

5 Health system performance

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- Indicator 3.02 Teenage purchase of cigarettes
- Indicator 3.03 Cervical screening
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Introduction

Health system performance (Tier 3) accommodates reporting on various service categories and interventions across the health care system.

The health care system may be viewed as a continuum linking the sectors within the system. This continuum incorporates four sectors: population health, primary care, acute care and continuing care. There is a considerable overlap of services and functions between these sectors.

The indicators selected for this report are drawn from these sectors, and are intended to cover the nine dimensions of performance outlined in Table 5.1. A single indicator may be relevant for several dimensions. The principal indicators are shown in Table 5.1.

Table 5.1: Tier 3 health system performance dimensions and selected indicators

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?		
Effective	Appropriate	Efficient
3.01 Unsafe sharing of needles	3.10 Appropriate use of antibiotics	3.14 Hospital costs
3.02 Teenage purchase of cigarettes	3.11 Management of diabetes	3.15 Length of stay in hospital
3.03 Cervical screening	3.12 Delivery by caesarean section	
3.04 Breast cancer screening	3.13 Hysterectomy rate	
3.05 Childhood immunisation		
3.06 Influenza vaccination		
3.07 Potentially preventable hospitalisations		
3.08 Survival following acute coronary heart disease event		
3.09 Cancer survival		
Responsive	Accessible	Safe
3.16 Waiting times in emergency departments	3.17 Bulk billing for non-referred (gp) attendances	3.20 Electronic prescribing and clinical data in general practice
	3.18 Availability of GP services	3.21 Adverse events treated in hospitals
	3.19 Access to elective surgery	
Continuous	Capable	Sustainable
3.22 Enhanced Primary Care services	3.24 Accreditation in general practice	3.25 Health workforce
3.23 Health assessments by GPs		

The performance measures presented in this chapter provide an overview of the performance of the Australian health system. The overview that emerges is one of a system that demonstrates important improvements in performance, but for which there remains considerable scope for further improvement. Perhaps more evident is the need for further work on improving and developing performance measures and our understanding of the extent to which measures indicate the potential for improvement.

Health system performance

Effectiveness

A number of the measures presented suggest improvements in the effectiveness of the health system over time:

- The proportion of injecting drug users who reported sharing a needle or syringe has decreased from a peak of 22% of injecting drug users in 1999 to 14% in 2001 (Indicator 3.01).
- Participation in breast cancer screening has increased from 52% of women aged 50 to 69 years in 1996-97 to 56% in 1999-2000 (Indicator 3.04).
- Childhood immunisation rates continue to improve steadily. 75% of children were fully immunised at 12 months in March 1997, and in September 2002 it was 92% (Indicator 3.05).
- Coronary heart disease case-fatality rates have declined from 36% in 1993-94 to 30% in 2000-01 (Indicator 3.08).
- Five year relative survival rates for several types of cancer have improved. For all cancers, the five year relative survival rate for males increased from 44% in 1982-1986 to 57% in 1992-1997. For females the increase was from 55% to 63% (Indicator 3.09).
- A further improvement in effectiveness is shown by significant decreases in the proportion of young smokers who reported that they had personally purchased their most recent cigarette. From 1987 to 2001, the proportion of current teenage smokers personally purchasing their cigarettes has fallen by 60% for current smokers aged 12-15 years and by 25% for those aged 16-17 years (Indicator 3.02). However, while this indicator provides useful and encouraging data on legal compliance by retailers, it needs to be complemented by other indicators of smoking behaviour.

The rate of potentially preventable hospitalisations as measured by Ambulatory Care sensitive conditions (ACSC) provides a useful measure of the effectiveness of the primary care system in dealing with conditions that can be treated on ambulatory rather than an admitted patient basis. The increase in these rates with remoteness would suggest that this is an area where improvement should be possible (Indicator 3.07).

Appropriateness

The measures of appropriateness present a more mixed picture:

- The decreased prescribing rate for those oral antibiotics most commonly used to treat upper respiratory tract infections suggests that these infections are being managed more appropriately and efficiently by primary care providers (Indicator 3.10).
- On the other hand, the continuing increase in caesarean section rates is a matter of concern, as are the above average hysterectomy rates in regional Australia (Indicators 3.12 and 3.13). Of perhaps even greater concern is the continuing inability to specify desirable benchmarks for such indicators .

Accessibility and responsiveness

Some trends in measures of accessibility and responsiveness of health care services also present a mixed picture. These include the recent decrease in the percentage of non-referred (GP) services which are bulk billed (Indicator 3.17) and, over a five-year period, the marginal decrease in the number of full time equivalent primary care practitioners per 100,000 population (Indicator 3.18). The availability of primary care practitioners in rural and remote areas has improved, but there remain substantial differences between urban and rural areas.

Data on waiting times in emergency departments (Indicator 3.16) and on access to elective surgery (Indicator 3.19) are available, but it is hard to relate this data to need for, and accessibility to, hospital services.

Safety, continuity and capability

For 4% of hospital separations in 2001-02, adverse events were reported (Indicator 3.21). Some of these adverse events were due to hospital procedures and some due to services delivered elsewhere in the health system. Data are not yet adequate to indicate whether adverse events are decreasing or increasing.

The increase in the rate of practices using electronic prescribing software or data connectivity suggests an improvement in access to safe practice protocols (Indicator 3.20).

More GPs were adopting a multidisciplinary approach to health care by using the enhanced primary care (EPC) items. In the last quarter of 2000 23% of GPs used these items, increasing to 44% in the last two quarters of 2002 (Indicator 3.22).

Also GPs were starting to provide annual voluntary health assessments to eligible older people and Aboriginal and Torres Strait Islander people (Indicator 3.23).

Sustainable

The health workforce is getting older and, for doctors and nurses, graduates as a percentage of the total workforce has declined from 1993 to 2000. This raises concerns about the sustainability of the medical and nursing workforce (Indicator 3.25).

Interpretation and construction of indicators

In some instances, the interpretation, or even the basic data and construction of the indicator, continue to be problematic. The usefulness of the cost per casemix adjusted separation as a measure of the efficiency of public hospitals continues to be limited by the inability of many jurisdictions to accurately isolate the costs of sub-acute and psychiatric services for which diagnosis related groups (DRGs) are acknowledged to be inadequate measures of resource requirements. There is also an ongoing need to standardise the measurement of waiting times for treatment in emergency departments. However, the introduction of a relative stay index (adjusted for casemix) is a welcome improvement in the measurement of the efficiency of public and private hospitals.

Indicator 3.01 Unsafe sharing of needles

Indicator definition

- Description:** Percentage of injecting drug users, participating in surveys carried out at needle and syringe programs, who report recent sharing of needles and syringes.
- Numerator:** Injecting drug users, participating in surveys carried out at needle and syringe programs, who reported use of a needle and syringe after someone else in the month preceding the survey.
- Denominator:** Injecting drug users, participating in surveys carried out at needle and syringe programs.
- Presentation:** Proportion of injecting drug users who report recent sharing of needles and syringes, by sex, and over time.

Rationale and evidence

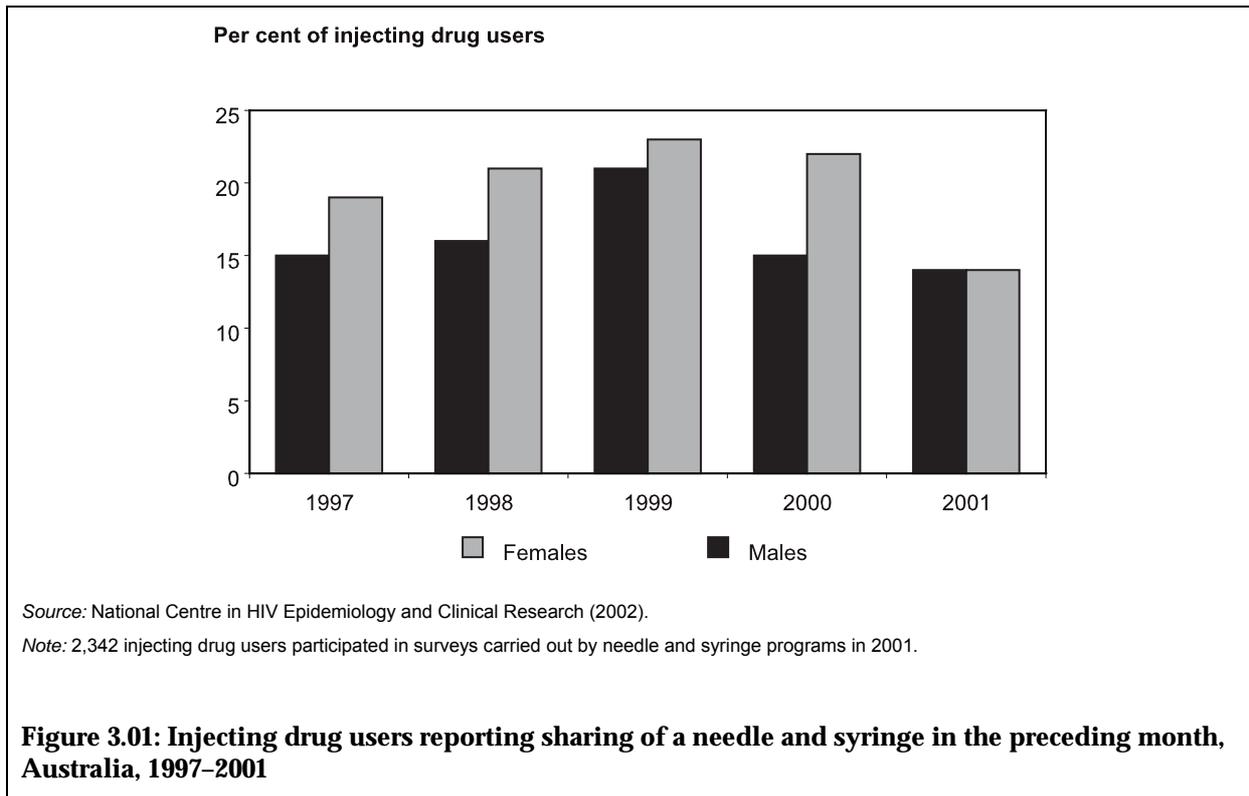
The indicator reflects the primary objective of needle and syringe programs, which is to prevent the transmission of blood-borne viruses among injecting drug users through sharing injecting equipment. Needle and syringe programs provide sterile injecting equipment and information to injecting drug users. There are approximately 100,000 drug users across Australia who inject at least ten times per month, with a further 175,000 who inject less frequently (Law 1999).

The introduction of needle exchange programs has been an important component of a multifaceted strategy to control the HIV/AIDS epidemic. This is one of the factors explaining Australia's successful control of the HIV/AIDS epidemic, relative to most other western nations. The programs continue to be important for controlling HIV/AIDS and other blood borne diseases, such as hepatitis C.

What the data show

- In 2001, the proportion of injecting drug users reporting the use of a needle and syringe after someone else was 14% for both males and females, the lowest proportion over the whole period 1997–2001. The reported use of a needle and syringe after someone else was highest in 1999 (21% of males and 23% of females).
- Partly because of the needle and syringe program, the proportion of people who newly acquired HIV associated with injecting drug use was only 3.5% of new cases in 2001 (National Centre in HIV Epidemiology and Clinical Research 2002). In contrast, in the United States, injecting drug use was associated with 11% of new HIV infection cases in 2001 (National Center for Health Statistics 2002).
- The number of new diagnoses for HIV remained relatively stable between 1997 and 2001 (about 750 new diagnoses each year) after falling from a peak of over 1,700 cases in 1985 (AIHW 2002b).

- There were 16,734 cases of hepatitis C virus infection diagnosed in 2001. This is an area where the needle and syringe program could have a major impact. Although we are unable to determine the source of infection for the vast majority of hepatitis C cases reported, for the 214 cases in 2000 where the source was known, 188 (89%) were associated with injecting drug use.
- Hepatitis C is a major cause of liver cancer. The number of deaths due to liver cancer increased by 20% from 1997 to 2001, from 645 deaths in 1997 to 778 deaths in 2001 (AIHW National Mortality Database).



Indicator 3.02 Teenage purchase of cigarettes

Indicator definition

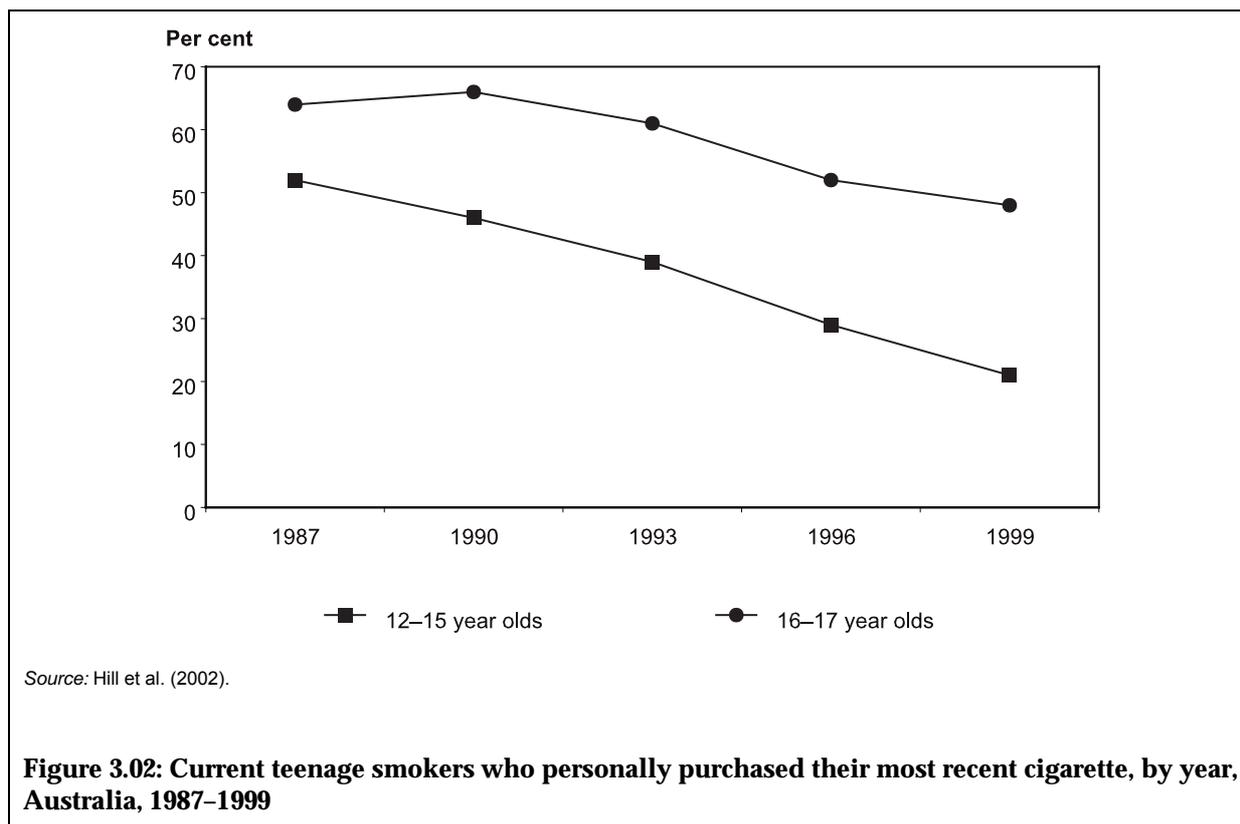
- Description:** Percentage of teenage smokers who personally purchased their most recent cigarette.
- Numerator:** Current teenage smokers aged 12–15 and 16–17 years who reported that they had personally purchased their most recent cigarette.
- Denominator:** Current teenage smokers.
- Presentation:** Proportion of current teenage smokers who reported personally purchasing their most recent cigarette.

Rationale and evidence

Evidence suggests that there is a correlation between regular smoking, buying cigarettes and heavy cigarette consumption, and that decreasing the ability of teenagers to purchase their own cigarettes will assist in reducing the likelihood of teenagers making the transition from experimental to regular and addicted smoking. States and Territories have enacted legislation that prohibits tobacco sales to teenagers.

What the data show

- According to the 2001 National Drug Strategy Household Survey, around 20% of Australians aged 14 years and over were daily smokers, 23% were current smokers, one in four were ex-smokers and half the population had never smoked (AIHW 2002a).
- In 2001, one in five 14–19 year olds reported smoking, with 16.2% of females and 14% of males smoking every day (AIHW 2002a).
- In 1999, 21% of current smokers aged 12–15 years and 48% aged 16–17 years reported having personally purchased their last cigarette (Hill et al. 2002).
- Since 1987, the proportion of current teenage smokers personally purchasing their own cigarettes has fallen by 60% for current smokers aged 12–15 years and by 25% for those aged 16–17 years.
- Despite the success in reducing the proportion of teenage smokers who personally purchase their own cigarettes, there remain opportunities to further reduce these rates and thus weaken the transition from experimental smoking by teenagers to regular and addicted smoking.



Indicator related to:

- 1.02 Incidence of cancer
- 1.08 Mortality for National Health Priority Area diseases and conditions
- 2.01 Children exposed to tobacco smoke in the home
- 2.05 Adult smoking

Indicator 3.03 Cervical screening

Indicator definition

Description: Cervical screening rates for women within national target groups.

Numerator: Women aged 20–69 years who have had a cervical smear recorded in the past two years.

Denominator: Women aged 20–69 years excluding those who have had a hysterectomy.

Presentation: Age-standardised proportion, standardised to the June 2001 Australian population.

Rationale and evidence

Up to 90% 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 in the target age group of 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% and the incidence fell by 41% (AIHW 2003c, Taylor R 2003).

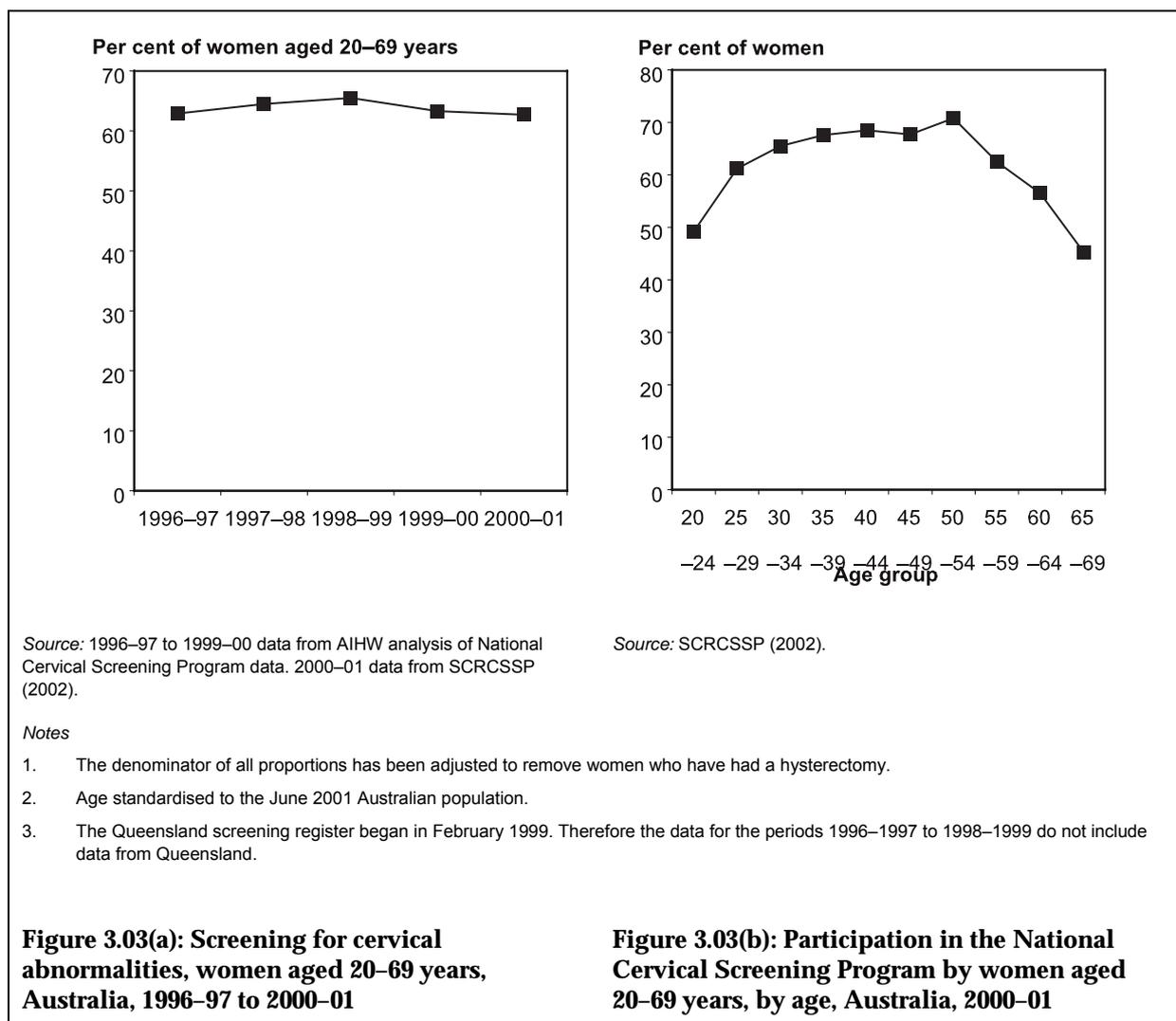
Cervical screening is largely provided by GPs, although public sector providers such as family planning clinics and women's health services are also important. States and Territories take responsibility for supporting screening programs through recruitment activities and the support of population registers and reminder systems. The Australian Government is the primary source of funding for cervical screening, through the MBS. It also undertakes national policy co-ordination and acts on ensuring quality standards in cervical cytology.

What the data show

- In 2000–01, 63%² 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% 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.
- Participation in cervical screening varies across age groups and jurisdictions. In the age group 20–24 years 49% of women have been screened. This participation rate increases for women aged 25–54, reaching a peak of 71% for women aged 50–54. Participation drops for older women, decreasing to 45% for women aged 65–69 years.

² Variations between these figures and the statistical reports of the National Cervical Screening Program are due to those reports being standardised to the 1991 Australian population whereas this report uses the 2001 population.

- In 2000–01, overall participation rates were highest for Tasmania (67%) and South Australia (66%) and lowest for New South Wales (60%) and Queensland (58%) (SCRCSSP 2002).
- Australia recommends a two-year screening interval for cervical screening. Many other countries adopt a three-year screening interval and some a five-year screening interval. This makes international comparison difficult. Data from New South Wales, Victoria, South Australia and Tasmania indicates that over three-quarters of eligible women have been screened over a three-year period (various State Annual Reports, AIHW 2003c, Taylor R 2003).



Indicator related to:

1.02 Incidence of cancer

3.09 Cancer survival

Indicator 3.04 Breast cancer screening

Indicator definition

Description: Breast cancer screening rates for women within the national target groups.

Numerator: Women aged 50–69 years who have participated in the BreastScreen Australia program.

Denominator: Women aged 50–69 years.

Presentation: Age-standardised proportions, standardised to the June 2001 Australian population.

Rationale and evidence

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.

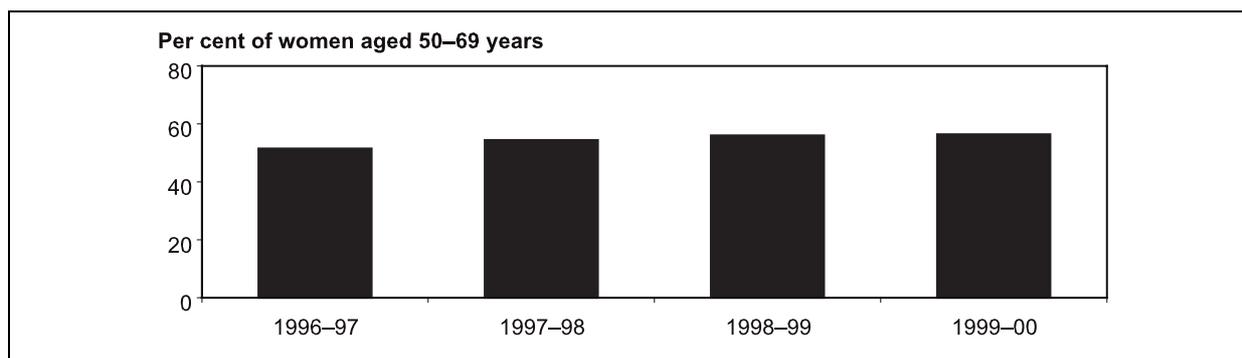
Mammography screening provided through BreastScreen Australia targets women without symptoms. However, other mammography for screening and diagnosis (i.e. for women with a strong family history or for investigation of breast symptoms) may occur in the private sector. A proportion of mammograms done in the private sector could be classed as screening mammograms, but it is not possible to determine the exact number. Therefore to some extent the figures presented here for the proportion of the target population receiving screening mammography are an underestimation of screening on a national basis.

What the data show

- In 1999–00, 56.4%³ of women aged 50–69 years participated in the BreastScreen Australia Program.
- Between 1996–97 and 1999–00, participation increased by 10%, from 51.5% in 1996–97. Participation increased in all jurisdictions with the largest increases in Queensland (35.4%), the Northern Territory (18.6%), South Australia (13.5%) and Tasmania (12.8%).
- In 1999–00, participation was greatest in South Australia (64.1%) and the Australian Capital Territory (60.4%) and lowest for the Northern Territory (48.6%), New South Wales (53.1%) and Western Australia (53.3%).

³ Variations between these figures and the statistical reports of the Breastscreen Australia Program are due to those reports being standardised to the 1991 Australian population whereas this report uses the 2001 population.

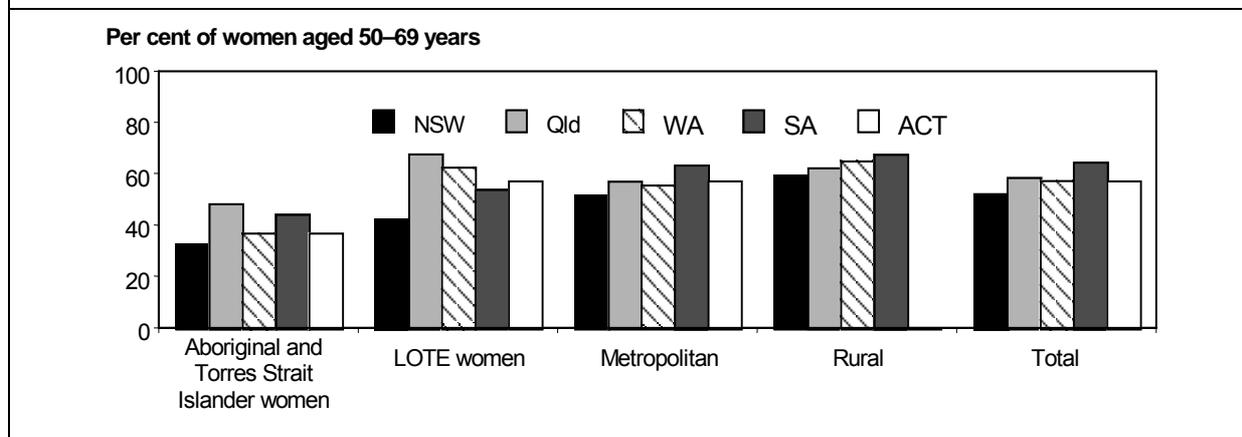
- Participation rates are higher in rural regions of most States and Territories. However participation rates are much lower than the state average for Aboriginal and Torres Strait Islander women. Comparisons of participation rates between Aboriginal and Torres Strait Islander people and non-Indigenous women need to be treated with caution because of misclassification of Aboriginal and Torres Strait Islander status in the numerator and uncertainties about the denominator.
- Participation by women with a first language other than English (LOTE) varies between States and Territories. In New South Wales and South Australia, their participation rate is lower than average.



Sources: AIHW (1998); AIHW (2000a).

- Notes
1. Age-standardised to the June 2001 Australian population.
 2. Each year is statistically significantly different from all other years listed in this figure.

Figure 3.04(a): Participation of women aged 50–69 years in the BreastScreen Australia program, Australia, 1996–97 to 1999–00



Source: SCRCSSP (2002).

- Notes
1. Age-standardised to the June 2001 Australian population.
 2. Data were not available for Victoria, the Northern Territory or Tasmania as that was not disaggregated into categories. Therefore a national rate is not available.
 3. See notes in Appendix 3 for further information.

Figure 3.04(b): Participation rates in the BreastScreen Australia program for women aged 50–69 years for selected target group, by jurisdiction, 2000–01

Indicator related to:

1.02 Incidence of cancer

3.09 Cancer survival

Indicator 3.05 Childhood immunisation

Indicator definition

Description: Number of children fully immunised at 12 months and at 24 months of age.

Numerator: Number of children in a three-month birth cohort (aged 12–15 months at the census date) who received vaccinations under the National Immunisation Program (NIP) by their first birthday, and number of children in a three-month birth cohort (aged 24–27 months at the census date) who received vaccinations under the NIP by their second birthday.

Denominator: Total number of children in each three-month cohort registered with the Australian Childhood Immunisation Register (ACIR) aged 12–15 months, and 24–27 months, at the census date.

Presentation: Proportion of children fully immunised.

Rationale and evidence

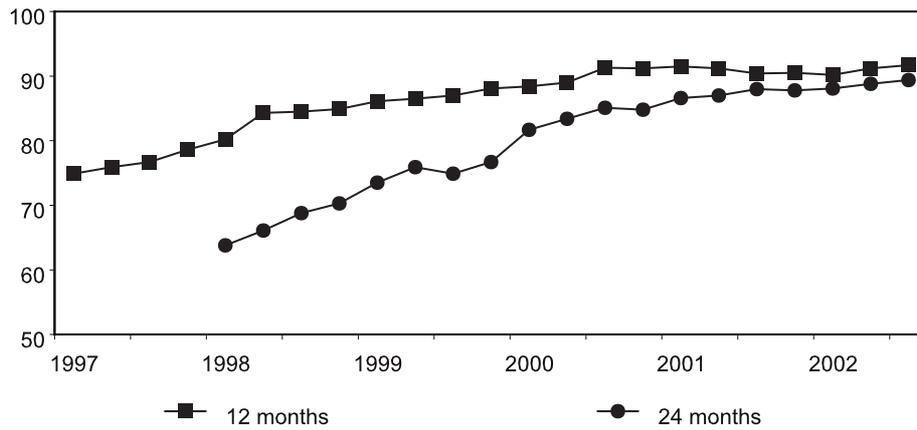
Immunisation is generally highly cost-effective in reducing morbidity and mortality rates in vaccine-preventable diseases. Health system effectiveness in providing vaccination services can be measured by vaccination coverage at key milestones (such as 12 and 24 months of age).

Childhood immunisation is a cornerstone of public health practice. Similar measures are used by the WHO as key indicators of public health programs in all countries. The Australian immunisation program is a Australian Government/State/Territory public health program funded through the *Public Health Outcomes Funding Agreement*.

What the data show

- 91.7% of children in Australia aged one year and 89.4% of children aged 2 years had been fully immunised at 30 September 2002.
- Between 1997, when the ACIR was established, and 2000, immunisation coverage increased in all jurisdictions. In March 1997, 75% of children were fully immunised at 12 months. Since 2000, coverage estimates for children aged 1 year have been stable. Coverage estimates for children aged 2 years have continued to increase and are now converging to estimates for children aged 1 year.
- There were no marked differences between jurisdictions in immunisation coverage in 2002.
- Increases in immunisation coverage since 1997 have resulted in Australia achieving a relatively high level of childhood immunisation compared with most other countries. International comparisons are difficult because of differences in immunisation schedules adopted by countries, and differences in data collection methods. The ACIR provides high quality, accurate and comprehensive data, compared with other countries.

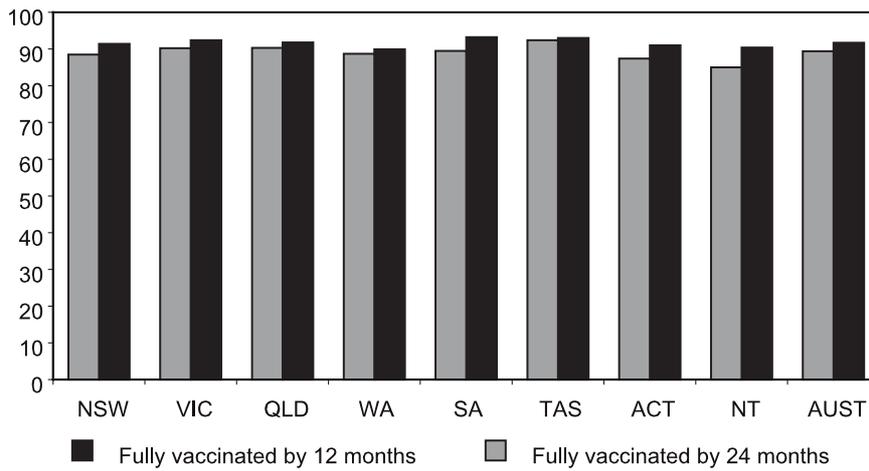
Per cent of children



Source: National Centre for Immunisation Research and Surveillance of Vaccine Preventable Diseases (2002).

Figure 3.05(a): Childhood immunisation at 12 months and 24 months, Australia, 1997–2002

Per cent of children



Source: National Centre for Immunisation Research and Surveillance of Vaccine Preventable Diseases (2002).

Figure 3.05(b): Childhood immunisation at 12 months and 24 months, by jurisdiction, 2002

Indicator related to:

3.07 Potentially preventable hospitalisations