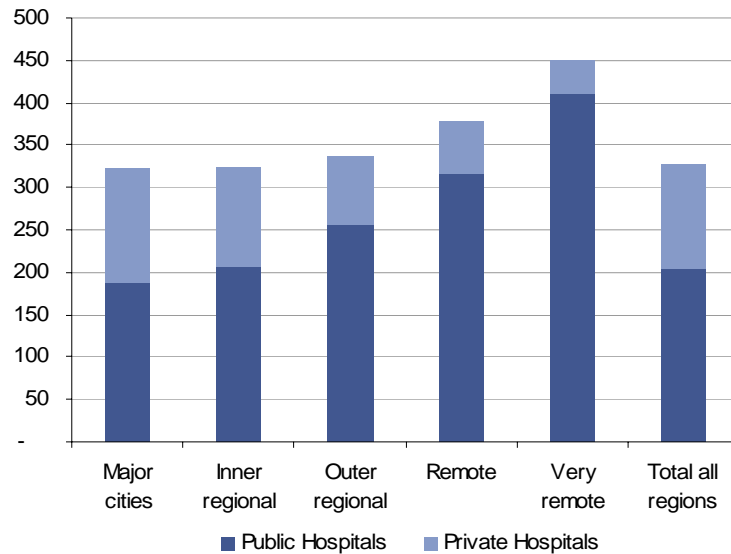
Implications: Public hospitals play an important role in ensuring all Australians, including people living in rural and remote regions, are able to access hospital services when needed. However, this does not mean all Australians are able to access the appropriate mix of services or that their use of hospitals is always appropriate. For example, there is evidence that people from remote regions do not receive equitable access to revascularisation procedures (see Chart 7.2). Achieving appropriate access to hospitals for all Australians remains a core challenge for all governments.

Chart 5-3

Access to Hospital Services

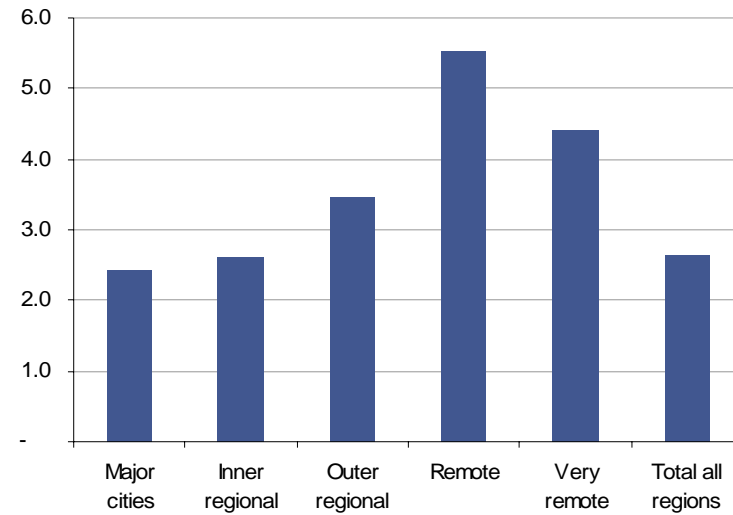
People living in rural and remote regions of Australia use public hospitals at a higher rates than the rest of the population. Rural and remote regions have higher supply of public hospital beds compared to the major cities and inner regional areas.

Hospital separations per 1 000 population, by remoteness area of usual residence, Australia, 2001-02



Source: AIHW 2003a

Public hospital beds per 1 000 population, by remoteness area of usual residence, Australia, 2001-02



Source: AIHW 2003a

Access

Waiting Times for Elective Surgery

Why is this important? An estimated 600 000 patients were admitted for elective surgery procedures in public hospitals in 2001-02. Data relating to 508 000 of the admissions were submitted to a national data collection. Elective surgery waiting lists are used as a tool for scheduling and prioritising these patients. Data collected from these lists highlights that some patients have to wait excessive lengths of time prior to being admitted to hospital. Waiting times for elective surgery are consistently identified by patients, the public and politicians as a major concern. However, there is often a poor understanding of the nature of waiting lists and waiting times.

Findings: In 2001-02 the median waiting time for patients admitted for elective surgery in Australian public hospitals was 27 days. However, 10 percent of patients waited more than 203 days before being admitted for surgery. Four and a half per cent of patients waited more than 12 months before being admitted.

Waiting times vary significantly between procedures. The median waiting time for people admitted for coronary artery by-pass surgery was 16 days. The median waiting time for hip replacement was 96 days. Examples of the median waiting times for other procedures include: cholecystectomy - 41 days, myringotomy – 32 days, and prostatectomy – 29 days. Median waiting times for particular procedures also vary quite substantially between states.

Jurisdictions with higher surgery rates do not necessarily have lower median waiting times. Queensland had the lowest waiting times for many procedures but also relatively low separation rates for these procedures. In comparison, Tasmania had the highest median waiting times for some procedures and also high separation rates.

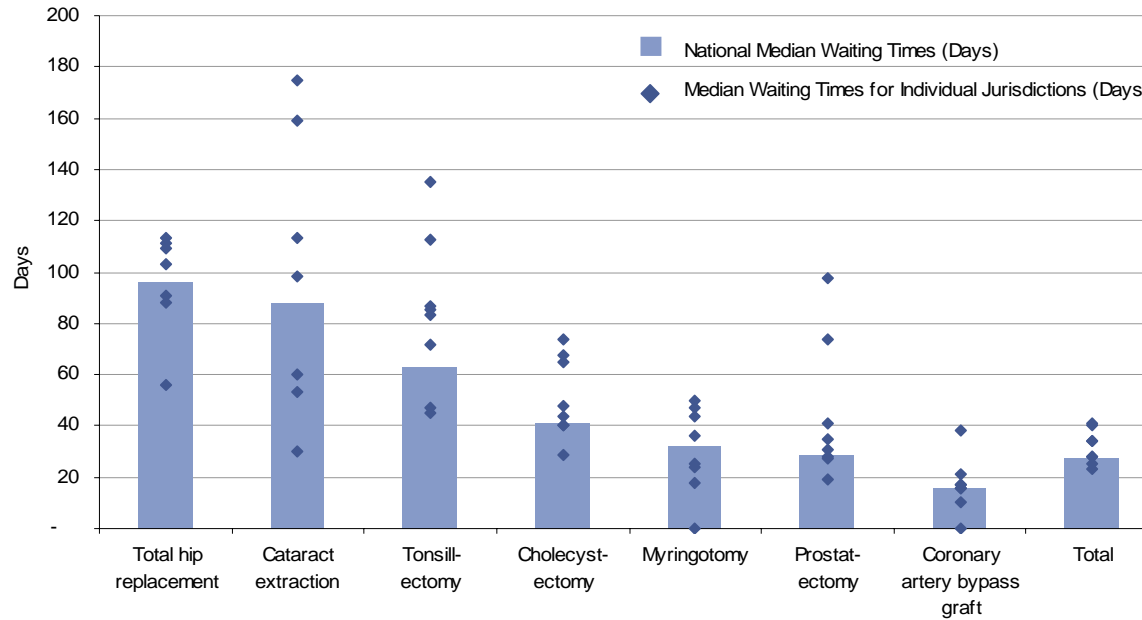
A recent OECD report on elective surgery waiting times found that Australia tends to have lower waiting times compared to many other countries, such as the United Kingdom and Canada (Hurst and Sicilliani 2003). However, the report observed that in some social insurance-based European countries waiting times appear to be negligible.

Implications: Elective surgery waiting times continue to be a major concern for the public and patients. Waiting times are a reflection of a complex set of interactions between the supply of the medical workforce, its distribution across the public and private sectors, the nature of the demand for elective surgery, and State and Territory government policies and strategies.

Chart 5-4 Waiting Times for Elective Surgery

In 2001-02 the median waiting time for patients admitted for elective surgery in Australian public hospitals was 27 days. However, waiting times vary significantly between procedures and between States and Territories.

**Median waiting times for elective surgery, selected procedures
by jurisdiction, Australia 2001-02**



Source: AIHW 2003a

Access

Waiting in Emergency Departments

Why is this important? Emergency departments in public hospitals play a key role in ensuring the public hospital system is able to manage emergency patients requiring rapid treatment, as well as less urgent cases where community based medical care is not appropriate or not available. Patients attending emergency departments should be treated within an appropriate time. All patients attending public hospital emergency departments are assessed and are assigned a triage category, which reflects the urgency with which treatment should commence. The appropriate time for commencement of treatment for the more urgent cases is less than that for other cases. Within Australia benchmarks for the commencement of treatment have been identified for each triage category. The benchmarks are as follows:

Triage Category 1: Patient needs resuscitation	Seen Immediately
Triage Category 2: Emergency	Seen within 10 minutes
Triage Category 3: Urgent	Seen within 30 minutes
Triage Category 4: Semi-urgent	Seen within 60 minutes
Triage Category 5: Non-urgent	Seen within 120 minutes

Findings: The number of patients waiting less than the benchmarks appears to have been relatively stable across the last four years for Triage categories 1, 2, and 3. In 2002-03 over 99 per cent of patients requiring resuscitation were seen immediately. Seventy six per cent of emergency patients were seen within 10 minutes. There was a slight improvement over previous years for resuscitation and emergency patients. Sixty one per cent of urgent patients were seen within 30 minutes, 60 per cent of semi-urgent patients were seen within 60 minutes and 83 per cent of non-urgent patients were seen within 120 minutes. There is variability between jurisdictions in the achievement of the benchmarks for emergency and urgent presentations.

Implications: Whilst data comparability between hospitals and jurisdictions is an issue, the achievement of benchmarks for emergency and urgent presentations appears to vary across jurisdictions, suggesting room for improvement.

Chart 5-5

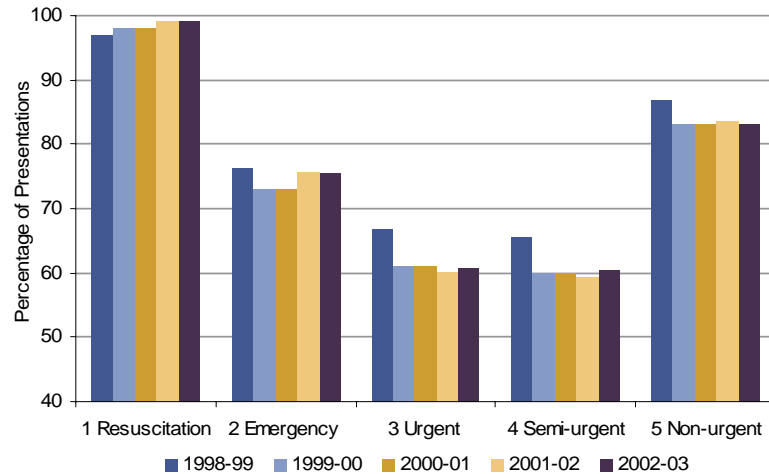
Waiting in Emergency Departments

In 2002-03 over 99 per cent of patients requiring resuscitation were seen immediately.

76 per cent of emergency patients were seen within 10 minutes. Sixty-one per cent of urgent patients were seen within 30 minutes.

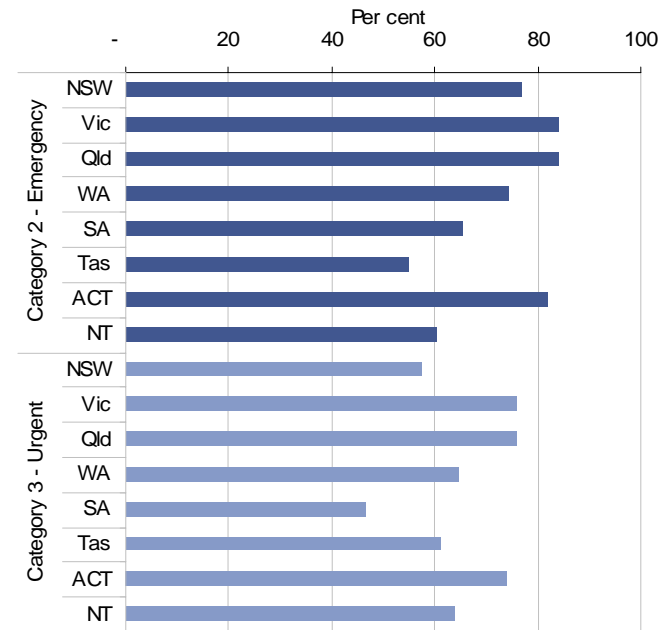
Waiting times vary across jurisdictions for emergency and urgent patients.

Percentage of emergency department patients treated within benchmarks for triage categories, Australia, 1998-99 to 2002-03



Steering Committee for the Review of Government Service Provision 2004

Percentage of emergency and urgent patients treated within benchmarks by jurisdiction, 2002-03



Steering Committee for the Review of Government Service Provision 2004

Access

Access to Residential Aged Care

Why is this important? Residential care is required for people who are unable to live independently at home. Australia has a national residential aged care scheme that supports people in these circumstances. To enter residential care, people must have the appropriate recommendation from an Aged Care Assessment Team. Two levels of care are available: low-level care and high-level care. Short-term respite care services are also available. Depending on their financial circumstances, residents contribute to the cost of their care. Poor access to residential care can have important effects on the health system. People waiting for placement in residential care can often wait inappropriately in hospital beds.

Findings: Since the aged care reforms following the commencement of the Aged Care Act 1997, the number of operational residential aged care places has increased by an average of 1 per cent per year, rising from 139 917 in June 1998 to 146 268 operational places in June 2002. In June 2002, there were 2 961 residential aged care services in Australia providing these places. By 30 June 2003, there were 150 496 operational residential care places (provisional estimate). Over the same period the number of people aged 70 years or older increased by 8.7 per cent. The number of operational places per 1 000 persons aged over 70 years varies slightly between States and Territories.

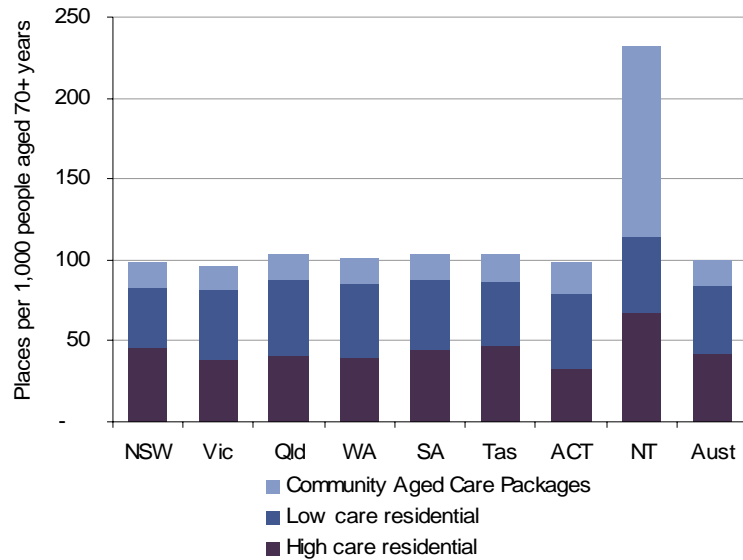
In 2002-03, 18.5 per cent of patients admitted to high care residential care have waited 3 months or longer whilst 38.5 per cent of people entering low care residential care waited 3 months or more.

Implications: Australians have relatively good access to residential care, although in recent years the increase in operational places has not matched the increase in the older population. The 18.5 per cent of people entering high care residential care who have waited 3 months or more are likely to impact on the acute hospital sector.

Chart 5-6 Access to Residential Aged Care

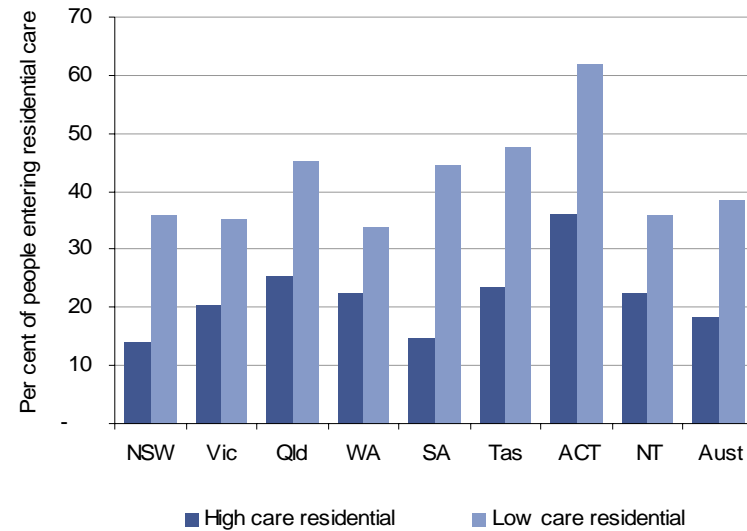
The supply of operational residential aged care varies slightly between jurisdictions and geographical localities. In 2002-03, 18.5 per cent of people entering high care residential care waited 3 months or more for a placement, whilst 38.5 per cent of people entering low care residential care waited 3 months or more.

Operational residential places and Community Aged Care Packages per 1 000 people aged 70 years and over, June 2003



Source: Steering Committee for the Review of Government Service Provision 2004

Per cent of people entering residential aged care in 2002-03 who have waited three months or longer since their Aged Care Assessment Team assessment



Source: Steering Committee for the Review of Government Service Provision 2004

Access

Access to Dental Care

Why is this important? Oral health conditions, including dental decay and gum disease, are among the most common health conditions in Australia. Poor oral health in adults, particularly older adults, can impact on nutrition and other aspects of health. International data suggest children in Australia enjoy good oral health, although there is evidence that improvements in the oral health of children has peaked and social gradients persist (AIHW 2002). However oral disease in adults has been persistently high. Although there have been reductions in the percentage of older adults who have lost their natural teeth from 66 per cent in 1979 to 38 per cent in 1999, lower income groups have persistently higher percentages of people who have lost their natural teeth (AIHW 2002). Access to dental care for children and adults remains an important component of maintaining and improving the oral health of Australians.

Findings: Over 70 per cent of children aged 5–14 years in all States and Territories had made a dental visit in the previous 12 months. However, this proportion varied from 72 per cent in the Australian Capital Territory and 74 per cent in Victoria to 89 per cent in Queensland and Western Australia. Just over 60 per cent of children visited for a checkup, while 21 per cent visited for a problem in the previous 12 months. Access to school dental services varies substantially between States and Territories, with access lowest in NSW, Victoria and the ACT. Among children aged 5–14 years who

are covered by a government concession card, 72 per cent made their last visit at a school dental service compared to 43 per cent of non-cardholders. However, a higher proportion of cardholders had not visited in the last year - 27 per cent compared to 16 per cent of non-cardholders.

In 2002, over half of Australians with at least one natural tooth aged over 15 years made a dental visit within the previous 12 months, with 28 per cent making their last visit for a dental problem. Problem visits were almost equally split between pain and non-pain problems. Large differences were observed between income groups in the proportion of people visiting for a check-up. The proportion of people last visiting for a check-up increased steadily with income, from 20 per cent for people in households with annual income less than \$12 000 to 35 per cent for people in households with annual income of \$60 000 or more. Fifty-one per cent of people in the lowest income household did not make a dental visit in the last year compared to 37 per cent of people in the highest income households.

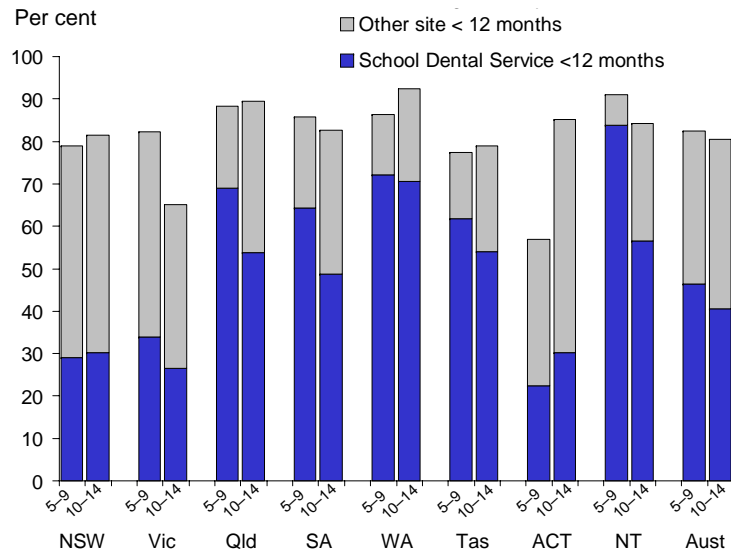
Implications: Public programs such as school dental services and dental programs for concession card holders play an important role in addressing unequal access to dental care. However, inequalities in access persist.

Chart 5-7

Access to Dental Care

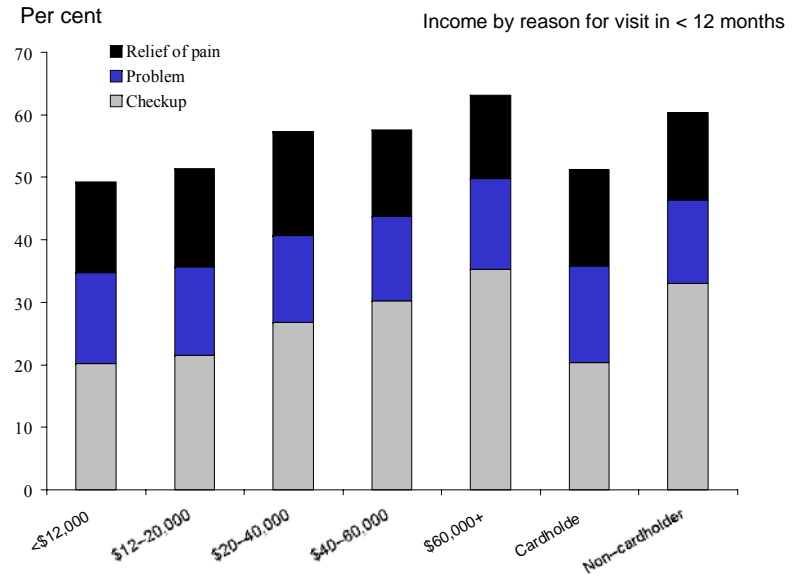
Access to dental care for children varies across States and Territories, and is impacted by the reach of school dental services. People in low income households have poorer access to dental care.

Children aged 5-14 years who made a dental visit (school dental service or other site) within the previous 12 months, 2002 (per cent)



AIHW Unpublished

Persons aged 15 years+ who made a dental visit within the previous 12 months by household income and reason for visit, 2002 (per cent)



AIHW Unpublished

Access

Access Problems Due to Cost

Why is this important? Compared to many other western health systems, Australia has a relatively comprehensive system of universal health insurance, covering medical services, pharmaceuticals, hospitals and long term care. Arrangements for these services reduce or eliminate barriers to accessing services due to cost. Nevertheless costs borne by patients and their families remain a very real barrier to accessing services, both those not covered by national insurance arrangements and those covered by national schemes where out-of-pocket payments can be significant. Evidence on the nature of these barriers, and how these impact on actual use of services is relatively scant. Recently considerable attention has been paid to the impact that the level of bulk billing by general practitioners has had on access.

One source of information is an international survey of consumer experiences in five countries sponsored by the Commonwealth Fund of New York. The survey has been conducted in four different years since 1988-89. The survey conducted in 2001 examined issues related to inequalities in health and access to care.

Findings: Despite universal health insurance arrangements, many Australians still do not access care because of the cost of care:

- Nineteen per cent of survey respondents in Australia indicated they did not fill a prescription because of cost;
- Eleven per cent had a medical problem but did not visit a doctor due to cost;
- Fifteen per cent did not get a recommended test, treatment or follow-up due to cost;

- Thirty-three per cent reported needing dental care, but did not visit a dentist due to cost; and
- Eleven per cent reported having problems paying their medical bills.

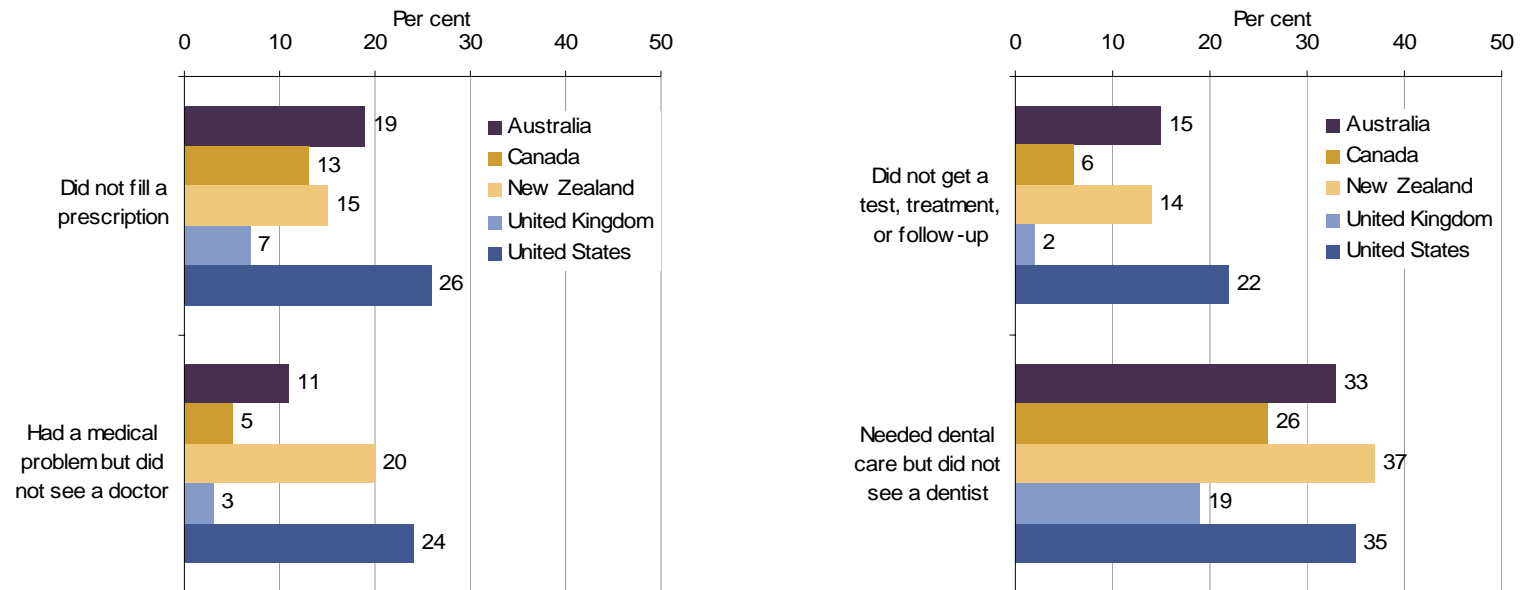
The survey found that these problems are more prevalent for people on below average incomes. For example 17 per cent of people on below average incomes had problems in paying their medical bills, whilst only 8 per cent of people on above average incomes had problems. Proportionately more Australians experience problems due to cost compared to people in the United Kingdom and Canada. However, proportionately fewer Australians experienced these problems compared to people in the United States.

Implications: For some Australians, cost remains a barrier to accessing health care, including health care covered by national health insurance arrangements. Despite safety net arrangements, these barriers are likely to be most significant for those people in greatest need of health services – those people with chronic illnesses requiring regular visits to the doctor and multiple prescriptions. Recent Government initiatives have been introduced to encourage bulk billing for general practitioners treating children under 16 years and people with a Commonwealth Concession Card. In addition, a new Medicare safety net has been introduced to assist families with children and Commonwealth Concession Card Holders whose out-of-pocket medical costs exceed \$300 in the year, and singles, couples and higher income families whose out-of-pocket medical costs exceed \$700 in the year.

Chart 5-9 Access Problems Due to Cost

Despite universal health insurance arrangements, many Australian still do not access various forms of health care because of the cost of care.

Access problems in the past year because of cost, Five Countries, 2001



Source: Commonwealth Fund/Harvard/Harris Interactive 2002 International Health Policy Survey as reported in Blendon, Schoen, DesRoches 2003

Chapter 6

Responsiveness

Respect for dignity, confidentiality, participation in choices, promptness, quality of amenities, access to social support networks, and choice of provider.

- National Health Performance Committee 2001.

Chapter 6

Responsiveness: Introduction

Creating a responsive health system serves two goals. The attributes of responsive health care, such as those set out in the definition provided above, are all qualities that are valued in themselves by the people and communities served by health systems (Valentine and Saloman 2003). A second goal is that more responsive health systems are likely to be able to better engage patients and communities in the task of delivering effective health care and improved health.

Responsiveness goes beyond the concept of patient satisfaction (Valentine, de Silva, Kawabata et al 2003) although, in Australia, measurement of patient satisfaction has been the most common means of assessing patient and community experience of health care. Despite the focus on patient satisfaction, there are few consistent national sources of information on patient satisfaction. This chapter reviews two sources of information on patient satisfaction.

Good doctor-patient relationships and communications are a central aspect of responsiveness. Good communications can improve patient satisfaction, increase a patient's access to essential information about their condition or the steps needed to prevent illness, improve the motivation of patients to modify behaviour or comply with treatment, improve the chances for accurate diagnosis, result in better decision making about which course of treatment or

options are best for the individual patient, and potentially reduce complaints and litigation (U.S. Department of Health and Human Services Agency for Healthcare Research and Quality 2003). This chapter also presents data on the quality of doctor-patient relationships from two recent international surveys.

Whilst the quality of doctor-patient relations in Australia compares relatively favourably to some other countries, there are many areas in which relationships could be improved. For example over 50 per cent of sicker adults report their regular doctor did not ask them for ideas and opinions about treatment and care.

The data examined in this chapter suggest there is some dissonance between the views of the general public and the experience of patients. For example, less than a half of the general public rate the services provided by public hospitals as very or fairly high. Yet around 90 per cent of public hospital patients say they are very or fairly satisfied with the care provided. The general public rate the quality of care provided by doctors and general practitioners more highly than the quality of care generally.

Responsiveness: Summary of Charts and Findings

Chart 6-1 Satisfaction with the Health Services. Around half the general public rate the quality of care in Australia as very or fairly high. Ratings of doctors and general practitioners are higher but ratings are slightly lower for public hospitals. There has been an overall decline in the rating of Australian health care since 1987. Sixty one per cent of people who have been admitted to public hospitals, as opposed to the general public, say they are very satisfied with the care provided, with little change over the last 8 years.

Chart 6-2 Perceptions of Quality of Doctor-Patient Relations. In 2001, the per cent of Australians rating the quality of doctor responsiveness as excellent or very good was 80 per cent for treating the patient with dignity and respect, 73 per cent percent for listening carefully to their concerns, 72 per cent for providing all the information the patient wanted, and 69 per cent for spending enough time with the patient.

Australians rate the quality of doctor responsiveness relatively favourably compared to some other countries. However, there are many areas in which relationships could be improved. For example, 23 per cent of sicker adults believed their regular doctor did not make clear specific goals for treatment, over 50 per cent of sicker adults reported their regular doctor did not ask them for ideas and opinions about treatment and care, and 31 per cent reported there was a time in the last 2 years when they did not follow their doctor's advice or treatment plan.

Responsiveness

Satisfaction with Health Services

Why is this important? Feedback on patient experiences, and community views of health care services and providers are important for shaping health services and policy. Australia has a mixed history of systematically seeking feedback from the people for whom health services are intended to benefit. A recent report on government services, found a wide variety of mechanisms implemented by different States and Territories for seeking feedback on patient experiences of hospitals and related services (Steering Committee for the Review of Government Service Provision, 2004), with only two States adopting similar methods. There are few publicly available surveys of patient satisfaction with their experience with medical practitioners in private practice. A private sector survey is one of the few sources of information that provides time series information on community and patient views and experiences (TQA 2001). Another source is an international survey – *The Commonwealth Fund/Harvard/Harris Interactive 2001 International Health Policy Survey*.

Findings: Based on the TQA survey, the longest running survey of community attitudes and experience of health care in Australia:

- Fifty six per cent of the Australian community rate the quality of health care in Australia as very or fairly high;
- Around 69 per cent rate quality of care provided by doctors and general practitioners as very or fairly high, but only 45 per cent rate the service offered by public hospitals as very or fairly high;
- Over 90 per cent of patients who have been admitted to hospitals say they are very or fairly satisfied with the care provided; and

- Sixty one per cent of patients for public hospitals said they were very satisfied.

Patient satisfaction is consistently higher for private hospitals, but the difference is relatively small.

The Commonwealth Fund/Harvard/Harris Interactive 2001 International Health Policy Survey found that 62 per cent of Australians rated the medical care they received in the last 12 months as excellent or very good. This compared favourably with Canada, the United Kingdom and the United States, although more people in New Zealand rated their care as excellent or very good. The Commonwealth Fund survey also found that more people in lower income groups, compared to higher income groups, rated care in the last 12 months as excellent or very good.

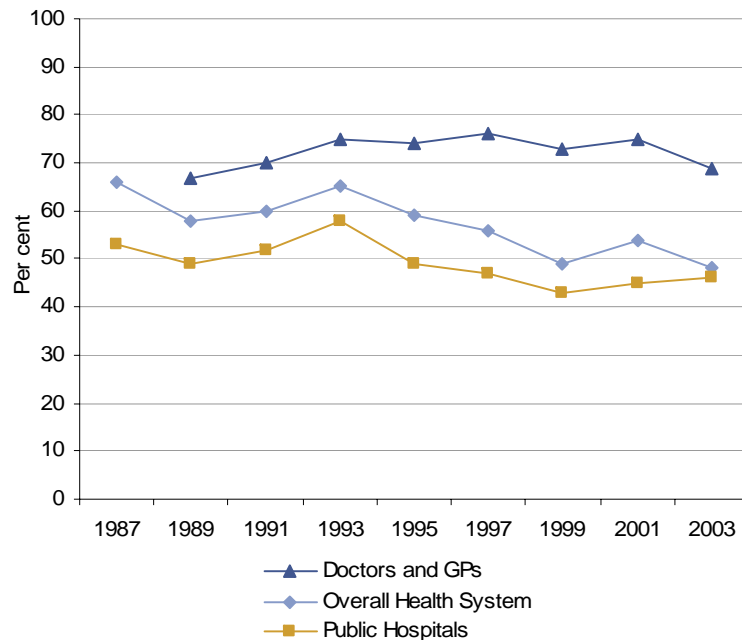
Implications: The data available suggest there is a difference between the perceived quality of hospital care and the actual experience of patients, with patients giving more favourable ratings than the general public. Interpreting surveys of patient experience is notoriously difficult. Whilst there are various initiatives to improve mechanisms for obtaining this feedback, these are not consistent across Australia. Recently the WHO has sponsored mechanisms to more systematically assess the responsiveness of health care systems across the world (Murray and Evans 2003), which will eventually lead to better information in Australia at the national level for assessing community and patient experiences.

Chart 6-1

Satisfaction with Health Services

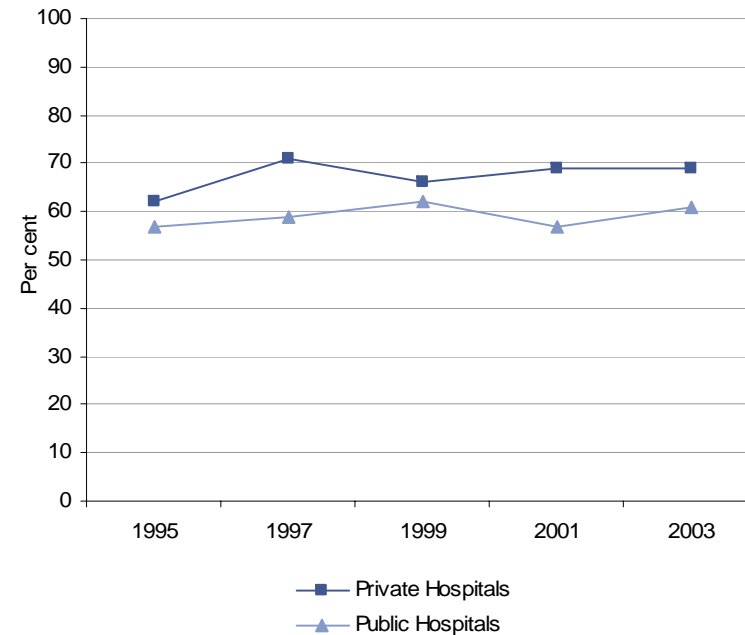
Around half the general public rate the quality of care in Australia as very or fairly high. Ratings of doctors and general practitioners are higher but ratings are slightly lower for public hospitals. There has been an overall decline in the rating of Australian health care since 1987. Sixty one per cent of people who have been admitted to public hospitals, as opposed to the general public, say they are very satisfied with the care provided, with little change over the last 8 years.

Per cent of general population rating overall health care, public hospitals or doctors and general practitioners, very high or fairly high, Australia 1987 - 2003



Source: TQA Research: Health Care & Insurance, Australia 2001.

Per cent of patients responding that they were very satisfied with their last hospital stay, public and private hospitals, Australia, 1995, 1997, 1999, 2001 and 2003



Source: TQA Research: Health Care & Insurance, Australia 2001.

Responsiveness

Perceptions of Quality of Doctor-Patient relations

Why is this important? Good relationships and communication between patients and doctors form a cornerstone of effective care and are valued highly by patients. This is even more so for patients experiencing long term chronic conditions, where a sound relationship with their doctor will often determine the extent to which they will maintain their motivation and compliance with recommended treatments. Approaches to assessing physician responsiveness have recently been developed, but have had only limited application in Australia. The results presented here are derived from the *Commonwealth Fund/Harvard/Harris Interactive International Health Policy Surveys* for 2001 and 2002. Whilst based on small samples these surveys yield some important insights on the quality of doctor-patient relations in Australia, and how these compare to 4 other countries.

Findings: In 2001, 80 per cent of the general community rated their doctor as excellent or very good on treating the patient with dignity and respect (Blendon, Schoen, DesRoches 2002). Seventy three per cent rated their doctor as excellent or very good on listening carefully to their concerns, and 72 per cent on providing all the information the patient wanted. Sixty-nine percent rated their doctor as excellent or very good on spending enough time with them, 63 per cent on whether their doctor knew them and their family situation, whilst 59 per cent on whether their doctor was accessible by phone or in person.

Australians generally rated the quality of doctor-patient relations higher than people in Canada, the United Kingdom and the United States, but slightly lower than people in New Zealand.

In a survey of adults who were sicker than the rest of the community, gaps in doctor-patient communication were identified (Blendon, Schoen, DesRoches 2002). For example:

- Twenty three per cent of these adults believed their regular doctor did not make clear specific goals for treatment;
- Around 50 per cent reported their regular doctor did not ask them for ideas and opinions about treatment and care;
- Twenty one per cent had left a doctor's office without getting important questions answered; and
- Thirty one per cent reported there was a time in the last 2 years when they did not follow their doctors advice or treatment plan.

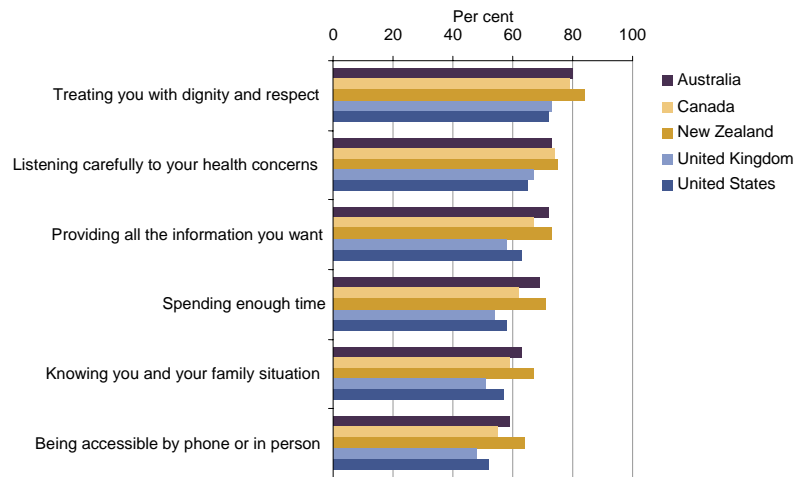
Implications: Whilst the quality of doctor-patient relations in Australia compare relatively favourably to some other countries, there are many opportunities for improvement, particularly for people with chronic conditions.

Chart 6-2

Perceptions of Quality of Doctor-Patient relations

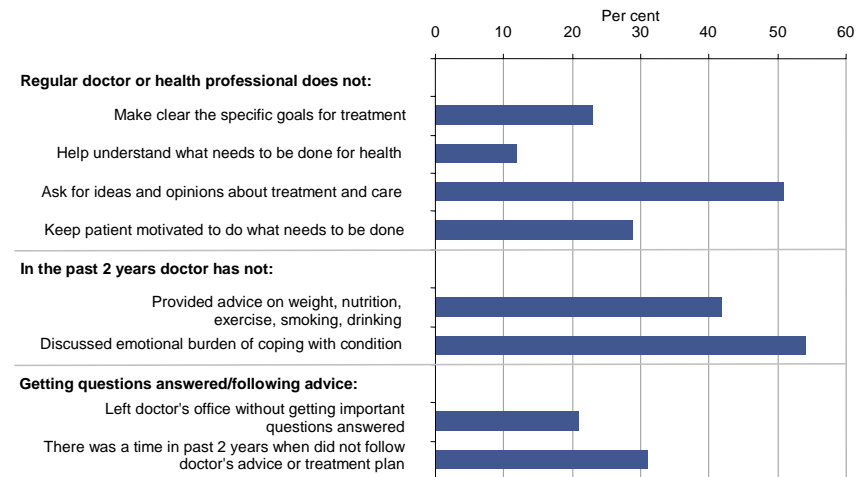
Whilst the quality of doctor-patient relations in Australia compare relatively favourably to some other countries, there are many areas in which relationships could be improved. For example over 50 per cent of sicker adults report their regular doctor did not ask them for ideas and opinions about treatment and care.

Rating of physician responsiveness as excellent or very good, five countries, 2001



Source: Commonwealth Fund/Harvard/Harris Interactive 2001 International Health Policy Survey as reported in Blendon, Schoen, DesRoches 2002

Patient-physician communication, survey of sicker adults Australia, 2002



Source: Commonwealth Fund/Harvard/Harris Interactive 2001 International Health Policy Survey as reported in Blendon, Schoen, DesRoches 2003

Chapter 7

Disparities in Health Care

... all individuals rightly expect to be treated fairly by social institutions, including health care institutions. The availability of care and quality of services should be based on individuals' particular needs and not on personal characteristics unrelated to the patients' condition or to the reason for seeking care. In particular, the quality of care should not differ because of such characteristics as gender, race, age, ethnicity, income, education, disability, sexual orientation, or location of residence.

- Institute of Medicine (IOM) 2002

Chapter 7

Disparities: Introduction

Despite universal health care programs, disparities in health between various groups in Australia have continued to persist. For example, mortality is 41 per cent higher for males and 26 per cent higher for females from the bottom socioeconomic quintile compared with the top socioeconomic quintile (AIHW: Mathers et al. 1999).

Disadvantaged Communities

When potentially avoidable mortality is examined, those living in the most disadvantaged areas have avoidable mortality rates 54% higher than those living in the least disadvantaged areas (NHPC unpublished). Data from NSW indicates that the absolute gap in avoidable mortality between the most and least disadvantaged communities has reduced in the last 20 years, but the relative mortality rate gap has widened (NSW Department of Health 2002).

Indigenous Australians

The starkest disparities in Australia are those between the Aboriginal and Torres Strait Islander peoples and other Australians. Indigenous peoples face life expectancies about 20 years lower than other Australians (ABS & AIHW 2003). Infant mortality is also twice as high. For diseases such as circulatory system disease the chance of dying is twice as high. For Indigenous men and women aged between 35 and 64, the rate of death from diabetes was 20 times higher and 33 times higher respectively than that for other Australians. For external causes such as accidents, suicide and assault, Indigenous men's risk of dying was 2–3 times higher than the corresponding total Australian male risk, and for Aboriginal and

Torres Strait Islander females it was more than 4 times higher (ABS & AIHW 2003).

Rural Australia

Disparities also exist between people living in rural Australia and those living in cities. Many of these disparities are due to the disadvantages faced by Indigenous peoples, but other factors such as economic disadvantage are at play as well.

Health Care Systems Contribution

Many factors contribute to health disparities, some of which lie beyond the health care system itself. Nevertheless, there is some evidence that the health care system, in the ways it deals with people from disadvantaged groups, also contributes to the perpetuation of these disparities.

Recently the US based Institute of Medicine commissioned a committee to study evidence concerning whether the quality of health care for various racial and ethnic minority groups was comparable, and to identify strategies to address disparities (IOM 2002). The Committee reviewed over 100 studies, many of which controlled for factors that might be common amongst people from racial and ethnic minorities, such as insurance status, income, the severity or stage of disease progression, the presence of co-morbid illnesses, where care is received (e.g., public or private hospitals and health systems), age, and gender. The vast majority of these studies, even the best controlled studies, consistently showed that minority groups are less likely to receive needed services, including clinically

necessary procedures. Disparities exist across a number of disease areas, including cancer, cardiovascular disease, HIV/AIDS, diabetes, and mental illness, and a range of procedures, including routine treatments for common health problems (IOM 2002).

Evidence from four areas

This chapter examines evidence related to four areas – cancer survival, revascularisation for coronary heart disease, access to services for renal disease, and health outcomes for people with mental illness. Disparities exist for each of these areas. Both coronary heart disease and renal disease are conditions from which Indigenous peoples suffer vastly disproportionately compared to the rest of the population. A recent study of the physical health outcomes for people who had been patients of the state’s mental health services found these people experience much higher mortality than the rest of the population, arising from suicide and other physical illnesses.

Disparities: Summary of Charts and Findings

Chart 7-1 Cancer Survival. Survival following a diagnosis of cancer is related to where people live. People living in more remote regions and the most disadvantaged have poorer survival rates. People living in capital cities, other metropolitan areas and large rural centres have significantly higher survival than the rest of Australia. For example survival rates for people living in remote centres are 10 per cent lower than for the rest of the country. Survival is also linked to a person's socio-economic circumstances. Men living in the most disadvantaged regions have relative survival rates that are 13 per cent lower than men living in the least disadvantaged regions. Women living in the most disadvantaged regions have relative survival rates that are 6 per cent lower than women living in the least disadvantaged regions.

Chart 7-2 Revascularisation for Coronary Heart Disease. People living outside the major cities have poorer access to revascularisation procedures despite higher use of hospitals in total. People living in very remote regions have utilisation rates that are almost 40 per cent lower than rates for people living in major cities. People living in these regions, often Indigenous peoples, have much higher rates of mortality from coronary heart disease. There is considerable variation in utilisation rates between different localities. Twenty five

per cent of Australians live in regions in which utilisation rates are 30 per cent below the Australian rate.

Chart 7-3 Access to Specialist Services for Renal Disease. People living in more disadvantaged regions in Australian capital cities are more likely to be referred to a nephrologist later in the development of the disease, compromising health outcomes. Despite much higher incidence rates, Indigenous peoples are likely to be referred to a nephrologist later in the development of the disease. Indigenous peoples are less likely to be able to receive a kidney transplant.

Chart 7-4 People with Mental Illness. Patients of mental health services were found to have mortality rates that were two and a half times those of the rest of the population. These higher rates apply to suicide and a wide range of other causes of death related to physical illnesses. Patients of mental health services do not gain equitable access to treatments for their physical illnesses.

Disparities

Cancer Survival

Why is this important? Survival after a diagnosis of cancer is an important measure in assessing the effectiveness of prevention and early detection methods such as screening and treatment. Higher survival rates will reflect both the impact of detecting cancers earlier and access to effective treatment. However, there is evidence that disadvantaged groups do not have an equivalent chance of surviving cancer.

Findings: In the period 1992-1997, 57 per cent of males and 63 per cent of females were alive 5 years after being diagnosed with cancer. This was an increase on the previous decade (1982-1986) when 44 per cent of males and 55 per cent of females survived 5 years. In the latest period for which international data are available (1987-1991) Australia had the second highest five-year survival rate for cancer when compared with European countries and the United States, with the United States showing the best survival rates (AIHW & AACR 2001).

Whilst the Australian health system performs well relative to other countries, not all groups in Australia have an equivalent likelihood of surviving for 5 years. People living in capital cities, other metropolitan areas and large rural centres have significantly higher survival than the rest of Australia (AIHW & AACR 2003).

For example, survival rates for people living in remote centres are 10 per cent lower than the rest of the country.

Survival is also linked to a person's socio-economic circumstances. Men living in the most disadvantaged regions have relative survival rates that are 13 per cent lower than men living in the least disadvantaged regions. Women living in the most disadvantaged

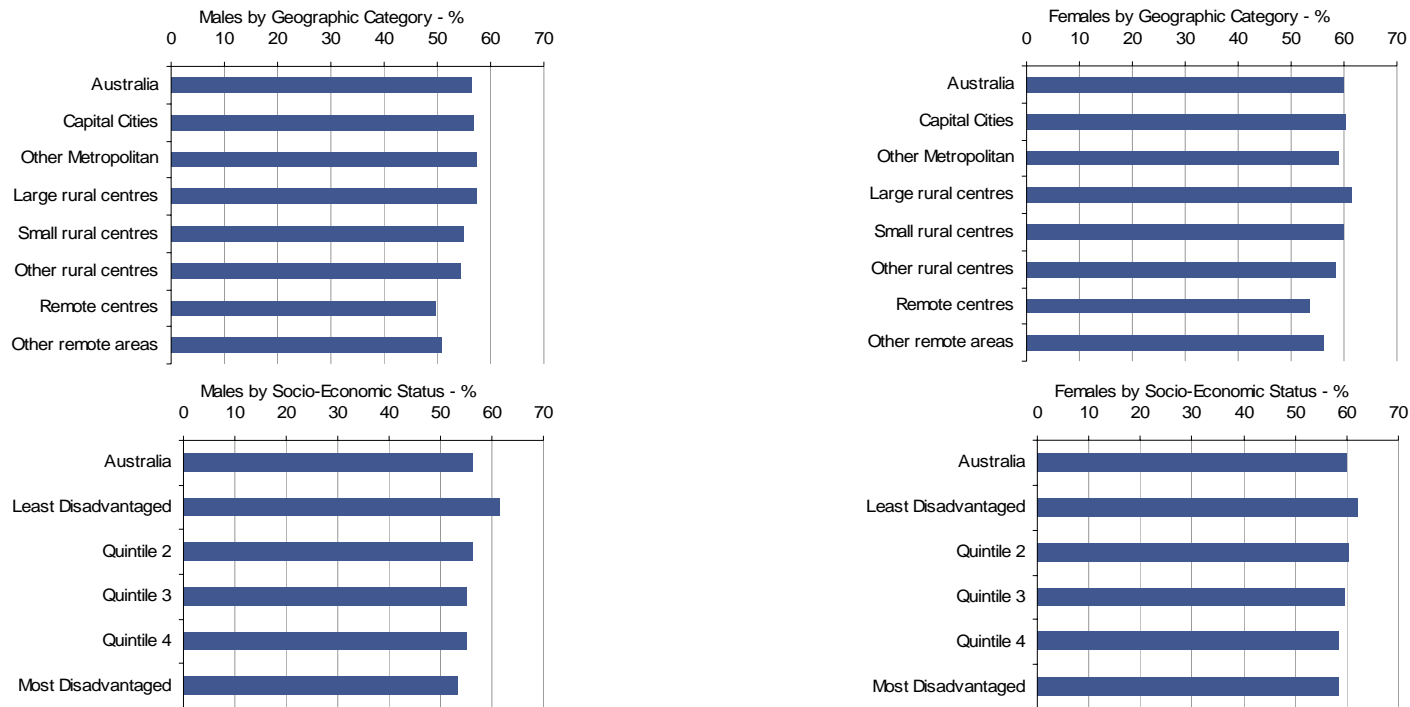
regions have relative survival rates that are 6 per cent lower than men living in the least disadvantaged regions (AIHW & AACR 2003).

Implications: Disparities in cancer survival may reflect poorer access to preventive and treatment services, such as radiotherapy, for people living in rural and remote regions. There may also be poorer access to services in the most disadvantaged regions. Addressing these issues requires attention to planning the distribution of services, developing appropriate options for people living at a distance from treatment services, and monitoring disparities in access.

Chart 7-1 Cancer Survival

Survival following a diagnosis of cancer is affected by where people live.
People living in more remote regions and the most disadvantaged have poorer survival rates.

Five year age adjusted relative survival - all cancers 1992-1997



Source: AIHW and AACR 2003

Disparities

Revascularisation for coronary heart disease

Why is this important? Coronary heart disease may be treated medically (with drugs) or through revascularisation either using a medical procedure (percutaneous coronary interventions), or a surgical procedure (coronary artery by-pass grafts).

Percutaneous coronary interventions involves treating blockages of the coronary arteries and/or blood clots by threading a catheter generally through a blood vessel in the groin or arm, up to a coronary artery. There a thin balloon may be inflated to unblock the artery (angioplasty). Thin wire meshes (stents) may also be inserted to hold the artery open. Stents are now used in the majority of PCIs.

Percutaneous coronary interventions are most commonly used for patients with stable and unstable angina. In some tertiary centres percutaneous coronary interventions are used to treat suitable patients who are currently experiencing an acute myocardial infarction (primary angioplasty). The use of percutaneous coronary interventions expanded rapidly over the 1990s, increasing at between 13 and 23 per cent in the mid 1990s. Growth in more recent years has slowed, but is still significant.

Coronary artery by-pass grafts involve opening the patient's chest and using veins, taken from the patient legs or elsewhere in the body, to by-pass the diseased coronary arteries. In contrast to percutaneous coronary interventions, the number of coronary artery by-pass grafts performed in Australian hospitals grew at a slower rate in the 1990s and has fallen in more recent years.

Coronary artery by-pass graft surgery has been shown to improve quality of life for people with coronary heart disease and to reduce the risk of death (Yusuf, Zucker, Peduzzi et al 1994) and outcomes for earlier forms of percutaneous coronary interventions have been

shown to be at least equivalent to coronary artery by-pass graft surgery in terms of risk of death, risk of myocardial infarction and quality of life (Pocock, Henderson, Rickards et al 1995). Randomised trials of later forms of percutaneous coronary interventions, particularly involving stents have show superior outcomes, especially in reducing the need for further procedures or coronary artery by-pass graft surgery.

Findings: People living outside the major cities have poorer access to revascularisation procedures. People living in very remote regions have utilisation rates that are almost 40 per cent lower than rates for people living in major cities. People living in these regions, often Indigenous peoples, have much higher rates of mortality from coronary heart disease (ABS & AIHW 2003).

There is also considerable variation in utilisation rates between different localities. Twenty five per cent of Australians live in regions in which utilisation rates are 30 per cent below the Australian rate. The lower use rates for these population groups is unlikely to reflect variation in the prevalence of coronary heart disease

Implications: Opportunities to access revascularisation procedures are not equitably spread across the population. Reducing these disparities will require attention to the distribution of services to better reflect needs and the development of new options for people living in rural and remote regions.

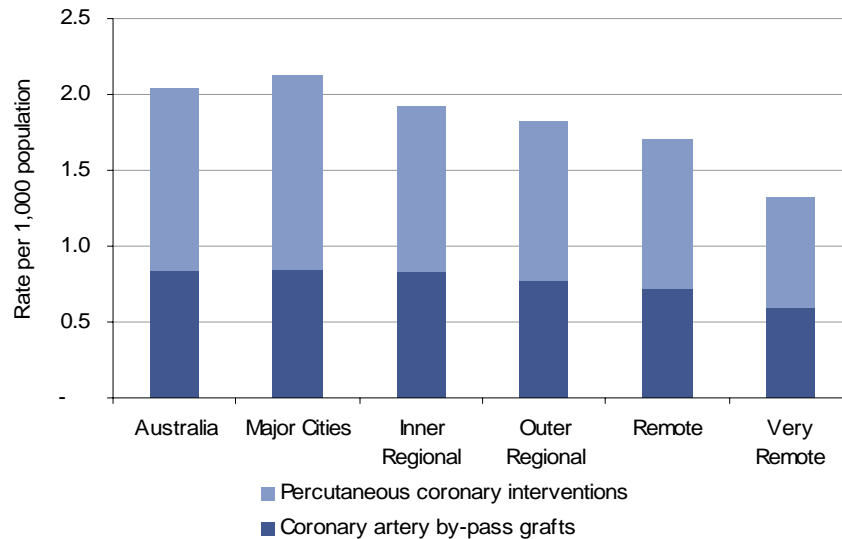
Chart 7-2

Revascularisation for Coronary Heart Disease

People living outside the major cities have poorer access to revascularisation procedures.

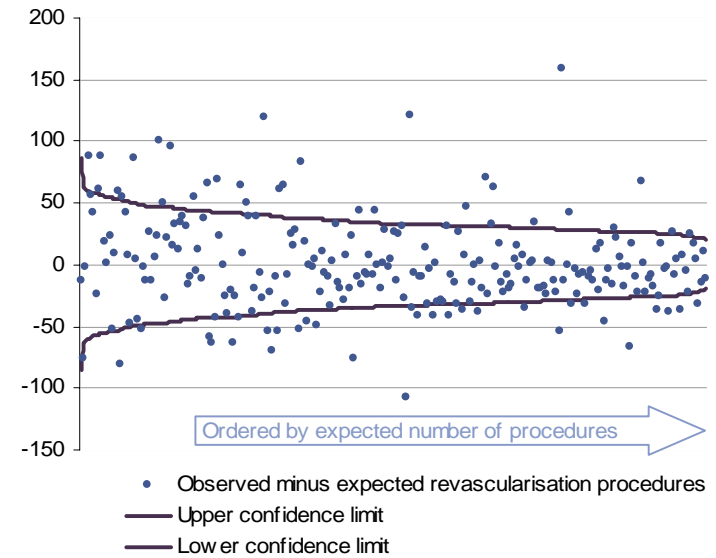
People living in very remote regions have utilisation rates that are almost 40 per cent lower than rates for people living in major cities.

Age standardised hospital (public and private) separation rates for revascularisation procedures, by remote area of usual residence, 2001-02



Source: AIHW 2003a

Observed – expected hospital separations for revascularisation procedures, Australian localities, 2001-02



Source: AIHW (Unpublished) Analysis of National Hospital Morbidity Data. A positive value indicates there are more procedures than expected. A negative value indicates there are fewer procedures than expected.

Disparities

Access to Services for Renal Disease

Why is this important? Renal failure occurs where a person's kidneys are unable to adequately perform their function of removing waste products from the blood. The condition is very serious and, without treatment, results in death. Chronic or end stage renal failure refers to an irreversible deterioration in the kidneys' ability to function. Patients with end stage renal disease (ESRD) require either a kidney transplant or treatment (maintenance dialysis), usually 3 times a week, to clear waste products from the blood.

At December 2002 there were an estimated 5 740 people living in Australia who had had a kidney transplant and a further 7 205 people who required maintenance dialysis (McDonald and Russ 2003). After adjusting for age, the incidence of ESRD in Indigenous Australians was almost nine times the rate for the rest of the population in 1997 (Cass, McDonald and Wang 1999). Indigenous Australians comprise over 8 per cent of new patients commencing treatment for ESRD (Russ 2002). Incidence is even higher for Indigenous people living in remote regions (Cass, Cunningham, Wang et al 2002).

Progression to ESRD can be slowed and life expectancy following the onset of ESRD improved through early referral of at-risk patients to a specialist in renal medicine (a nephrologist). Early referral can also impact on whether a patient is suitable for, or able to obtain, a kidney transplant (Cass, Cunningham, Arnold et al 2002).

Findings: Cass et al 2003 examined the relationship between socio-economic status and late referral to a nephrologist. People living in more disadvantaged regions in Australian capital cities were more likely to be referred to a nephrologist later in the development of the disease, compromising health outcomes.

Indigenous peoples are also more likely to be referred to a nephrologist later in the development of the disease. Forty per cent of Indigenous patients are referred late compared to 26 per cent of other patients (Cass et al 2002). Indigenous patients have a much lower rate of kidney transplantation – around a third of the rate of other patients (Cass et al 2002). They are less likely to be accepted onto a transplant waiting list, and also to move from a transplant list to transplantation (Cass et al 2002).

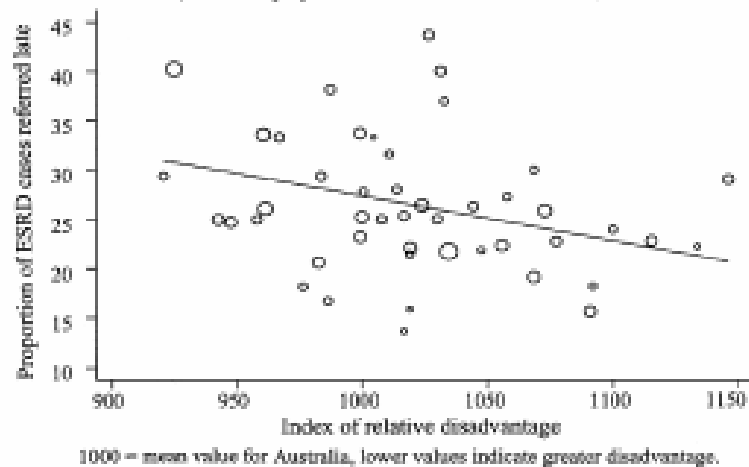
Implications: Addressing Indigenous disadvantage related to renal disease will require many strategies across health and social policy portfolios (Cass et al 2004). Health system strategies are important, including improved secondary prevention in patients with early signs of renal disease. In one remote community, a community based program targeted at cardiovascular and renal disease was effective in reducing premature death and progression to ESRD (Hoy, Baker, Kelly et al 2000). Improving access to specialist care and the quality of pre-ESRD care will also assist improving outcomes for indigenous patients with ESRD.

Chart 7-3

Access to Services for Renal Disease

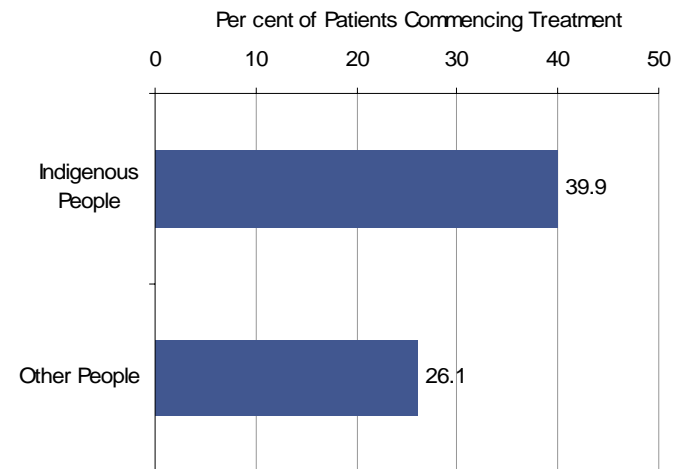
People living in more disadvantaged regions in Australian capital cities are more likely to be referred to a nephrologist later in the development of the disease, compromising health outcomes. Indigenous peoples are also likely to be referred to a nephrologist later in the development of the disease.

**Late referral of end stage renal disease cases in relation to social disadvantage within Australian capital cities
(Circle size proportional to number of cases)**



Source: Cass et al 2003; Note: permission to be obtained

Delayed referral for nephrology care, patients commencing treatment for end stage renal disease, Australia, 1993 to 1998



Source: Cass et al 2002; Delayed Referral defined as patients who are referred but need to commence renal replacement treatment with three months.

Disparities

People with mental illness

Why is this important? By itself, mental illness is a major cause of suffering. For example, the Australian Burden of Disease Study found that depression was the most significant cause of non-fatal burden of disease in the Australian community (Mathers et al 2000). In addition to the effect mental illness can have on quality of life and premature deaths, there is evidence that people with mental illness also experienced poorer physical health. For example Harris and Barraclough (1998) brought together the results of 152 separate studies across the world. They found that people with mental disorders have an increased risk of premature death from natural and unnatural causes. A study conducted in Western Australia was able to examine the patterns of mortality and hospital use for people who had been clients of public mental health services in that state between 1966 and 1998, and compared these to the rest of the population (Lawrence, Holman, Jablensky 2001). On average, these people represented 8 per cent of the Western Australia population at any one time, although they may not necessarily be active clients of mental health services. Patients of mental health services include patients with varying degrees of illness severity, and will generally include the patients with most severe forms of illness.

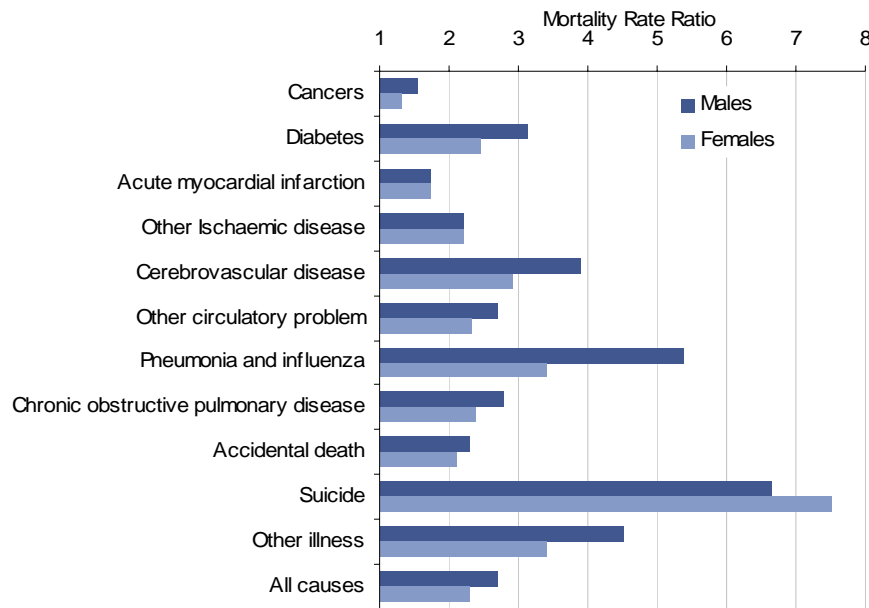
Findings: Mental health service patients were found to have mortality rates that were two and a half times the rates of the rest of the population. Higher mortality was observed across a wide range of causes of death. Significantly higher rates of suicide were found in these patients. These patients accounted for almost a half of all suicides in WA. However higher rates of death were observed for a range of physical causes including heart disease and stroke. Heart disease accounted for more deaths than would be expected and a greater number of excess deaths than suicide. Despite higher rates of death from heart disease, these patients had lower rates of use of revascularisation procedures, particularly for people with psychoses. The study suggests that these people do not gain equitable access to treatments for their physical illnesses.

Implications: People with mental illness are a marginalised and vulnerable group, who experience disadvantage as a result of their mental illness and other physical conditions. Strategies are required to ensure services are available to address both their mental and physical health needs.

Chart 7-4 People with mental illness

Patients of mental health services were found to have mortality rates that were two and a half times the rest of the population. These higher rates apply across a wide range of causes of death. Patients of mental health services do not gain equitable access to treatments for their physical illnesses.

Relative risk of dying by cause of death mental health patients in WA, 1980-1998



Source: Lawrence, Holman, Jablensky 2001. A relative risk higher than 1.0 implies that mental health patients have higher mortality rates for the particular condition. For example a relative risk of 2.0 implies mortality rates that are twice the rest of the WA population.

Rate ratios for use of revascularisation procedures mental health patients, WA 1980-1998



Source: Lawrence, Holman, Jablensky 2001. The rate ratios represent the rate of first hospitalisation for the procedure for mental health patients as a ratio of the first hospitalisation rate for the procedure for the rest of the WA population. A rate ratio of 1 implies use is the same as the rest of the population. A rate ratio below 1.0 means there is a lower rate of use.

Chapter 8

Capacity to Improve

So I am called eccentric for saying in public: that Hospitals, if they wish to be sure of improvement,

- *Must find out what their results are.*
- *Must analyse their results, to find their strong and weak points.*
- *Must compare their results with those of other hospitals ...*
- *Must welcome publicity not only of their successes, but for their errors*

Such opinions will not be eccentric a few years hence

- Ernest Amory Codman, 1917

Chapter 8

Capacity to Improve

Over many years, processes have developed across Australia to address particular quality issues, including professional registration and professional review bodies, accreditation of hospitals and other organisations, government regulation of health care organisations and independent health care complaints bodies. Many of these traditional approaches to quality issues will need to continue, although reform may be appropriate. However, new, more comprehensive, approaches to improving quality are required to identify problems and implement change. Developing and implementing these strategies represent the core challenge for the Australian Council for Safety and Quality in Health Care (the Council).

The Council has taken a “safety first” approach to its role, focusing initially on the strategies required to create a safer system of health care in Australia. Safety is being pursued through five strategic directions:

1. **Supporting those who work in the health system to deliver safer patient care:** The Council is working to promote safe environments for care through review and development of standards and practical tools that support the safe management of health care services. For example the Council has established a national standard for credentialing and clinical privileging, identified improvements to standards setting and accreditation systems, identified priority action to improve safe staffing, and developed guidelines for administering qualified privilege schemes for improving care.
2. **Improving data and information for safer health care:** The Council recognises better use of data and information is required at all levels of the health care system to achieve a common understanding of the size and scope of safety problems. Data collection and analysis needs to be improved with the primary aim of learning about system vulnerabilities and informing improvement. For example, the Council has identified a national core set of Sentinel Events to be reported, developed national specification for incident reporting and management systems, sponsored national workshops for trainers on root cause analysis, developed a vocabulary of key safety and quality terms, and promoted analysis of mortality and morbidity data for safety improvement.
3. **Involving consumers in improving health care safety:** The Council’s vision for a safer health care system places consumers at the centre of the system, with the experiences of patients and carers harnessed to drive improvements. The Council has developed *10 Tips for Safer Health Care*, a patient focused guide to how consumers of health care services and their families can participate in creating safer processes of care and treatment. The Council has also undertaken an open disclosure project to promote better communication between service providers and consumers and their families, identified a national approach to consumer reporting of adverse events, and promoted the improved use of health care complaints information.
4. **Redesigning systems of health care to facilitate a culture of safety:** The Council recognises that it is time for the health

system to redesign, simplify and, where possible, standardise care, at the same time tackling cultural barriers to change and a safer system. To promote system redesign the Council has developed a national strategy to address health care associated infections, promoted a national medication breakthrough collaborative, established a medication safety innovations awards program, established the Safety Innovations in Practice Program (SIIP), developed a national framework for education on patient safety, and developed a strategic research agenda for evidence-based safety improvement.

5. **Building awareness and understanding of health care safety:** The Council is generating awareness of safety issues, engaging the community in significant patient safety issues and seeking to gain the commitment, support and involvement of all stakeholders.

Initiatives for improved quality

Over the last decade, a better understanding has developed of the requirements for effective and systematic improvements in quality (for example, Institute for Healthcare Improvement 2003). These methods are being applied in Australia to a range of issues. For example the National Institute of Clinical Studies (NICS) has sponsored a collaborative on emergency departments which brought together 47 hospitals that aimed to develop and implement programs that would decrease patient's wait for treatment (See text box - The NICS Emergency Department Collaborative: Reducing Time to Thrombolysis).

Ten Tips for Safer Health Care

1. **Be actively involved in your own health care:** Taking part in decisions that are made about your treatment is the single most important way to help prevent things from going wrong and to get the best possible care for your needs.
2. **Speak up if you have any questions or concerns:** Choose a health care professional with whom you feel comfortable talking about your health and treatment. You have a right to ask questions and to expect answers that you can understand.
3. **Learn more about your condition or treatments by asking your doctor or nurse and by using other reliable sources of information.**
4. **Keep a list of all the medicines you are taking:** You can use the list to let your doctor and pharmacist know about everything you are taking, and about any drug allergies you may have. Remember to include prescriptions, over-the-counter and complementary medicines.
5. **Make sure you understand the medicines you are taking:** When you get your medicine, read the label, including the warnings. Make sure it is what your doctor ordered for you.
6. **Make sure you get the results of any test or procedure:** If you don't get the results when expected, don't assume 'no news is good news'. Call your doctor to find out your results, and ask what they mean.

For people who are in hospital or who are thinking about going to hospital

7. **Talk to your doctor or other health care professional about your options if you need to go into hospital:** Become involved in decisions about your hospital treatment by discussing your options with your health care professionals.
8. **Make sure you understand what will happen if you need surgery or a procedure:** Ask your doctor or surgeon exactly what the procedure will involve and who will be in charge of your care when you're in hospital. Tell the surgeon, anaesthetist and nurses, if you have allergies or have ever had a bad reaction to an anaesthetic or any other drug.
9. **Make sure you, your doctor and your surgeon all agree on exactly what will be done during the operation.**
10. **Before you leave hospital, ask your doctor or other health care professionals to explain the treatment plan you will use at home.**

Source: ACSQHC 2003b

The Australian Council for Safety and Quality in Health Care is sponsoring a National Medication Safety Breakthrough Collaborative, which aims to reduce patient harm associated with medication use by 50 per cent in participating facilities. The collaborative is bringing together organisations with a common commitment to redesigning their medication systems and make major rapid changes to produce positive results in their organisations.

The Australian Government and all States and Territories have sponsored a broad range of projects designed to tackle improvements in quality and safety. One example is the Clinical Systems Support Program, a joint initiative of the Australian Department of Health and Ageing and the Royal Australasian College of Physicians. The model includes the management of clinical practice using clinical and consumer pathways that identify critical points or therapeutic flags, outcome and performance indicators that identify variance and the measurement of clinical outcomes and processes, and review in a continuous improvement cycle, using the best available evidence.

Trials at different project sites were successful in improving clinical outcomes for patients with major clinical problems including congestive heart failure and acute coronary syndrome (See text box - Improving quality of care for people with acute coronary syndromes and congestive heart failure), acute stroke management and colorectal cancer care.

The National Health Priority Action Council is leading health service improvements for arthritis, asthma, cancer, cardiovascular disease, diabetes and stroke designed to achieve better outcomes for all Australians, including disadvantaged groups.

Through collaboration and partnerships nationally, a key initiative includes the development of the National Chronic Disease Strategy, as part of Health Ministers health reform agenda. It will promote an

evidenced-based team approach to primary health care service delivery for people with chronic and complex care needs leading to a more integrated approach to health management. The National Service Improvement Frameworks constitute a major element of the National Chronic Disease Strategy. Due to be finalised in 2004, the National Service Improvement Frameworks for each condition will be high level guides for jurisdictions and clinical practitioners. The frameworks can be used for planning, designing and providing the most effective patient centred care, including for disadvantaged groups. Performance measures are to be developed to assess improvements in critical areas of the frameworks.

Measurement for Improvement

The Australian Council for Safety and Quality in Health Care has focused on a number initiatives relating to measurement and how data and information can be used to drive safety and quality improvement. The Measurement for Improvement Group was formed in May 2003 as a working group of the Council and is the main mechanism for facilitating the Council's work around data and information. The Group's work includes:

- Defining what needs to be measured to tell us about the problems in and the progress towards better safety and quality;
- Determining what systems are currently collected and available;
- Determining what the data tell us and the usefulness of the data in measuring problems and improvements;
- Understanding what the gaps in data collection are;
- Identifying the systems needed nationally and at the State or Territory level for the collection, analysis and feedback of data and information; and
- Identifying how these elements apply at the local, regional and national levels.

The NICS Emergency Department Collaborative Reducing Time to Thrombolysis

There is overwhelming evidence that patient morbidity and mortality following myocardial infarction can be reduced through early thrombolytic treatment. Boersma et al (1996) examined the relationship between treatment delay and mortality and showed that the relationship is non-linear. While patients receive benefit up to 12 hours after symptom onset, the reduction in mortality is less as time increases. The beneficial effect is substantially higher for those receiving treatment within 90 minutes of the onset of symptoms (Western et al 1999). A recent study of 20 hospitals in Victoria, however, found that 39% of patients were not receiving treatment within this time period (Kelly 2003). Emergency departments (EDs) can play an important role in improving patient outcomes in this area by reducing time to thrombolysis, and this provided the context for the inclusion of this indicator in the collaborative.

The National Institute of Clinical Studies commissioned a literature review, *'Reducing Time to Thrombolysis in the Hospital Emergency Department'* (NICS 2003), to identify evidence-based interventions and their effectiveness for early thrombolysis in the emergency department setting. The following interventions were shown to reduce the time to thrombolysis:

- specialist thrombolysis nurses in Emergency Departments;
- a rapid ECG rule for patients admitted with chest pain; and
- establishing chest pain centres within Emergency Departments.

In South Australia, the Department of Human Services funded the public hospitals that participated in the NICS ED Collaborative. This group then joined with two private emergency departments to form a local network within the collaborative.

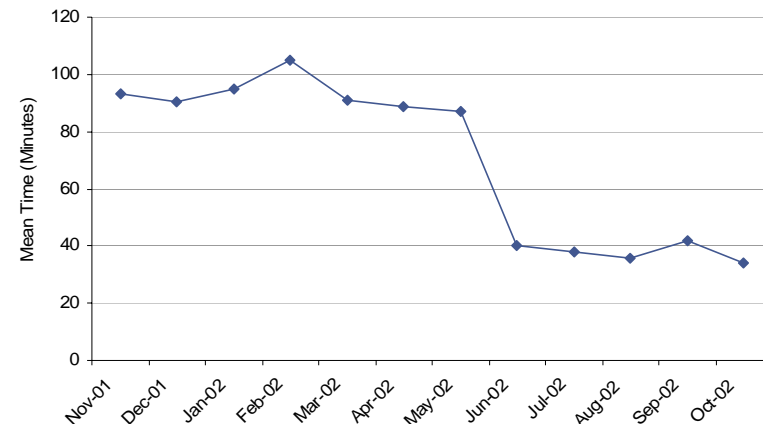
Reducing the time to thrombolysis was identified as a major area for improvement by 3 of the larger emergency departments participating in the collaborative. Their aim was to reduce the time to thrombolysis to 30 minutes for patients presenting with myocardial infarction in the absence of other interventional procedures. The collaborative measures the time from assessment to commencement of thrombolysis – 'door to needle time'. The

Australian national benchmark for time to thrombolysis is 30 minutes. Prior to the NICS ED Collaborative the average time to thrombolysis in South Australia was 60 minutes and the national average was 39 minutes. After the NICS collaborative, the average time to thrombolysis in SA was 44 minutes, with 40% of patients receiving thrombolysis within 40 minutes.

The three participating EDs achieved:

- a mean time to thrombolysis of 28 minutes, compared to 58 minutes when thrombolysis was performed outside of ED; and
- 75 per cent of patients received thrombolysis within 30 minutes, compared to 16 per cent per cent when thrombolysis was performed outside of ED.

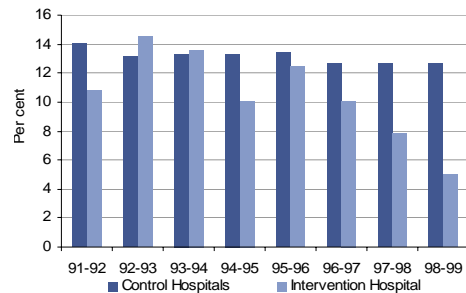
Figure 4 - Overall reduction in time to thrombolysis in the three participating South Australian emergency departments, during the NICS ED collaborative



Improving Quality of Care for People with Acute Coronary Syndromes and Congestive Heart Failure

Effective treatment of patients admitted to hospital with acute myocardial infarction (AMI) and unstable angina requires a range of interventions for which there is now strong evidence (Aroney et al 2000; Braunwald et al 2000; British Cardiac Society 2001). Not all patients admitted for these conditions receive care consistent with the evidence (see Chart 2-8). To address these issues a quality improvement intervention was implemented in a single community hospital in Queensland, between 1995-96 and 1998-99 (Scott, Coory, Harper 2001). The intervention included guideline

Crude In Hospital Mortality Rates in Intervention and Control Hospitals, 1991-92 to 1998-99 (Scott, Coory, Harper 2001)



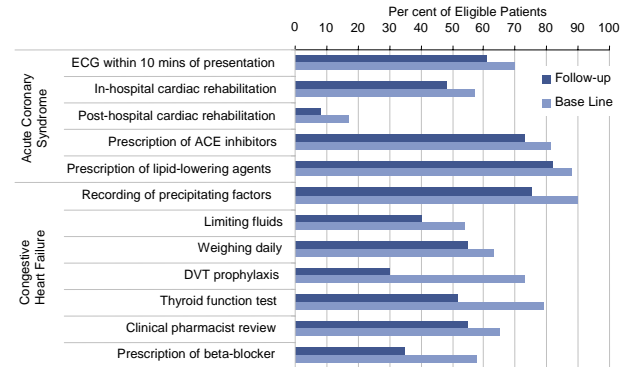
development, based on local adaptation of an international guideline, guideline dissemination, the development of an acute myocardial infarction registry, development of a range of process indicators, with clinical indicator feedback and revision. The hospital at which the quality improvement

project was implemented was able to reduce in-hospital mortality to a rate that was 30 per cent lower than that experienced for control hospitals (an odds ratio of 0.59), a statistically significant effect (Scott, Coory, Harper 2001). The intervention outcomes were sustained and increased into the fourth year following the implementation of the intervention. If these improvements were applied across Queensland an additional 125 lives could be saved annually (Scott, Coory, Harper 2001).

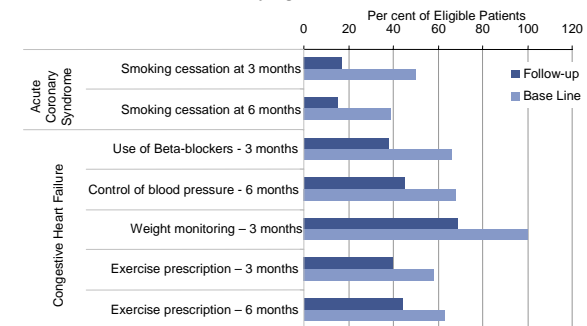
This model was extended through the Brisbane Cardiac Consortium, a project sponsored under the Clinical Systems Support Program, a joint initiative of the Australian Department of Health and Ageing and the Royal Australasian College of Physicians. This Consortium focused on both in-hospital treatment and treatment by general practitioners. The following

charts show the statistically significant improvements achieved.

Brisbane Cardiac Consortium Improvements in Evidence-based Care – Hospital Indicators with a statistically significant difference



Brisbane Cardiac Consortium Improvements in Evidence-based Care – General Practice Indicators with a statistically significant difference



These improvements led to reductions in mortality. Risk-adjusted mortality rates for patients with acute coronary syndrome trended downward from 4.9 per cent to 3.7 per cent at 30 days, and from 9.6 per cent to 7.2 per cent at 6 months. For congestive heart failure patients risk adjusted mortality fell from 9.0 per cent to 4.6 per cent at 30 days, and 24.5 per cent to 13.1 per cent at six months.

To inform the work of the Measurement for Improvement Group, two national consultation processes have been undertaken and ongoing consultation will continue to ensure that the data and information priorities identified remain relevant to key stakeholders in all areas of the health care system. These are:

The Measuring Quality for Improvement Workshop, held in September 2003. Representatives from the Australian States and Territories, the private sector and general practice attended the workshop and the scene was set for agreement by all participants about a national approach to developing performance indicators and using them to improve the quality of health care on all levels. The lack of nationally consistent data collections and methods to collect data, the use of information technology and extending data collections beyond the acute care sector into general practice, allied health, community health and other sectors were some of the issues discussed at the workshop.

A national consultation is also underway on National Measurement for Improvement Data Management System. This consultation is identifying what national data collections currently exist, the uses of such data, need for new data collections, the difficulties with coordinating large data collections and the barriers to developing new collections.

Other more specific projects sponsored by the Council, through the Measurement for Improvement Group include:

- This publication, **Charting the Safety and Quality of Health Care in Australia**. This publication should allow the Council to set the scene for agreement on the process for the development of a definitive Australian methodology that could be used nationally and internationally for the quantitative understanding of health care safety and quality.

- **The National Incident Management Strategy.** Incident reporting is a valuable tool for the collection of information about the nature and causes of adverse events in health care. The Council has been working with the States and Territories to identify the key components of the most effective incident management system for Australian health care. The Council has developed a national specification for incident reporting and management systems to support the reporting and management of incidents at the local level and to identify better ways to manage hazards and risks to improve systems of care. The Council is also promoting the use of Root Cause Analysis as a tool to conduct investigations into adverse events.
- **Assessment of the Safety and Quality of Health Care in Australia.** Council has identified that assessing whether health care is being provided safely is complex and difficult. There is no single source of statistics that provides a reliable measure of the frequency or nature of adverse events. These gaps mean there is limited capacity to monitor trends in the occurrence of adverse events at the facility, state or national level. A project has recently commenced that will involve identifying, assessing and reporting on the status of the safety and quality of health care services in Australia. This will include the assessment of the size and nature of safety and quality problems in Australia, the capacities needed to deliver safer quality care, and the actions being taken to improve safety and quality.
- **The Measurement for Improvement Toolkit.** This project is being undertaken by the Measurement for Improvement Group to identify local and national measures that enable assessment of quality. A number of ways of measuring adverse events currently exist but there is no one that thoroughly and effectively measures an adverse event rate. There is national inconsistency with regards to measuring the safety and quality of health services. This project has been commissioned to identify tools

and methods that already exist to measure safety and quality, and develop a comprehensive suite of measures to identify adverse events at a facility level. Once measures are identified and developed, Council will produce a Measurement for Improvement Toolkit to help all health care services in Australia measure the safety and quality of their services, and the capacity of their organisation to deliver safer and better quality care.

Conclusions

Addressing quality and safety in complex organisations such as hospitals, and across complex systems such as the health system in Australia is extremely challenging. However, it is clear Australians and health care providers in Australia are concerned about these issues. Hopefully this publication provides an impression of the quality and safety of health care in this country, and highlights the potential for feasible strategies to improve health care for all Australians.

Technical Appendix

This appendix provides more detailed information on data sources and methods.

Chart 1-1 Health Expenditure as a Percentage of Gross Domestic Product – Selected Nations 1990-91 to 2000-01. This is based on data presented in AIHW 2003 Health Expenditure Australia 2001-02. The original data were sourced from the OECD Health Data 2003.

Chart 1-2 Recurrent Health Expenditure by Broad Category of Expenditure. AIHW 2003 Health Expenditure Australia 2001-02.

Table 1-1 Hospital Use by Admitted Patients 1997-98 to 2001-02. AIHW 2003 Australian Hospital Statistics Table 2.3 (revised by the AIHW).

Chart 1-3 General Practitioner and Specialist Consultations Subsidies Under the Medical Benefits Schedule 1993-94 to 2002-03. Australian Government Department of Health and Ageing Medicare Statistics December 2003.

Chart 2-1 Smoking Cessation. Data on intention to quit are based on a Computer Assisted Telephone Interview of a representative sample of the NSW population, conducted in 1997 and 1998. Current smokers were asked the question: 'Which of the following best describes how you feel about your smoking?' Options ranged from not planning on quitting in the next six months, through to planning on quitting in the next month. Estimates based on 4 272 respondents who currently smoke regularly or occasionally. The results of these questions are presented in Public Health Division, NSW Health Department 2002 *Chief Health Officers Report* available online at <http://www.health.nsw.gov.au/public-health/chorep>

Chart 2-2 Childhood Immunisation. Data to December 2003 were based on data provided by the Health Insurance Commission to the Australian Government Department of Health and Ageing, based on the Australian Childhood Immunisation Register (ACIR). This source provides accurate information on the immunisation status for all children within certain cohorts in Australia.

Chart 2-3 Immunisation for Older Adults. Based on AIHW 2004. 2003 Influenza vaccine survey: summary results, which reports on a computer aided telephone interview survey of around 8 000 people across Australia aged 40 years and older.

Chart 2-4 Breast Cancer Screening and Outcomes. Participation rates are based on AIHW 2003 *Breastscreen Australia Monitoring Report 2000-2001*. These are calculated based on returns from State and Territory based breast screen registers. Mortality from Breast Cancer is derived from unpublished analysis conducted by AIHW for the National Health Performance Committee. Death rates per 100 000 women were age standardised to the June 2001 Australian population.

Chart 2-5 Cervical Cancer Screening and Outcomes. Participation rates are based on AIHW 2003 *Cervical Cancer Screening in Australia 2000-2001 and 1999-00* p19. Early re-screening is based on the same publication p 21.

Chart 2-6 HIV/AIDS Prevention. The chart is sourced from the National Centre for HIV Epidemiology and Clinical Research (2003). The analysis is based on the national HIV register and National AIDS register. Newly diagnosed HIV infection, as well as

AIDS, are notifiable conditions in all States and Territories in Australia. Cases of diagnosed HIV infection are notified through State and Territory health authorities to the national HIV surveillance centre on the first occasion of diagnosis in Australia.

Chart 2-7 Treatment of High Blood Pressure. Prevalence estimates were published in AIHW: Mathur 2002: 22. These were based on AIHW analysis of the 1980, 1983, 1989 *Risk Factor Prevalence Studies*, 1995 *National Nutrition Survey*, 1999–2000 *Australian Diabetes, Obesity and Lifestyle Study*. Prevalence estimates have been age-standardised to the June 2001 Australian population. The estimates include only people living in capital cities or urban areas, aged 25–64. High blood pressure is defined as ≥ 140 mmHg systolic pressure and/or ≥ 90 mmHg diastolic pressure as measured in the surveys, and/or receiving medication for high blood pressure. Estimates of untreated hypertension are based on the 1999–2000 *Australian Diabetes, Obesity and Lifestyle Study* as published in Briganti et al 2003. The Australian Diabetes, Obesity, and Life Style Study (AusDiab) was a population-based study of 11 247 people from randomly selected areas of Australia.

Chart 2-8 Managing Acute Coronary Heart Disease. The estimates of treatment rates for the 3 Queensland hospitals were published in Scott et al 2002. Data presented in the second chart are based on data submitted by hospitals to the Australian Council on Healthcare Standards (ACHS), as part of the *ACHS Clinical Indicators* (ACHS 2003). There are 2 indicators related to thrombolysis. The first relates to emergency departments and is defined as follows: *Numerator*: The number of patients with an acute myocardial infarction (AMI) requiring thrombolysis who receives thrombolytic therapy within 1 hour of presenting to the emergency department within the time period under study. *Denominator*: The total number of patients with an AMI requiring thrombolysis after presentation to the emergency

department within the time period under study. One hundred and twenty-six hospitals reported this indicator in 2002.

The second indicator relates to internal medicine. It is defined as follows: *Numerator*: The number of patients with AMI requiring thrombolysis who receive thrombolytic therapy within 1 hour of presenting to the hospital. *Denominator*: The total number of patients with an AMI who receive thrombolytic therapy during the time period under study.

Chart 2-9 Stroke Prevention for Atrial Fibrillation. Data presented in the chart are from 2 studies: Evans et al 2002, a study based on one tertiary hospital; and Duffy et al 2002, a study based on eight metropolitan hospitals.

Chart 2-10 Diabetes Management. Frequency of eye and foot examinations were estimated from *The Australian Diabetes, Obesity, and Life Style Study* (AusDiab) - a population-based study of 11 247 people from randomly selected areas. Data on quality of care for people with diabetes who are on a general practitioner diabetes register are based on a study involving general practitioners in 16 Divisions of General Practice over 3 years from 2000 to 2002. The study was limited to Divisions with an active diabetes program using CARDDIAB as the Division register. The active program had to extend over the 3 years (Centre for GP Integration Studies 2003).

Chart 2-11 Asthma Management. Frequency of preventer use in people with asthma was based on an analysis (presented in Marks et al 2000) of a population based Computer Assisted Telephone Interview health survey of the NSW population conducted by the Public Health Division of NSW Health. Estimates of people with asthma who possess a written asthma plan were derived from 3 different sources, as presented in Australian Centre for Asthma Monitoring (2003 p72).

Chart 2-12 Treatment of Depression. Charts presented were based on data from the SPHERE study, a cross sectional audit of general practice throughout Australia conducted in 1998-99 involving 386 general practitioners and 46 515 ambulatory care patients (Hickie, Davenport, Scott et al 2001).

Chart 3-1 Antibiotic Prescribing for Upper Respiratory Tract Infection. The chart is based on data presented for the *BEACH* (*Bettering the Evaluation And Care of Health*) survey which has been conducted each year (April to March) since 1998-99 (Britt et al 2003). The survey is based on a Random sample of 1 000 general practitioners annually across Australia - from Health Insurance Commission Medicare records. Each participating practitioner collects data on 100 consecutive consultations. All consultations are recorded - including indirect consultations (such as telephone consultations) which result in a management action for example prescriptions and referrals.

Chart 3-2 Hysterectomy Rates. Data for hospital separation rates by socio-economic status were based on an analysis of the National Hospital Morbidity Data undertaken by the AIHW using the 2001-02 year. Socio-economic status of the region of residence is assessed using one of the ABS Socio-Economic Indexes for Areas 2001. Areas are grouped into quintiles to reflect the most disadvantaged areas and the least disadvantaged areas. The second chart is based on analysing rates for 262 localities across Australia, undertaken by the AIHW for this report. For the purpose of this analysis, localities with very small populations were grouped. The presentation is in the form of a funnel plot, to illustrate the extent of variation between regions in the use of this procedure. Hysterectomies are identified using the following ICD-10-AM codes: hysterectomy blocks [1268], [1269], codes 90450-00 and 90450-01. It is important to note that this analysis includes the hysterectomies that other analyses have excluded. For example, the US Agency for Healthcare Research and Quality in its prevention indicators excludes: (1) women undergoing

hysterectomy for malignancy of the cervix, uterus, ovary and/or fallopian tube; and (2) women where the principal diagnosis is (a) lower abdominal trauma or (b) pregnancy, childbirth or puerperium.

Chart 3-3 Caesarean Section Rates. These data were previously published in AIHW, NPSU (2003) *Australia's Mothers and Babies 2000*. These analyses are based on the perinatal data collections undertaken in each State and Territory and collated by the National Perinatal Statistics Unit. For the purpose of these collections caesarean section is defined as "operative birth through an abdominal incision." Elective caesarean section is defined as "operative birth through an abdominal incision performed before the onset of labour" and emergency caesarean section as "operative birth through an abdominal incision performed after the onset of labour."

Chart 3-4 Potentially Preventable Hospitalisations. The charts are based on analysis of the National Hospital Morbidity Data, and previously published in Australian Hospital Statistics 2001-02 (AIHW 2003a). Potentially preventable hospitalisations were identified using the methods used for the Victorian Department of Human Services study of ambulatory care sensitive conditions (2002). Rates per 1 000 population are age-sex standardised to the Australian population at 30 June 2001. Remoteness categories are based on the Australian Bureau of Statistics' Australian Standard Geographic Classification (ASGC).

Chart 4-1 Deaths Associated with Adverse Events. The charts are based on an analysis of the National Mortality Data, conducted by Hargraves (2001).

Chart 4-2 Anaesthesia-related deaths. These data are derived from the Australian and New Zealand College of Anaesthetists Review of Anaesthesia Related Mortality 1997-99 (McKay 2002) and previous reviews conducted by the College and the NH&MRC. In individual Australian States, data on deaths associated with anaesthesia have been collected since 1960. National collection commenced in 1985.

Each State has a Committee that reviews reported deaths. Deaths are not reported in the ACT. Deaths are classified into categories reflecting the extent to which anaesthesia is related to the death. Factors associated with each death are also analysed (for example location of patient at the time of death). Rates in the first chart have been converted to rates per 100 000 anaesthetic procedures from the data presented in McKay 2002.

Chart 4-3 Surgical Mortality. The chart is based on data reported in the first report from the *Western Australia Audit of Surgical Mortality* (WAASM 2003). WAASM was established in 2001 and is the first comprehensive system for auditing surgical mortality in Australia. It has been based on the design and experience of the Scottish Audit of Surgical Mortality. Eight-five per cent of surgeons in Western Australia are participating in the audit process. In its first 21 months 1 247 deaths have been identified and/or reported to WAASM. In 943 of these deaths an audit has commenced, a process involving review of the case by peer assessors (surgeons). Audits have been completed in 663 cases. Of these 527 deaths involved deaths associated with surgical operations. Based on a record linkage study, it is estimated that there were a further 157 hospital deaths in participating hospitals that were not reported to WAASM, and a further 151 cases in non-participating hospitals.

Chart 4-4 Mortality for Coronary Artery By-pass Grafts. The first chart is based on clinical indicators reported to the Australian Council on Healthcare standards (ACHS 2003). The clinical indicator is defined as the following: Numerator: The number of patients who die in the same admission as having coronary artery graft surgery, during the period under study. Denominator: The total number of patients having coronary artery graft surgery, during the time period under study. This definition refers to in-hospital mortality.

The second chart is based on data reported in the report *Cardiac Surgery in Victorian Hospitals* prepared under the auspice of the Australasian Society of Cardiothoracic Surgeons and the Department of Human Services (Reid et al 2004). Mortality rates are calculated at 30 days following surgery. The chart includes both the 'actual' unadjusted mortality rate and a 'risk adjusted' mortality rate. The risk adjusted mortality rate takes into account characteristics of patients that have been shown to affect the risk of mortality (such as age).

Chart 4-5 Maternal Mortality. The charts are based on data presented in the *Report on Maternal Deaths in Australia 1994-96* (Ford J, Sullivan E, Walters W et al 2001), the latest report on maternal deaths available for Australia. The report (and previous reports) are based on reviews conducted of maternal mortality committees in each State and Territory. Members of the Royal Australian and New Zealand College of Obstetricians and Gynaecologists are active in the process of review. Maternal mortality as defined by the World Health Organization (WHO) is the death of a woman while pregnant or within 42 days of the termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management. This definition includes deaths of women from terminations of pregnancy, spontaneous abortion, miscarriage and ectopic pregnancy, but excludes deaths from incidental causes. Also excluded are deaths from assisted reproduction technologies where pregnancy has not occurred. In previous reports on maternal deaths in Australia, incidental deaths have been included in the definition of maternal mortality, as have deaths occurring *more than 42 days* after termination of the pregnancy, when their origin and illness related to the pregnancy. In the latest report only deaths among pregnant women or *within 42 days* of pregnancy being delivered or terminated will be included as maternal deaths.

Chart 4-6 Drug Adverse Events. The charts are based on analysis of the National Hospital Morbidity Data, conducted by the AIHW for this report.

Chart 4-7 Health Care Acquired Infection. The chart is based on clinical indicators reported to the Australian Council of Healthcare Standards (ACHS 2003). The indicator definitions reflect joint work undertaken by the Australian Council of Healthcare Standards and the National Advisory Board to the Australian Infection Control Association (Richards et al 2003). Since 2002 data has been collected on a voluntary basis in line with these definitions through the Australian Council on Healthcare Standards Clinical Indicators (ACHS 2003).

Chart 4-8 Post-Operative Pulmonary Embolism. The chart is based on clinical indicators reported to the Australian Council of Healthcare Standards (ACHS 2003). One hundred and seventy-two Australian hospitals reported this indicator in 2001 and 2002.

Chart 4-9 Pressure Ulcers. The chart is based on data reported in a study of the prevalence of pressure ulcers in Victorian public hospitals conducted between August and December 2003 (Victorian Quality Council 2004). Victorian Quality Council invited all public metropolitan, rural and regional health services in Victoria to take part in the survey. Forty-eight Victorian health services elected to participate, equating to approximately 77% or just over 7 000 potential beds available for the survey. Over the period of the survey a combination of fluctuations in bed occupancy and survey exclusion criteria reduced the potential survey population to 6 003 patients. The study included all consenting adult inpatients on site on the day of the survey (including Emergency Department patients flagged for admission), and patients in acute and subacute beds only. The study excluded paediatric, psychiatric, hospital in the home, day surgery and day procedure patients. For the purpose of the survey, a "Pressure Ulcer" was defined as any lesion caused by unrelieved

pressure resulting in damage of the skin and underlying tissue. Pressure ulcers were assessed by specially trained surveyors in each participating hospital. Pressure ulcers were staged according to the Australian Wound Management Association (AWMA) Clinical Practice Guidelines for the Prediction and Prevention of Pressure Ulcers 1.

Stage 1 – Observable pressure related alteration of intact skin whose indicators as compared to the adjacent or opposite area of the body may include changes in 1 or more of the following: skin temperature (warmth or coolness), tissue consistency (firm or boggy feel) and/or sensation (pain, itching). The ulcer appears as a defined area of persistent redness in lightly pigmented skin, whereas in darker skin tones, the ulcer may appear with persistent red, blue or purple hues.

Stage 2 - Partial thickness skin loss involving epidermis and/or dermis. The ulcer is superficial and presents clinically as an abrasion, blister, or shallow crater.

Stage 3 - Full thickness skin loss involving damage or necrosis of subcutaneous tissue that may extend down to but not through underlying fascia. The ulcer presents clinically as a deep crater with or without undermining of adjacent tissue.

Stage 4 - Full thickness skin loss with extensive destruction, tissue necrosis or damage to muscle, bone, or supporting structures (for example, tendon or joint capsule). Undermining and sinus tracts may also be associated with Stage 4 pressure ulcers.

Chart 4-10 Patient Falls. The first chart was based on data reported in Donoghue Graham, Gibbs et al 2003. The second chart was based on analysis of the National Hospital Morbidity Data, conducted by the AIHW for this report.

Chart 4-11 Medical Device Problems. The charts were based on data provided by the Therapeutic Goods Administration.

Chart 4-12 Accreditation. The chart on accreditation of hospitals is based on data reported in *Australian Hospital Statistics* (AIHW 2003a). For that report, the AIHW relies on data collected by the Australian Bureau of Statistics for private hospitals. The Australian Council of Healthcare Standards (ACHS), which is the major accrediting agency, has reported that private hospitals in Tasmania, Australian Capital Territory and the Northern Territory are accredited, despite the absence of data for those jurisdictions in *Australian Hospital Statistics*. Data on accreditation of general practices was provided for the National Health Performance Committee by Australian General Practice Accreditation Limited.

Chart 5-1 Availability of General Practitioners. The data were based on analysis undertaken by the Australian Government Department of Health and Ageing. General Practitioner numbers were based on the doctors' major practice postcode as at the last quarter of the reference period. These were allocated to the Rural, Remote or Metropolitan Area (RRMA) classification. The major practice postcode is the location at which the doctor rendered the most services. Full time workload equivalent numbers were based on the doctors' practice location postcodes at which services were rendered within the reference period. In the small proportion of cases where data values were not reported, doctors were reallocated based on available information. Estimated resident population was based on the 2001 Census.

Chart 5-2 Timely Initiation of Prenatal Care. This chart is based on data for NSW (Centre for Epidemiology and Research, NSW Department of Health 2003, Table 7). Data on first antenatal visit are collected as a component of the NSW Midwives Data Collection.

Chart 5-3 Access to Hospital Services. The chart is based on data reported in *Australian Hospital Statistics* (AIHW 2003a).

Chart 5-4 Waiting Times for Elective Surgery. The chart is based on data reported in *Australian Hospital Statistics* (AIHW 2003a).

Chart 5-5 Waiting in Emergency Departments. The chart is based on data reported in *Review of Government Services 2004* (Steering Committee for the Review of Government Service Provision 2004).

Chart 5-6 Access to Residential Aged Care. The chart is based on data reported in *Review of Government Services 2004* (Steering Committee for the Review of Government Service Provision 2004).

Chart 5-7 Access to Dental Care. The chart is based on data published in AIHW Australia's Health 2004.

Chart 5-8 Access Problems Due to Cost. The charts are based on data from the *Commonwealth Fund/Harvard/Harris Interactive 2002 International Health Policy Survey* as reported in Blendon, Schoen, DesRoches (2003).

Chart 6-1 Satisfaction With Health Services. These data come from the TQA Research survey, a syndicated population survey focusing on health care and health insurance issues (TQA 2003). The survey has been conducted every second year since 1987. Data for the first chart are based on general population responses to questions asking respondents to rate the quality of health care, the service offered by public hospitals, and local doctors and General Practitioners and the services they offered. Responses could be: (1) Very high (2) Fairly high (3) Neither high nor low (4) Fairly low (5) Very low. Data for the second chart are based on respondents who had had a recent hospital stay. The response relates to the last hospital stay.

Chart 6-2 Perceptions of Quality of Doctor-Patient Relations. The charts are based on data from the *Commonwealth Fund/Harvard/Harris Interactive International Health Policy Surveys* conducted in 2001 and 2002 as reported in Blendon, Schoen, DesRoches (2002 and 2003).

Chart 7-1 Cancer Survival. The charts are based on data reported in *Cancer Survival in Australia* (AIHW & AACR 2003). The analysis is based on data from cancer registries in each State and Territory linked to the National Death Index. The analysis of geographic category and socio-economic status is based on the place of residence at the time of a diagnosis of cancer. Relative survival is the ratio of observed survival rate for a given cohort of cancer patients to the expected survival rate for the general population.

Chart 7-2 Revascularisation for Coronary Heart Disease. The first chart is based on data reported in *Australian Hospital Statistics* (AIHW 2003a). The second chart is based on analysing rates for 262 localities across Australia, undertaken by the AIHW for this report. For the purpose of this analysis, localities with very small populations were grouped up. The presentation is in the form of a funnel plot, to illustrate the extent of variation between regions in the use of these procedures.

Chart 7-3 Access to Specialist Services for Renal Diseases. The first chart is from Cass et al 2003. The second chart is based on data presented in Cass et al 2002.

Chart 7-4 People with Mental Illness. The chart is based on data presented in *Duty to Care: Preventable Physical Illness in People with Mental Illness* (Lawrence, Holman, Jablensky 2001). This was a study conducted in Western Australia which was able to examine the patterns of mortality and hospital use for people who had been clients of public mental health services in that state between 1966 and 1998.

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