

Our State of Health 2004

An overview of the health of the people
of Western Australia

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Health Information Centre
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Abbreviations

CABG	Coronary Artery Bypass Grafting
DALY	Disability Adjusted Life Years
GDP	Gross Domestic Product
HCV	Hepatitis C Virus
NHPA	National Health Priority Areas
NHS	National Health Survey
NNDSS	National Notifiable Diseases Surveillance System
NRMRC	National Health and Medical Research Council
PCI	Percutaneous Coronary Interventions
WA	Western Australia
WACCPP	Western Australian Cervical Cancer Prevention Program
WHO	World Health Organisation

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Executive summary

This report presents the latest data on the health of the Western Australian population and includes information on the leading causes of disease and health related behaviours. Where possible, trend data are presented to allow for comparisons across time.

The indicators used throughout this report were drawn from measures of demographics, health determinants, burden of disease, cancer incidence and mortality, with a focus on conditions defined under the Australian National Health Priority Areas (NHPA) initiative.

For the period 1998–2002, the leading causes of death among Western Australian males were coronary heart disease, lung cancer, and stroke. For Western Australian females the leading causes of death were coronary heart disease, stroke and breast cancer.

Indicators of good health outcomes for Western Australians

Life expectancy

Life expectancy has improved dramatically over the past century in WA. This is primarily due to substantial declines in infant mortality and infectious diseases in the first half of the 20th century, and the reduction in mortality from chronic diseases such as cardiovascular diseases in the latter part of the century.

Since the early 1900s, life expectancy for both Western Australian males and females increased by around 23 years. In 1900 a newborn boy had a life expectancy of around 54 years, while a newborn girl had a life expectancy of 60 years. By 2002, this had increased to 78 years and 83 years respectively. However, these improvements were not enjoyed by all sectors of our society, with Western Australian Aboriginal people recording life expectancies of 66 and 71 years among males and females respectively.

Infant mortality

Significant improvements in infant mortality have been achieved in WA over the past century, with rates falling from more than 126 deaths per 1,000 live births in 1900, to less than 4 deaths per 1,000 live births in 2002.

The infant mortality rate for Aboriginal children in WA was approximately three times higher than their non-Aboriginal counterparts.

Cardiovascular disease

Coronary heart disease remains the leading cause of death in WA, although, significant declines in mortality have been achieved over the past two decades. Between 1982 and 2002, mortality rates fell by an average of 5% per year for males and 4% per year for females. Mortality rates for coronary heart disease in 2002 were 142 deaths and 86 deaths per 100,000 persons among males and females respectively.

The mortality rate for stroke also fell by an average of 4% for males and 3% for females.

Smoking and lung cancer

The proportion of non-smokers in WA has increased steadily over the past 10 years. In 1990, around 70% of those over the age of 18 years indicated that they did not smoke. By 2004, more than 80% of Western Australians were non-smokers. Overall, around 22% of males and 18% of females indicated that they smoked tobacco products on a regular basis.

As a direct result of the decline in smoking status among Western Australian males, mortality rates for lung cancer have fallen significantly by an average of 1.7% per year since 1982. However, despite recent declines in female smoking, mortality rates for lung cancer among females is continuing to rise, due to the long lead time between beginning to smoke and the development of cancer.

Concerns and future challenges

Injury prevention

Injuries were responsible for almost 700 deaths throughout WA in 2002, with 64% of these occurring among males. Over the past 20 years, deaths from injuries and poisonings have remained relatively stable.

Over the past two decades, suicide rates in WA remained relatively stable. In 2002 suicide was the leading cause of injury death throughout the State, with males recording significantly higher rates than females (19 and 6 per 100,000 persons respectively). However, a greater number of females than males attempt suicide, with hospitalisation separation rates of 1.8 separations per 1,000 persons for females and 1.1 separations per 1,000 persons for males in 2002.

Risky drinking

In 2004, the majority of Western Australians reported that they drank alcohol at levels defined as low risk. Younger age groups were more likely to drink at risky/high risk levels, with those aged 25–34 years recording the highest prevalence of risky/high risk drinking.

Obesity

Obesity continues to be a major concern in WA, with the proportion of people classified as either overweight or obese increasing over recent years. In 2004, 60% of males and 44% of females aged 18 years and over were classified as either overweight or obese.

Aboriginal health

Aboriginal people experience more risk factors for disease and are more likely to smoke, be overweight or obese, and to drink at risky/high risk levels. Furthermore, they experience higher rates of disease than the general community, including

significantly higher rates of sexually transmitted disease and diabetes and are two to three times more likely to die as a result of cardiovascular disease, cancer or injuries.

Introduction

Enormous gains in the health status of the Western Australian population have been achieved over the past 100 years. In the early part of the 20th century, many of these gains were related to improved living conditions and nutrition, and the subsequent fall in infectious and parasitic diseases. Towards the middle of the century, chronic conditions such as cardiovascular disease and cancer overtook infectious diseases as the leading cause of death. However, by the late 1960s, mortality rates for these diseases also began to fall, due to improved medical procedures and population health programs aimed at reducing the risk factors for these conditions.

Population health monitoring plays an important role in enabling health professionals and researchers to target specific conditions or populations, while recognising future concerns. Furthermore, it provides a valuable tool to evaluate health through comparisons with previous years, other States/Territories, countries, and sub-populations within the community.

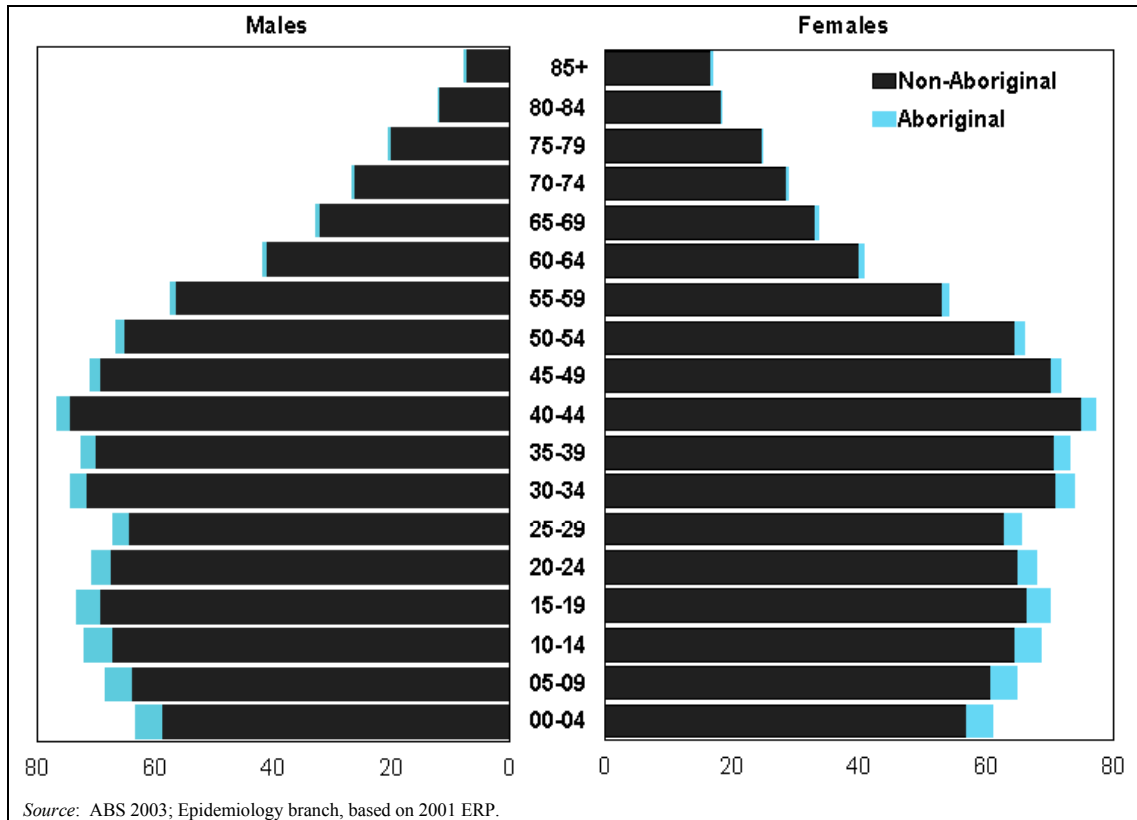
Our State of Health 2004, represents the continued commitment of the Department of Health in providing important epidemiological data concerning the health status of the Western Australian population. The report presents information on the leading causes of disease burden, and where available, includes statistical information by Aboriginal status, place of residence (metropolitan/non-metropolitan), costs, and current population health programs.

While the majority of the data presented in this report is the most up to date available, information from other sources has been incorporated to make this document a comprehensive resource. The statistics presented throughout the report are based on mortality data, hospital separations, incidence data and various surveys that have been conducted by the Department. Unless otherwise stated, the data have been directly age-standardised to the total Australian population as of June 2001. Data from the WA Health and Wellbeing Surveillance System has been weighted to the year of collection.

Population structure

- In 2003, the total population of WA was around 1.9 million, with a similar proportion of males and females. It is estimated that by 2021 the population of the State will be between 2.2 million and 2.6 million.¹
- The proportion of the population within each five-year age group increases steadily from the youngest to those aged 40 to 44 years, before decreasing among older age groups.
- The Aboriginal population represented 3.5% (69,000) of the total WA population in 2003.
- The age structure of the Aboriginal population differed to that of the total population, with the highest proportion of the population in the youngest age groups, while the proportion in each age group decreases with age. The Aboriginal population as a result was younger than the total WA population, with very few persons older than 65 years.
- Among those aged less than 25 years of age, Aboriginal people represent around 6% of the population, while they represent only 1% of the population aged 60 years and over.

Figure 1: Population (thousands) by sex and Aboriginality, WA, 2003



Population change

- In 2003, around one in every 10 Australians were WA residents. As a percentage of the total Australian population, the WA population increased from 8.9% in 1983, to 9.8% in 2003.
- The rate of change over time has been similar for both males and females. However, as a proportion of the total Australian population, WA males outnumbered their female counterparts.
- Between 1983 and 2003, the median age of WA males and females increased from 28.7 to 34.9 years and 29.5 to 36.2 years respectively.
- While WA population trends tend to reflect those of the Australian population, the median age of WA males and females was generally around 1 year less than that recorded by the total Australian population.
- In 2003, the median age of WA females was 1.3 years higher than their male counterparts.

Figure 2: WA population as a percentage of the Australian population by sex, 1983–2003

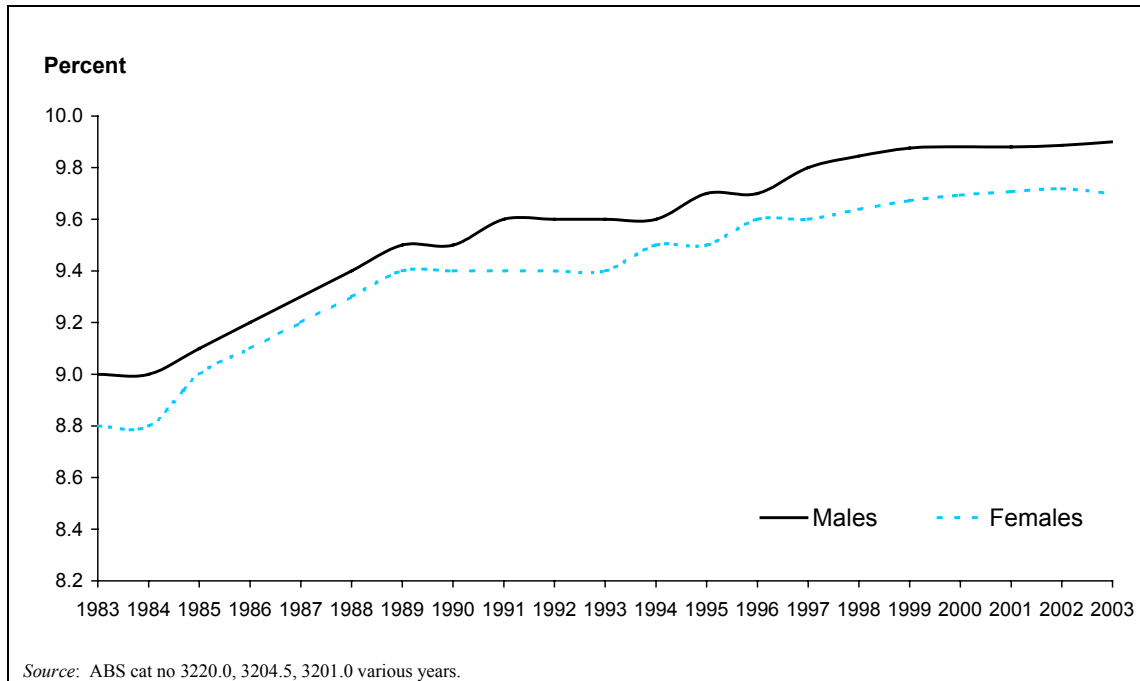
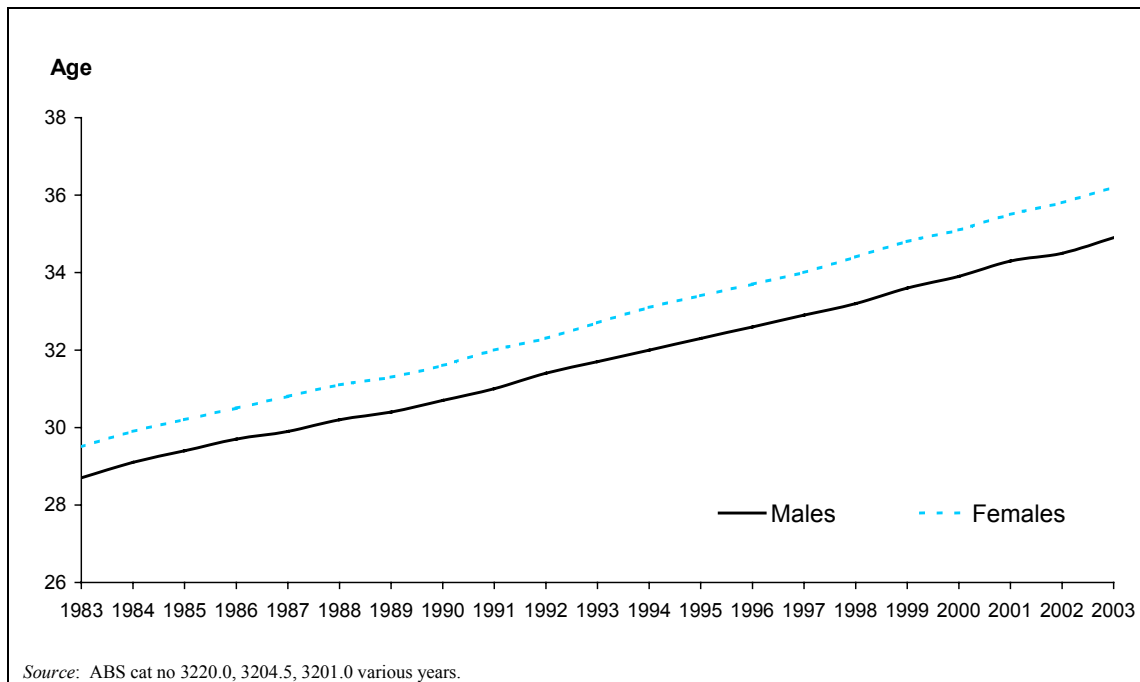


Figure 3: Median age of the WA population by age and sex, 1983–2003



Progress

- Over the past 100 years, life expectancy in WA increased by almost 23 years for males and 22 years for females. By 2002, a boy born in WA could expect to live for 77 years, while a girl could expect to live for almost 83 years.
- The rise in life expectancy recorded in WA over the past century was directly related to the corresponding fall in infant mortality rates. Between 1900 and 2002, infant mortality in WA fell from more than 126 deaths per 1,000 live births, to less than four deaths per 1,000 live births.
- In 2002, the life expectancy of an Aboriginal male living in WA was 66.3 years, while Aboriginal females recorded a life expectancy of 71.7 years.
- Infant mortality rates among Aboriginal people in WA were approximately three times higher than non-Aboriginals.²

Figure 4: Life expectancy by sex, WA, 1984–2002

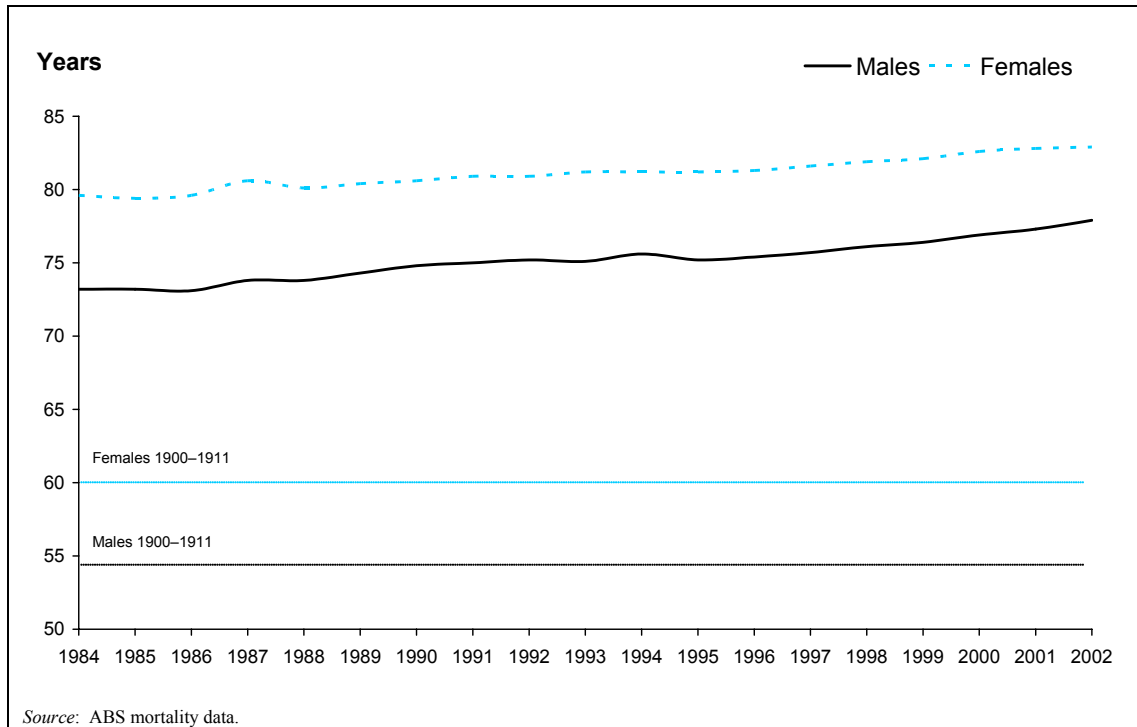
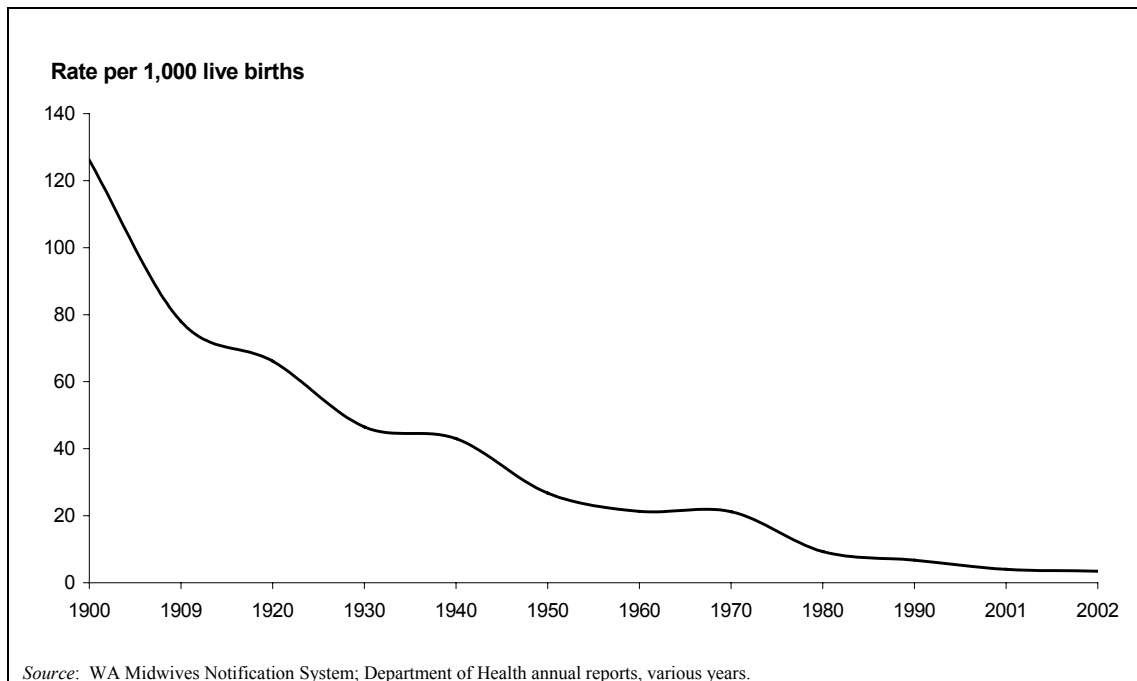


Figure 5: Infant mortality, WA, 1900–2001



Healthy eating

- **Recommended daily serves – vegetables:** In 2000, 12.4% of WA females reported consuming the recommended daily serves of vegetables (five serves per day). By 2004, this figure had increased to 17%. Among WA males, less than one in 10 (8.8%) consumed the recommended number of daily serves in 2000. By 2004, this had increased slightly to 10.2%. However, while the proportion of males and females consuming five or more serves of vegetables per day was relatively low, around 45% of males and 62% of females consumed in excess of three serves per day in 2004.
- **Recommended daily serves – fruits:** In 2004, a higher proportion of females (62.7%) consumed the recommended daily quantity of fruit per day (two or more serves) than males (52.8%). For both males and females, this was slightly higher than the figure reported in 2002. The proportion of those who consume the recommended daily serves of fruits and vegetables increases with age. However, for vegetables, there is a slight decrease among those aged over 65 years.
- **Mortality:** From 1986 to 1995, there were an average of 1,774 deaths per year attributed to diet. This accounted for 18% of all Western Australian deaths reported throughout this period.³
- **Burden of disease:** In 2000, low fruit and vegetable intake was responsible for a total of 4,476 years of life lost and 960 years lived with a disability. Overall, low fruit and vegetable intake accounted for 2.4% of the total disease burden in WA.
- **Aboriginality:** According to the 2001 National Health Survey (NHS), a greater proportion of Aboriginal Australians consumed four or more serves of vegetables per day than their non-Aboriginal counterparts, at 36% and 30% respectively. However, a higher proportion of non-Aboriginal Australians (52%) reported consuming four or more serves of fruit per day than Aboriginal Australians (43%).⁴

Programs

While the consumption of fruit and vegetables is an important factor in maintaining a healthy diet, dietary guidelines from the National Health and Medical Research Council (NHMRC) recommend the consumption of a wide variety of nutritious foods including cereals, fruit and vegetables, legumes and nuts. Moderating total fat intake and limiting the amount of saturated fat consumed is also recommended in the guidelines.⁵

In Western Australia, the *Go for 2 and 5* campaign aims to encourage people to increase their consumption of fruit and vegetables.⁶ Evaluation of this ongoing campaign indicated that 87% of people seeing the advertisement agreed that it was easy to get an extra serve of vegetables in their diet.⁷ However, although 88% of adults were aware of the recommended fruit intake, only 32% were aware of the recommended vegetable intake.⁷

Figure 6: Proportion of Western Australians eating five or more serves of vegetables per day by age, 2002–04

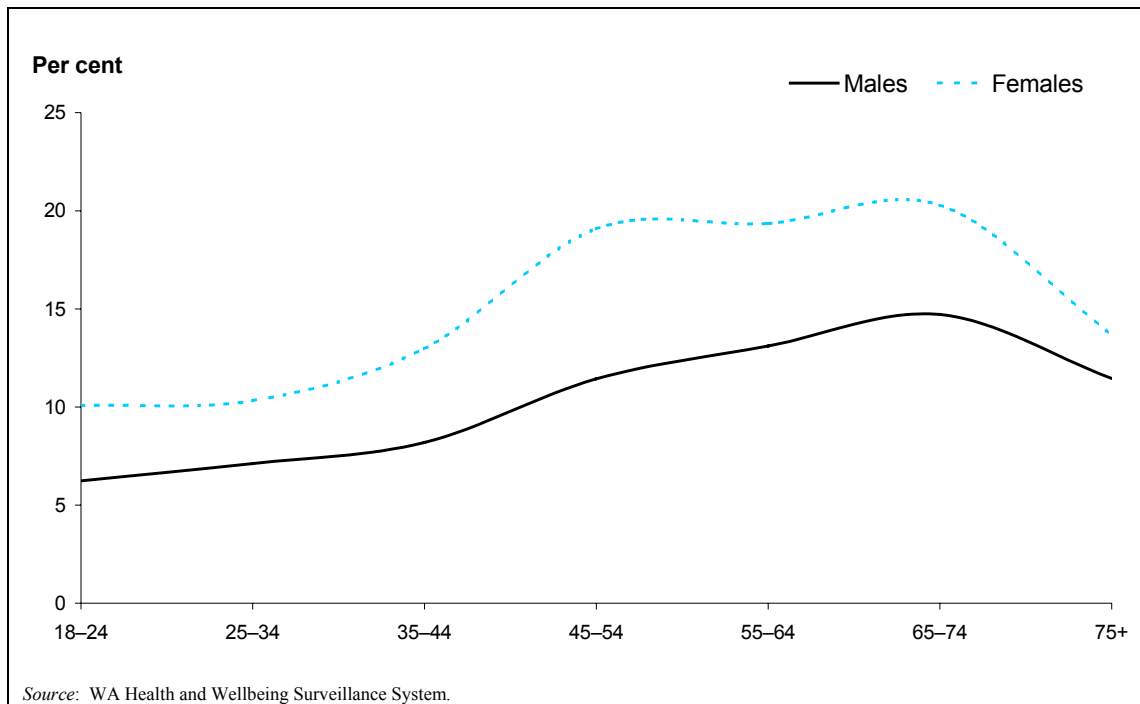
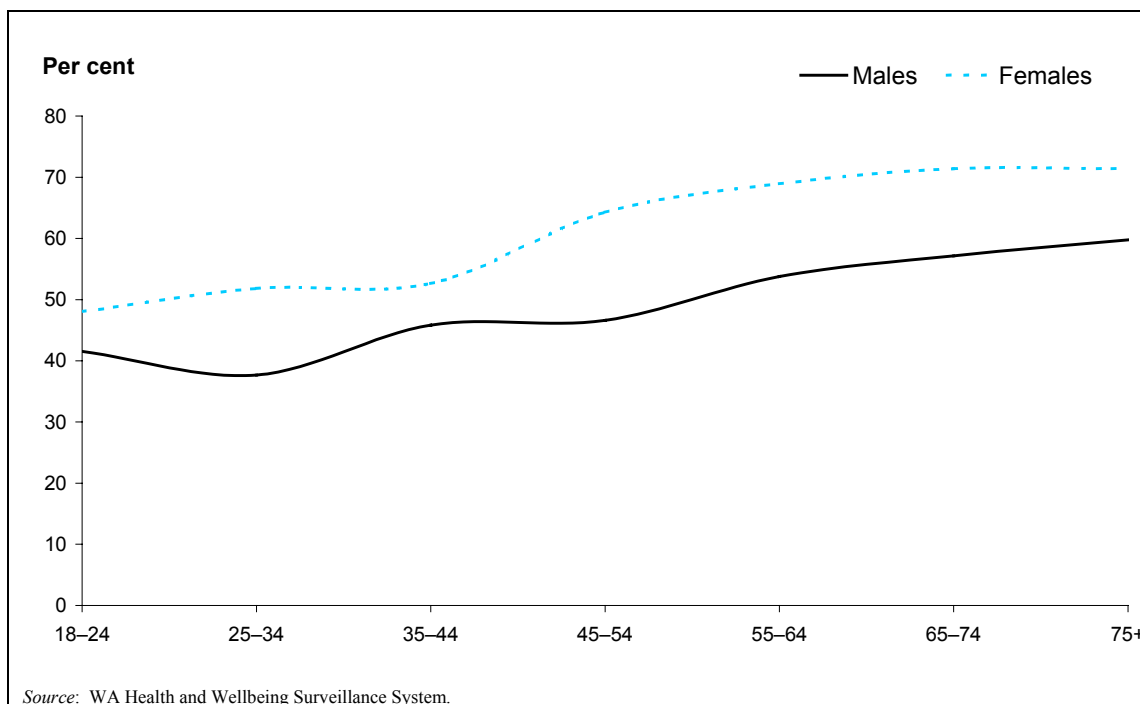


Figure 7: Proportion of Western Australians eating two or more serves of fruit per day by age, 2002–04



Smoking

- **Incidence:** In 2004, 22.4% of WA males and 17.5% of WA females reported being current smokers. This represented a considerable decline in the proportion of males and females who were current smokers in 1989–90 (30.3% and 24.4% respectively).⁸ The proportion of males and females who smoke on a regular basis declines with age, after peaking at around 45 years for males and 25 years for females.
- **Hospitalisations:** In 2001, there were an estimated 12,700 tobacco-cause hospitalisations in WA, accounting for almost 80,000 bed days.
- **Mortality:** Between 1983 and 2001, an estimated 29,000 deaths were attributed to smoking in WA.⁹ This equated to an average of around 1,400 deaths per year.
- **Burden of disease:** In 2000, tobacco smoking was responsible for almost 13,700 years of life lost, 5,400 years lived with a disability and represented 8.6% of the total disease burden in WA.
- **Costs:** In 1998–99, the social cost of tobacco use in WA was estimated at almost \$1.5 billion. Around 45% of these costs were avoidable.
- **Aboriginality:** Aboriginal Australians were considerably more likely to smoke in 2001 than their non-Aboriginal counterparts, with around 51% of those aged 18 years and over reporting current smoking status. By comparison, 24% of non-Aboriginal Australians reported that they were current smokers.⁴
- **Metropolitan/non-metropolitan:** In 2004, WA males aged 18 years and over from non-metropolitan areas of the State were more likely to be current smokers (25.0%), compared to their counterparts from metropolitan areas (21.7%). Females living in non-metropolitan areas were also more likely to be current smokers than females from metropolitan areas, at 19.0% and 17.0% respectively.

Programs

QuitWA is a major public health campaign designed to reduce the incidence of smoking and decrease the number of current smokers. This program has operated in WA since 1984 and it is estimated that between 1984 and 2000, 450,000 Western Australians successfully quit smoking.¹⁰

For further information go to <http://www.quitwa.com/>

Figure 8: Current smokers by year and sex, persons aged 18 years and over, WA, 2000–2004

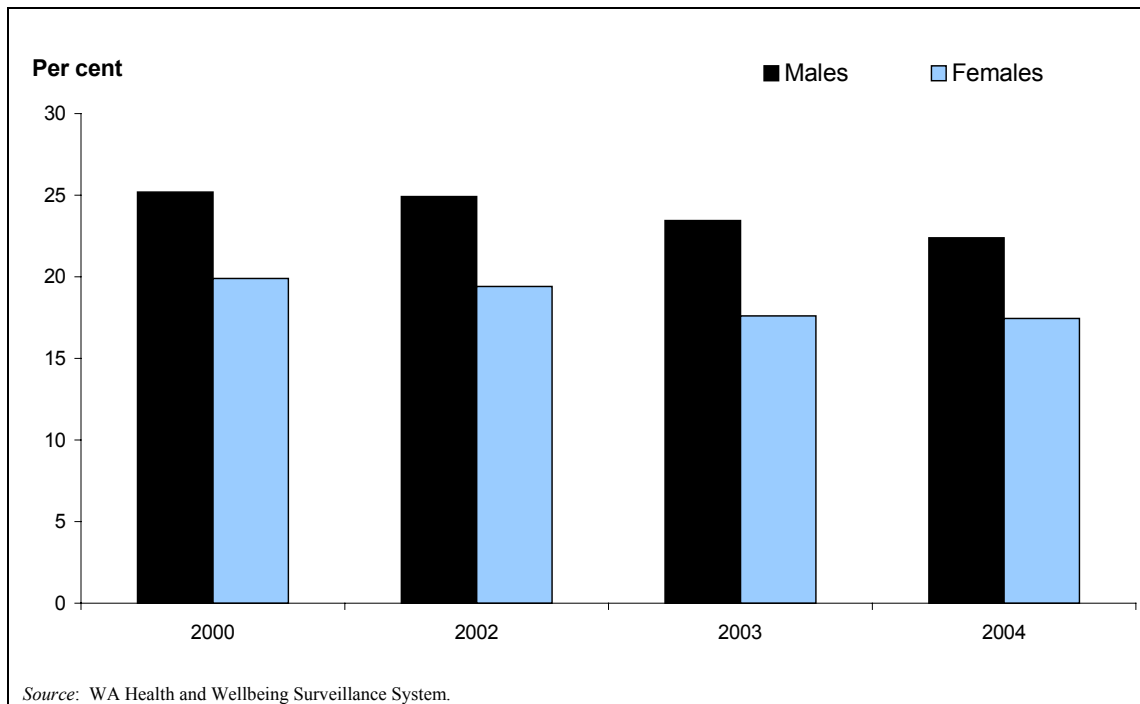
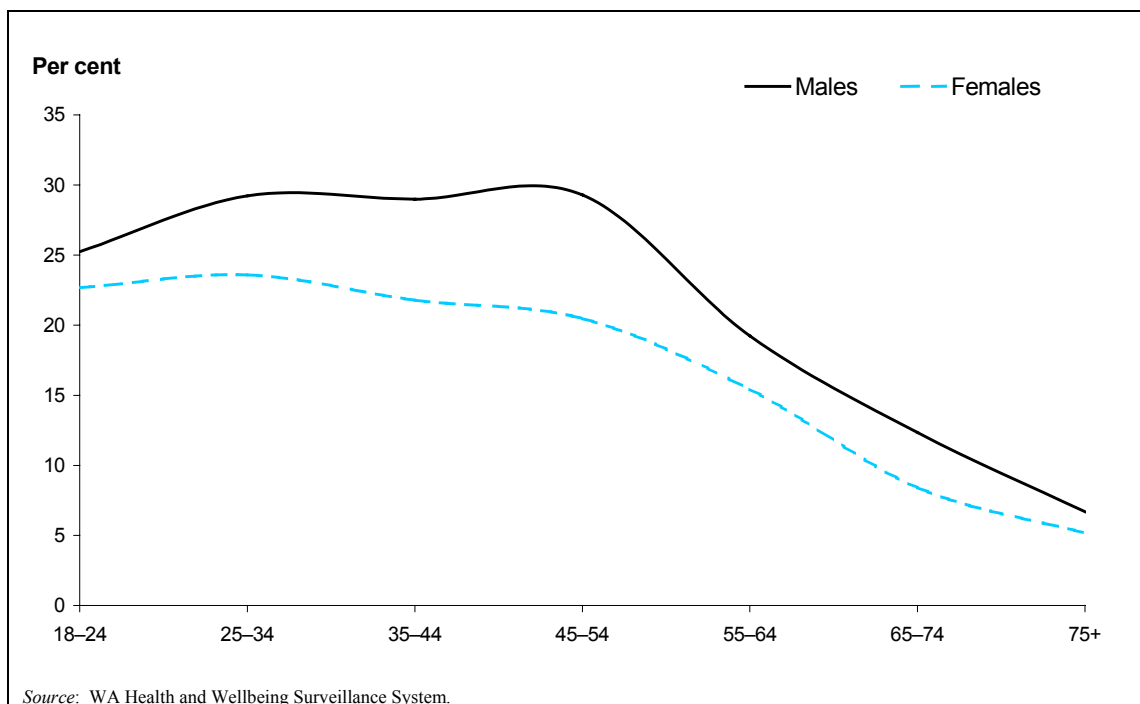


Figure 9: Current smokers by age group and sex, persons aged 18 years and over, WA, 2002–04



Risky Drinking

- **Incidence:** In 2004, around 21% of males and 20% of females in WA drank alcohol at risky/high risk levels. The proportion of those who drank at risky/high risk levels was greatest among younger age groups (and decreased with age). Males and females aged 25–34 years recorded the highest proportion drinking at risky/high risk levels (48.5% and 58.6% respectively).
- **Mortality:** While the consumption of alcohol at risky/high risk levels may result in adverse health effects, consumption at low risk levels can have a protective effect for a number of common diseases such as hypertension, cardiovascular disease and stroke. When only the adverse effects are taken into account, there were approximately 7,900 deaths (at an average of 415 deaths per year), attributed to the consumption of alcohol between 1983 and 2001. Conversely, throughout this period, the consumption of alcohol at low levels was estimated to have prevented 9,600 deaths, at an average of 505 deaths per year. It should be noted that these deaths were primarily averted among older persons and were related to moderate drinking only.
- **Burden of disease:** The consumption of alcohol at risky/high risk levels was responsible for almost 6,700 years of life lost, 5,600 years lived with a disability and represented 5.5% of the total disease burden in WA in 2000.
- **Costs:** The tangible costs of alcohol use throughout Australia with respect to crime, health, lost production in the workplace and in the home, together with road accidents, was estimated to be in excess of \$5,688 million in 1998–99.¹¹
- **Aboriginality:** Many recent surveys have shown that Aboriginal Australians are less likely to drink alcohol than their non-Aboriginal counterparts. However, those who do drink are more likely to drink at risky/high risk levels. The 2001 NHS indicated that 42% of Aboriginal adults had consumed alcohol in the week prior to the survey, compared to 62% of non-Aboriginal adults.⁴
- **Metropolitan/non-metropolitan:** The proportion of males aged 18 years and over drinking alcohol at risky/high risk levels was similar among those from metropolitan and non-metropolitan areas in 2004, at 21.2% and 22.0% respectively. However, a higher proportion of females from non-metropolitan areas drank alcohol at risky/high risk levels (23.7%) compared to their metropolitan counterparts (19.2%).

Programs

The *Enough is Enough* campaign is an alcohol education program run by the Drug and Alcohol Office (DAO). The program aims to reduce public drunkenness and provides support for safer drinking environments. DAO also runs treatment for support for those with dependence problems.

For further information go to WWW.dao.health.wa.gov.au

Figure 10: Risky/ high risk drinking by sex, persons aged 18 years and over, WA, 2000–2004

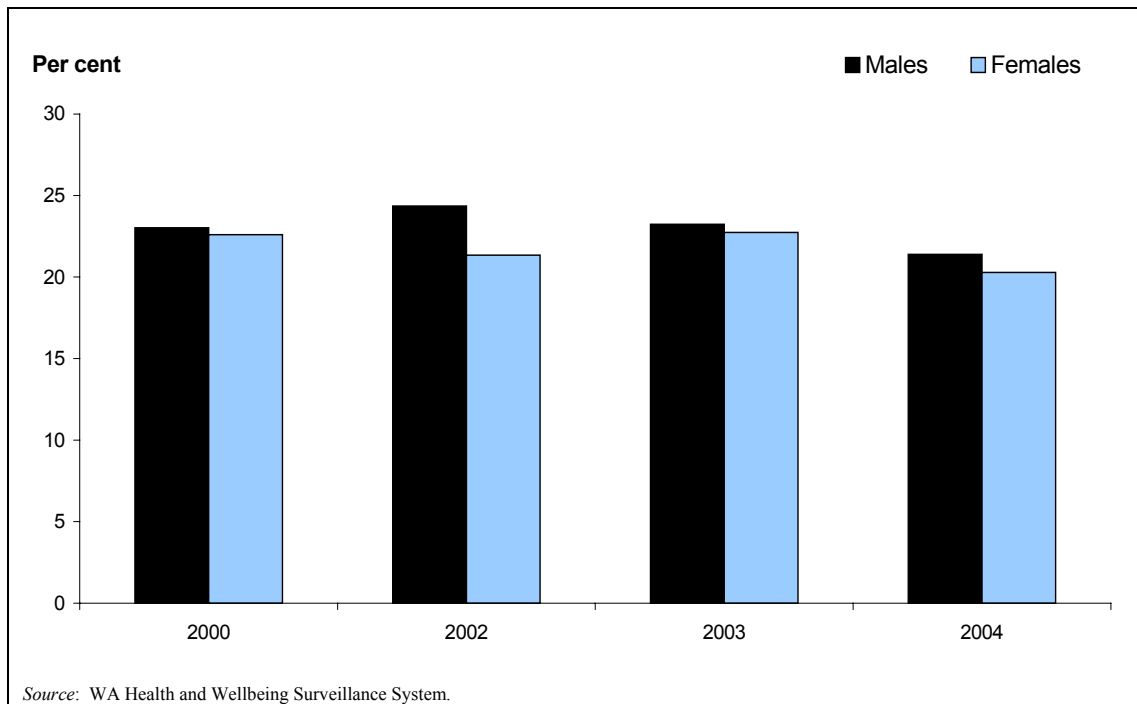
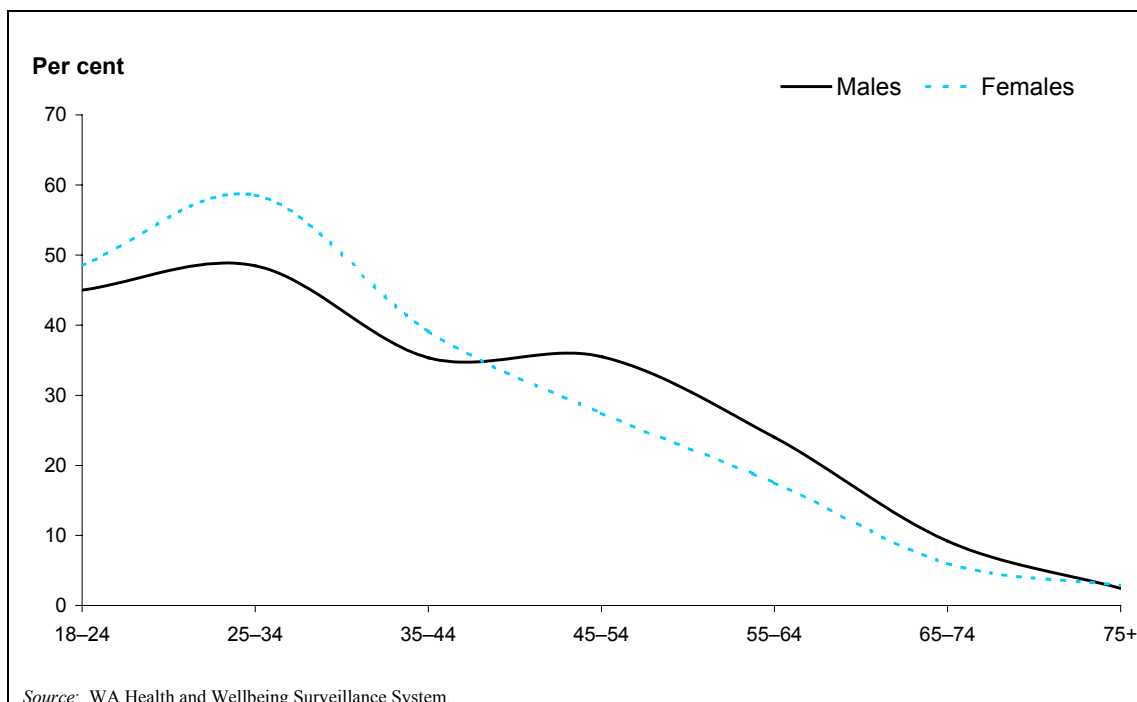


Figure 11: Risky/high risk drinking by age and sex, persons aged 18 years and over, WA, 2002–04



Physical inactivity

- **Prevalence:** In 2004, around 65% of males and 59% of females in WA aged 18–64 years met the *Active Australia* recommended guidelines for physical activity (150 minutes of leisure-time physical activity per week). Of those aged 18–24 years, 79% of males and 71% of females met the guidelines for adequate physical activity, with the proportions falling with age.
- **Burden of disease:** In 2000, physical inactivity was attributed to 7,843 years of life lost, 3,066 years lived with a disability, and was responsible for around 5% of the total disease burden in WA.
- **Metropolitan/non-metropolitan:** Among males aged 18–64 years in 2004, those from metropolitan areas were more likely than males from non-metropolitan areas to have undertaken sufficient physical activity in the past week (65.5% and 61.2% respectively). For females aged 18–64 years, there was little difference in the proportions reporting sufficient physical activity among those from metropolitan (59.1) and non-metropolitan (59.2) areas.

Programs

The *Find Thirty* campaign, first launched in 2002, aims to increase the proportion of Western Australians undertaking a healthy level of physical activity. A key part of the campaign is to provide simple suggestions of how to incorporate thirty minutes of moderate-intensity physical activity throughout the day. Evaluation of this campaign revealed that 41% of those surveyed have, or intend to, increase their level of physical activity as a result of the campaign.¹²

For further information go to www.find30.com.au

Figure 12: Sufficient physical activity by sex, persons aged 18–64 years, WA, 2002–2004

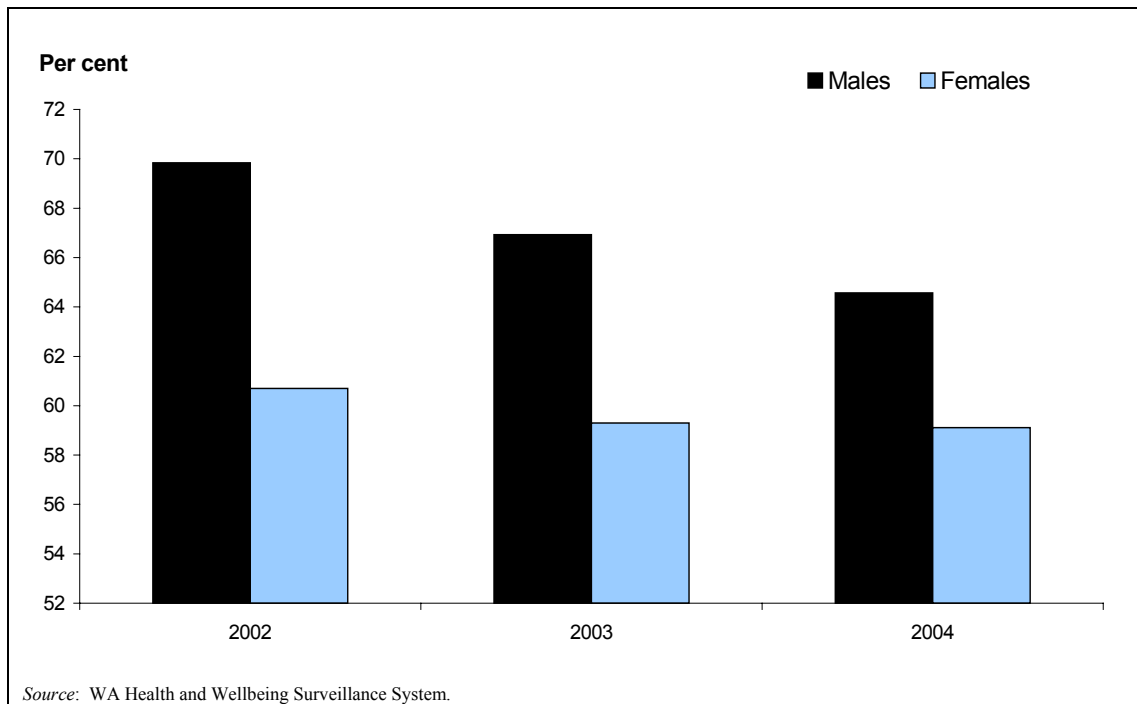
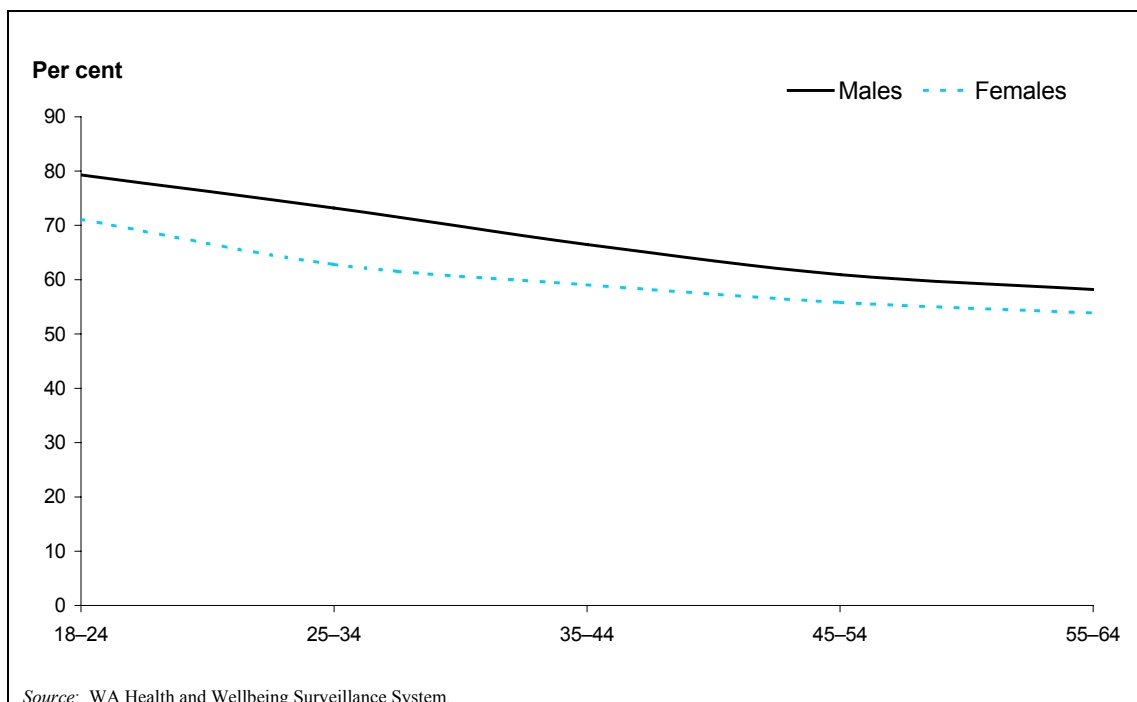


Figure 13: Sufficient physical activity by age and sex, persons aged 18–64 years, WA, 2002–04



Excess weight

- **Incidence:** The proportion of males and females in WA who were overweight or obese increased between 2000 and 2004. In 2000, around 38% of females and 52% of males were classified as overweight or obese. By 2004, this had increased to 44% and 60% respectively.
- **Burden of disease:** In 2000, obesity was attributed to 4,321 years of life lost, 4,337 years lived with a disability, and was responsible for 3.9% of the total disease burden in WA.
- **Costs:** Overweight and obesity places a burden on the health care system due to physical and psychological health problems. Other costs associated with overweight and obesity include decreased productivity due to absenteeism in the workplace and mortality costs.
- **Aboriginality:** The 2001 NHS indicated that Aboriginal Australians aged 15 years and over were more likely to be either overweight or obese than their non-Aboriginal counterparts (61% and 48% respectively).⁴

Programs

In WA, there are a number of programs designed to encourage people to change their behaviours in ways that will enhance their health, while having the added bonus of reducing their weight. Programs such as *Go for 2 and 5* and *Find Thirty* promote healthy eating and taking more exercise, both of which play a key role in weight loss.

Figure 14: Proportion of those overweight or obese by sex, persons aged 18 years and over, WA, 2000–2004

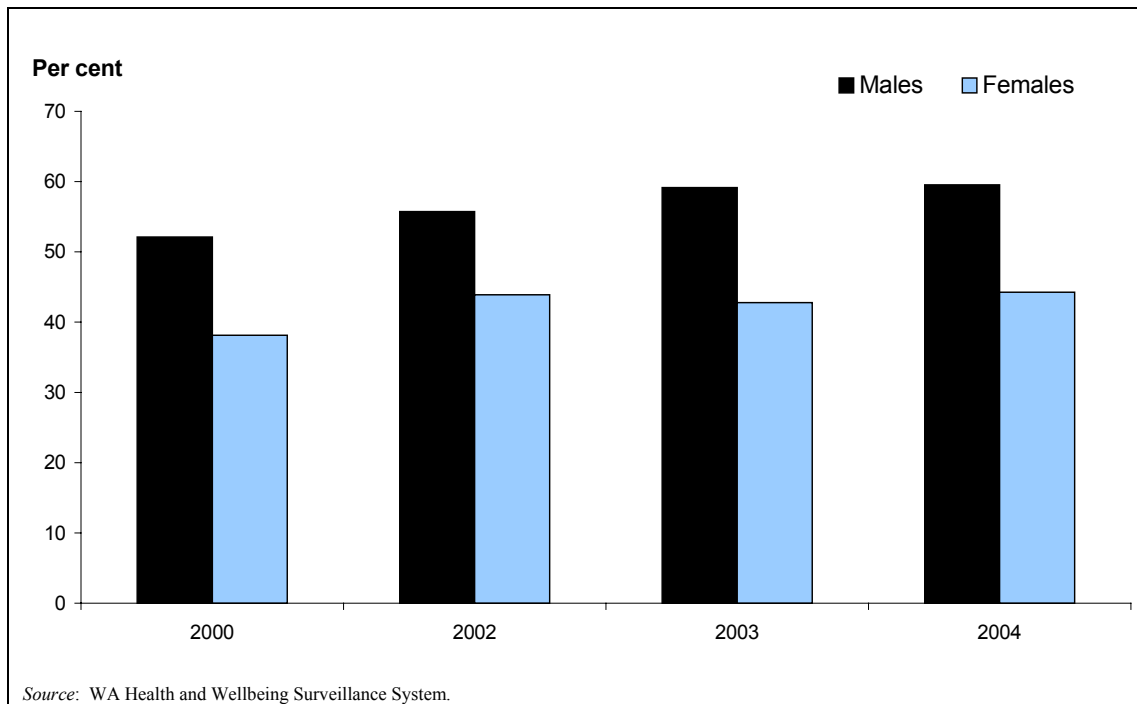
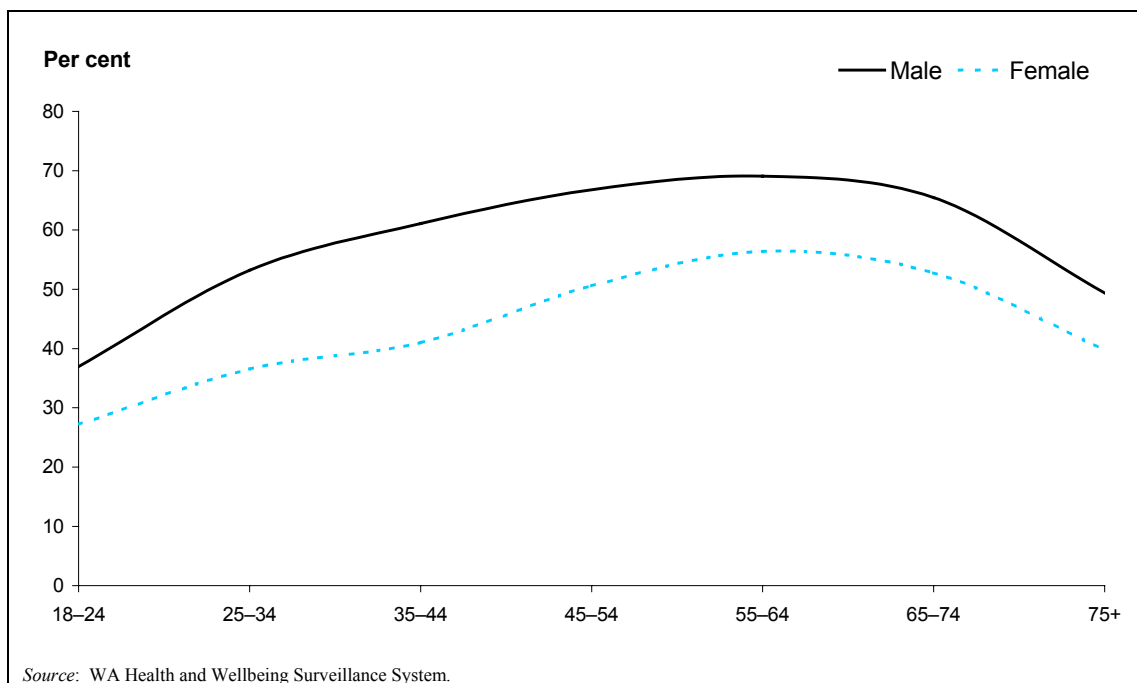


Figure 15: Proportion of those overweight or obese by age and sex, persons aged 18 years and over, WA, 2002–04



Notifications

- **Notifications:** There are more than 60 communicable diseases in WA that notifiable under the requirements of the Health Act (1911). In 2003, there were 13,295 communicable disease notifications. This was around 10% higher than overall levels recorded in each of the previous three years. Increases in genital chlamydia and Ross River virus infections explained the majority of the increase recorded over 2002 levels. Genital chlamydia was the most commonly notified disease in 2003 (3,762 cases, representing 28% of all notifications), followed by campylobacter infection, gonorrhoea and hepatitis C (HCV).
- **Hospitalisations/mortality:** In 2002, infectious diseases in WA accounted for 13,858 hospitalisations and 367 deaths (3.4% of all deaths). Clearly, however, the vast majority of infectious disease episodes do not result in hospitalisation or death.
- **Aboriginality:** For most notifiable diseases, Aboriginal Western Australians face a significantly higher risk of infection than non-Aboriginal Western Australians. The following examples indicate the ratio of age-standardised notification rates for selected diseases in Aboriginal compared to non-Aboriginal people in 2003.
 - *Campylobacter* infection:2 times;
 - Genital chlamydia infection: 15 times;
 - Gonococcal infection:63 times;
 - Hepatitis A:4 times;
 - Hepatitis B:7 times;
 - Hepatitis C:4 times;
 - Meningococcal disease:.....3 times;
 - Pertussis (whooping cough): 1 times;
 - Pneumococcal infection:4 times;
 - *Salmonella* infection:.....9 times;
 - Tuberculosis:3 times.

Table 1: Twelve most frequently notified communicable diseases in WA, 2003

Disease	Number	% of all cases
Genital chlamydia	3,762	28.3
Campylobacter infection	1,975	14.9
Gonorrhoea	1,454	10.9
Hepatitis C	1,309	9.8
Giardiasis	772	5.8
Ross River virus infection	659	4.9
Influenza	616	4.6
Salmonella infection	614	4.6
Hepatitis B	464	3.5
Cryptosporidiosis	437	3.3
Pertussis	255	1.9
Syphilis	163	1.2

Source : WA Notifiable Infectious Diseases Database

Enteric infections

- **Notifications:** As in previous years, campylobacteriosis, giardiasis and salmonellosis were the most frequently notified enteric pathogens, comprising 83% of all enteric diseases notified in 2003. However, notifications of all three organisms decreased in 2003.

The notification rate for salmonellosis in the Kimberley region was ten times the overall state rate in 2003. A similar (or greater) rate differential was seen for giardiasis, cryptosporidiosis, hepatitis A and shigellosis, but not for campylobacteriosis, which has a more homogeneous rate across the state. The higher rates in the Kimberley (and to a lesser extent in other northern regions) reflect higher rates of enteric infection in Aboriginal people.

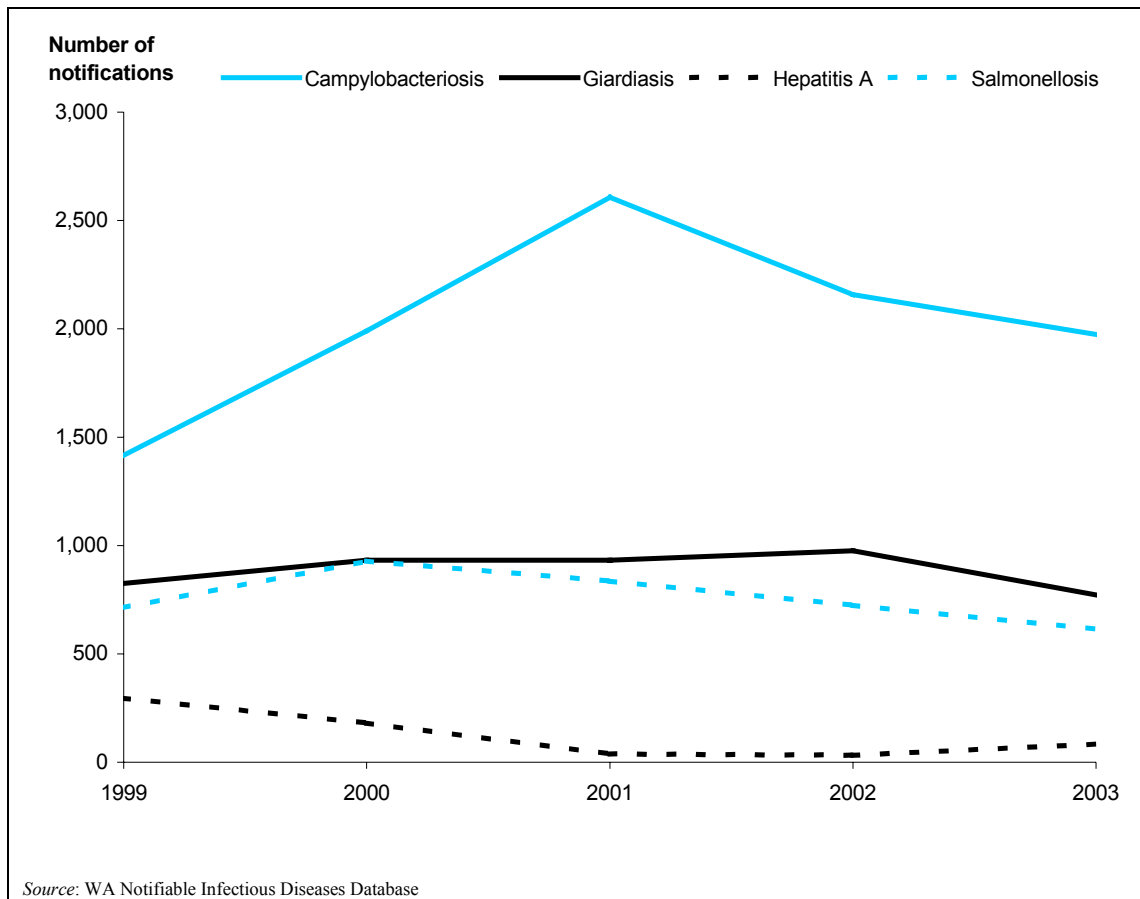
Since 2000, *Salmonella* notifications have declined steadily each year, and similarly *Campylobacter* notifications decreased by 24% between 2001 and 2003. To some extent, these decreases are attributable to reduced overseas travel, particularly to South-East Asia, following the Bali bombing and other terrorist activity.

Relative to 2002, **hepatitis A** notifications increased 162% in 2003, to 84 cases. However, notifications in 2001 and 2002 were at historically low levels, following a period of increased activity in the latter part of the 1990's. The increase in notifications in 2003 was largely attributed to cases in the regions north of Perth.

Programs

There are a wide range of programs managed by both State and Local Government that impact on the incidence of enteric diseases, including sewage management, hygiene education, provision of safe food and water supplies, and case investigation and outbreak management. However, a range of factors beyond the control of government, including personal hygiene and climate, impact on rates for these diseases.

Figure 16: Annual number of notifications for selected enteric diseases, WA, 1999–2003



Vaccine preventable diseases

- **Incidence:** There were no confirmed cases of measles reported in WA in 2003 or 2002, and there has been no endemic measles virus circulating in WA since 1998. All 41 confirmed measles cases in the period March 1999 to the end of 2003 were either in overseas visitors, WA residents returning from overseas, or in small clusters linked directly to cases imported from overseas.

Similarly, the incidence of rubella has remained low since 1999, with only three confirmed cases notified in each of 2001, 2002 and 2003, with most of these resulting from infection acquired overseas. Only one case of congenital rubella has been reported in WA in recent years, with this case also associated with an overseas-acquired infection.

The successful elimination of measles and rubella in WA followed a comprehensive vaccination program in primary school-aged children in 1998, sustained high levels of vaccine coverage in young children, targeted vaccination of young adults, and intensified efforts to detect all cases and prevent further transmission.

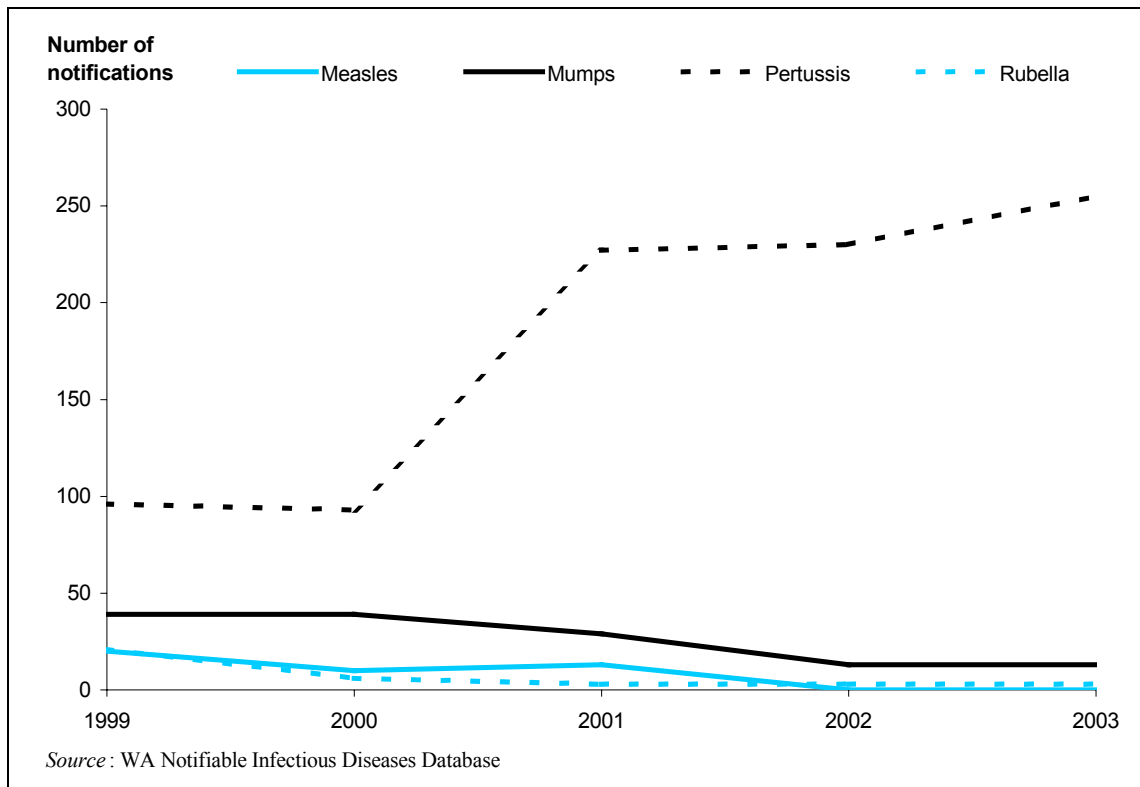
The incidence of mumps remained steady at 13 cases in each of 2002 and 2003, falling from 39 cases in 2000.

Pertussis (whooping cough) notification rates have been relatively low in WA, compared to other Australian jurisdictions, since the last large pertussis epidemic in WA in 1997. However, there has been a large pertussis epidemic in WA in 2004, with around 1,300 notifications until the end of October (data not shown). Pertussis vaccines do not produce long-lasting immunity, making periodic epidemics inevitable.

Programs

The successful elimination of measles and rubella in WA followed a comprehensive vaccination program in primary school-aged children in 1998, sustained high levels of vaccine coverage in young children, targeted vaccination of young adults, and intensified efforts to detect all cases and prevent further transmission.

Figure 17: Annual number of notifications for selected vaccine-preventable diseases, WA, 1999–2003



Sexually transmissible infections

- **Incidence:** There was a 23% increase in the number of notified cases of genital chlamydia in 2003, continuing the strong upward trend over the period 1999-2003. This trend is similar to that seen in other States and Territories. Notification rates in 2003 were considerably higher in the Kimberley, Pilbara and Goldfields regions compared to other parts of the state, largely reflecting the much higher rates in Aboriginal people.

Aside from a large increase in notifications in 2000, which were related to commencement of laboratory notification, the number of reported cases of gonorrhoea has remained relatively stable over the period 2000-2003. The notification rate for gonorrhoea was 20 times higher in the Kimberley region than the overall state rate in 2003, with intermediate rates in the Goldfields and Pilbara regions. As for chlamydia, these large rate differentials reflect the much higher incidence of disease in Aboriginal people, compared to non-Aboriginal people, in these regions.

There was a marked decline in the number of cases of infectious syphilis (primary and secondary cases) reported in 2003 (17 cases) compared with 2002 (55 cases). Over half these cases were reported from the Kimberley region, and the decline may be related to control of a syphilis outbreak in that region. Notifications of non-infectious syphilis increased slightly in 2003, but remained well above levels in 1999 and 2000. The increase in notifications in the period 2001-2003 reflects an upsurge of cases detected in the Kimberley region, which contributed 59% of the state's total cases in 2003.

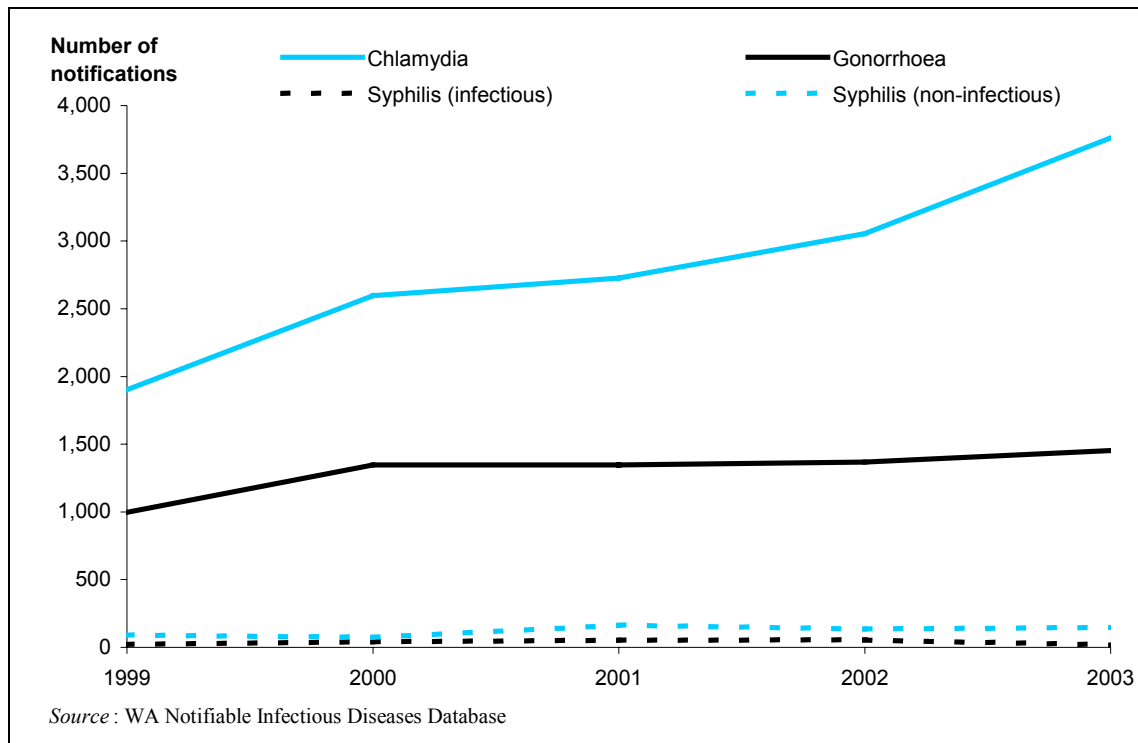
The number of donovanosis notifications declined from 10 cases in 2001, when a new diagnostic test was introduced, to one case in 2003. This decline is at least partly attributed to the National Donovanosis Eradication Program, which commenced in 2001.

Programs

There are many services that provide information, advice, assessment and treatment in relation to sexual health issues and sexually transmissible diseases in WA. Many of these services are provided by non-government organisations, with assistance from the State Government. General practitioners manage the majority of sexually transmissible infections. The Departments of Health and Education have recently developed new sexual health curriculum material for schools.

Communicable diseases Sexually transmissible infections

Figure 18: Annual number of notifications for selected sexually transmissible infections, WA, 1999–2003



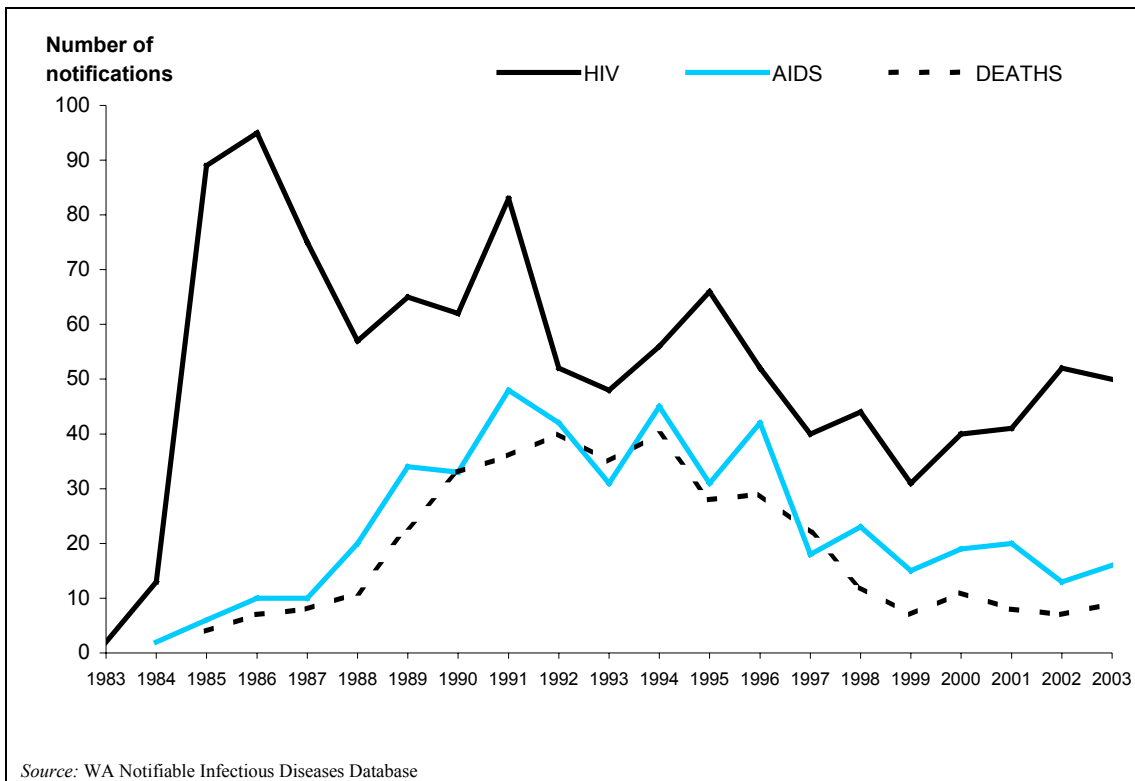
HIV/AIDS

- **Notifications:** A cumulative total of 1,113 new diagnoses of HIV infection have been recorded in WA residents in the period from the emergence of HIV/AIDS in 1983 to 2003. Annual notifications peaked in 1986, and reached a low plateau in the latter part of the 1990's, before a modest rise in 2002 and 2003. Overall, 88% of notified HIV cases are males and 11% females, although females comprised an increased 19% of cases notified in the period 1999-2003.

Injecting drug use remains an infrequent cause of HIV transmission in WA, with this risk factor associated with 4% of cases in 1999-2003. The proportion of case associated with male homosexual or bisexual exposure has declined from 75% of cases in the period 1983-1998, to 55% of cases in the period 1999-2003. Conversely, the proportion of heterosexually acquired cases increased from 15% to 38% of notified cases over the same period.

- **Mortality:** The number of deaths in persons infected with HIV has declined steadily from a peak of 40 cases in 1994, to less than 10 cases in each year since 2000. This change is also associated with improved treatments for HIV/AIDS.
- **Metropolitan/non-metropolitan:** Most persons (94%) notified with HIV infection live in the Perth metropolitan area.
- **Aboriginality:** Although the annual number of cases notified in Aboriginal people is small and variable, the proportion has increased from 4% of cases notified prior to 1999, to 12% of cases in the 5-year period 1999-2003.

Figure 19: Annual number of HIV/AIDS notifications and number of deaths in persons with HIV infection, WA, 1983–2003



Blood-borne viral infections

- **Notifications** of chronic and unspecified hepatitis C infection increased by 12% in 2003, relative to 2002. The 55% increase in notifications received in 2000 compared to 1999 was an artefact, related to improved ascertainment following the inclusion of laboratory-notified cases in surveillance data for the first time. The proportion of newly acquired hepatitis C infections has fluctuated between 10-12% of total hepatitis C notifications in the period 2001-2003, and the absolute number of newly acquired cases has remained relatively stable.

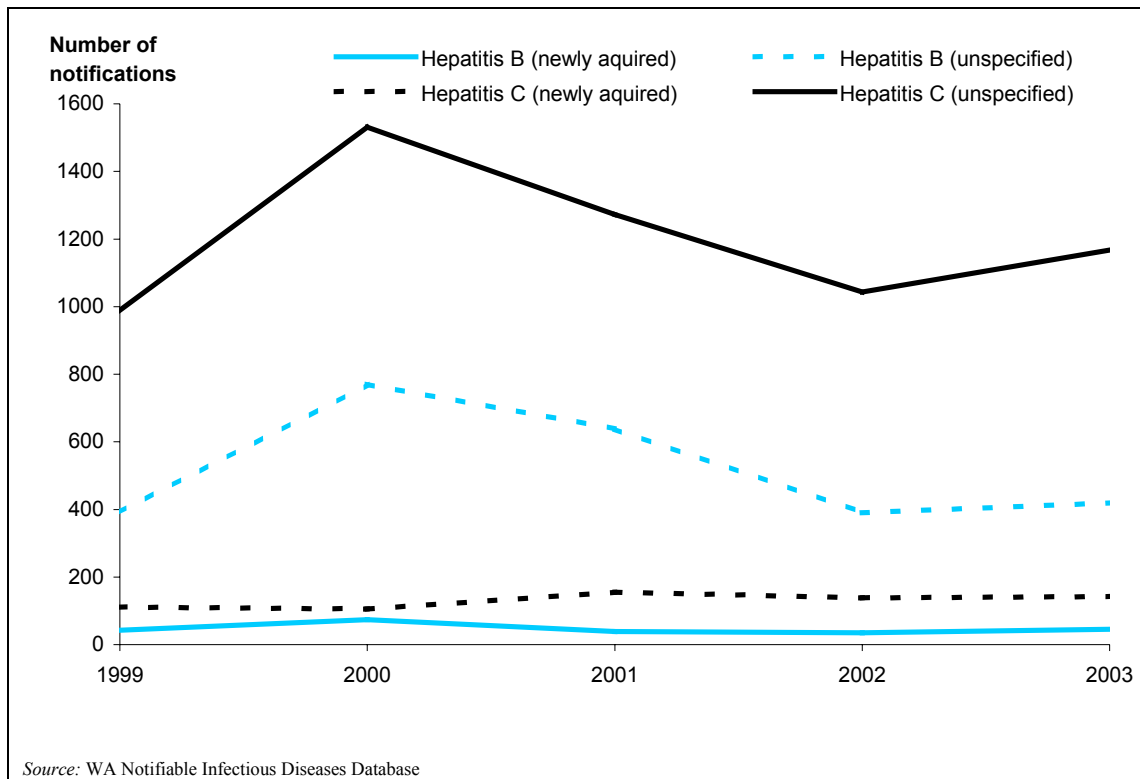
Notifications of chronic and unspecified hepatitis B infection increased by 97% in 2000 compared with 1999, related to inclusion of laboratory notifications for the first time, after which the number of cases declined annually before rising slightly in 2003 (by 7%). The proportion of newly acquired hepatitis B infection remained fairly stable between 1999 and 2003, comprising between 8–10% of total hepatitis B cases, except for 2001 where they comprised 6% of cases.

Around 90% of new cases of hepatitis C are related to injecting drug use.

Programs

There is a range of programs that provide education, advice, assessment and treatment for persons susceptible to or infected with blood-borne viruses. For hepatitis B, vaccination is now routine in infants and in year 7 school students, as well as in other defined risk groups, and over future years this will significantly reduce the incidence of infection. For hepatitis C, there are a range of needle and syringe programs, including sale through retail pharmacies and free exchange services that provide sterile equipment for injecting drug users. Many of these programs are provided by non-government agencies, with assistance from the State and Australian Governments.

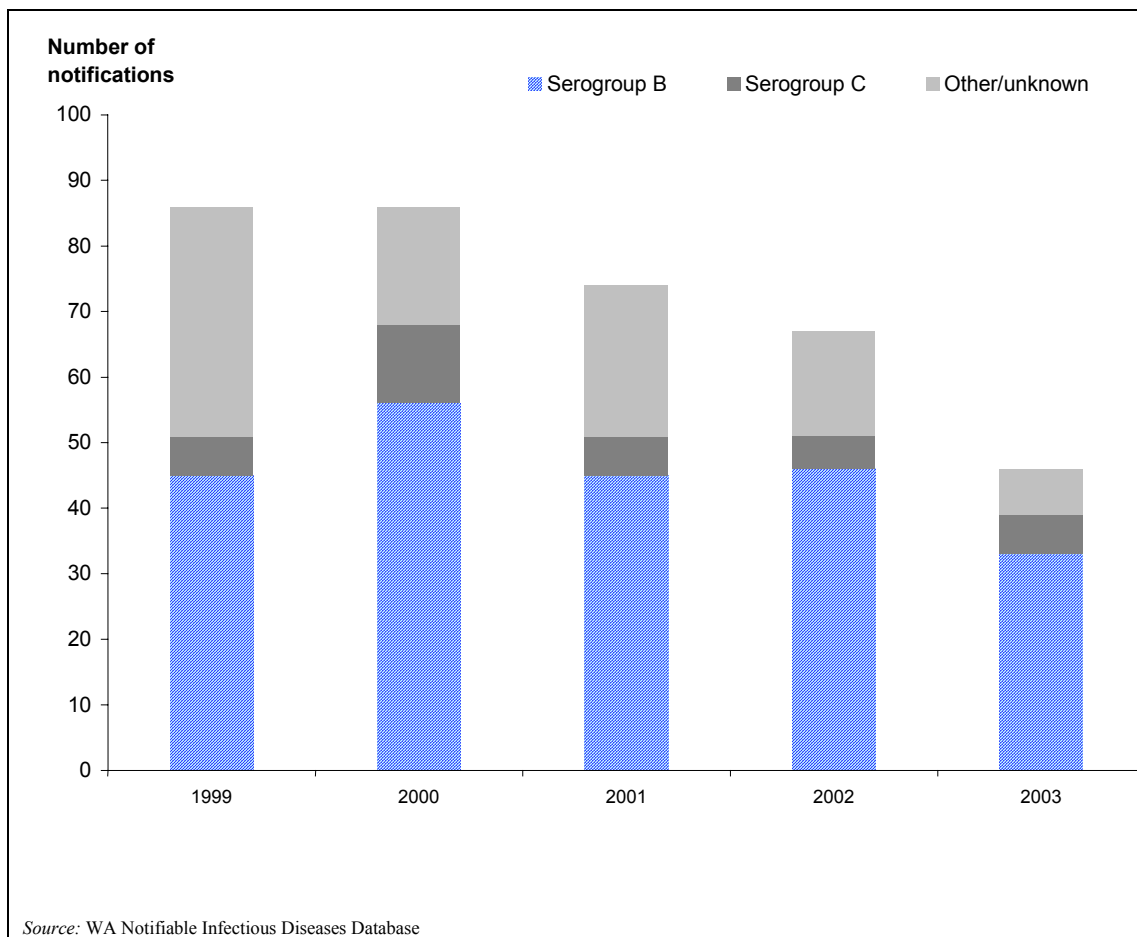
Figure 20: Annual number of notifications for Hepatitis B and Hepatitis C, WA, 1999–2003



Other notifiable diseases of special interest

- **Influenza:** Influenza became a notifiable disease in 2001, with 234 cases reported. The number of notifications more than doubled in 2002, followed by a further increase in 2003, with 616 reported cases (97% type A and 3% type B). The influenza season in 2003 was relatively late and intense, with almost all cases reported in August and September.
- **Legionella infection:** Notifications of legionellosis increased by 55% between 2001 and 2003, to 65 cases. Of these, 83% of cases were identified as *L. longbeachae* and 11% as *L. pneumophila*. All cases of *L. pneumophila* infection were sporadic, and cases of *L. longbeachae* infection occurred predominantly in middle aged and elderly people with histories of exposure to gardening soils and mulches in the period before onset of illness.
- **Meningococcal disease:** There was a 31% decrease in notifications for meningococcal disease to 46 cases in 2003, continuing the downward trend that commenced in 2001. This followed an increase in notifications in the late 1990s, with a high of 86 cases reported in both 1999 and 2000. Of the 46 cases reported in 2003, serogroup data were available for 40 cases (83% were serogroup B and 15% were serogroup C). There were no deaths from meningococcal disease in WA in 2003.
- **Ross River virus (RRV) disease:** There was a major outbreak of RRV in the latter part of 2003, resulting in the annual total of 659 cases reported, as compared with 128 cases in 2002. RRV activity was concentrated in the Southwest region, where 48% of cases were resident. Factors thought to have contributed to the outbreak included higher rainfall relative to recent years and a build-up of populations of non-immune vertebrate host species such as kangaroos, resulting in amplification of virus numbers in mosquitoes.
- **Tuberculosis:** Notifications have remained steady since a decrease in 2001. Of the 63 cases notified in 2003, 85% of those infected were born overseas.

Figure 21: Number of meningococcal disease notifications by year and serogroup, WA, 1999–2003.



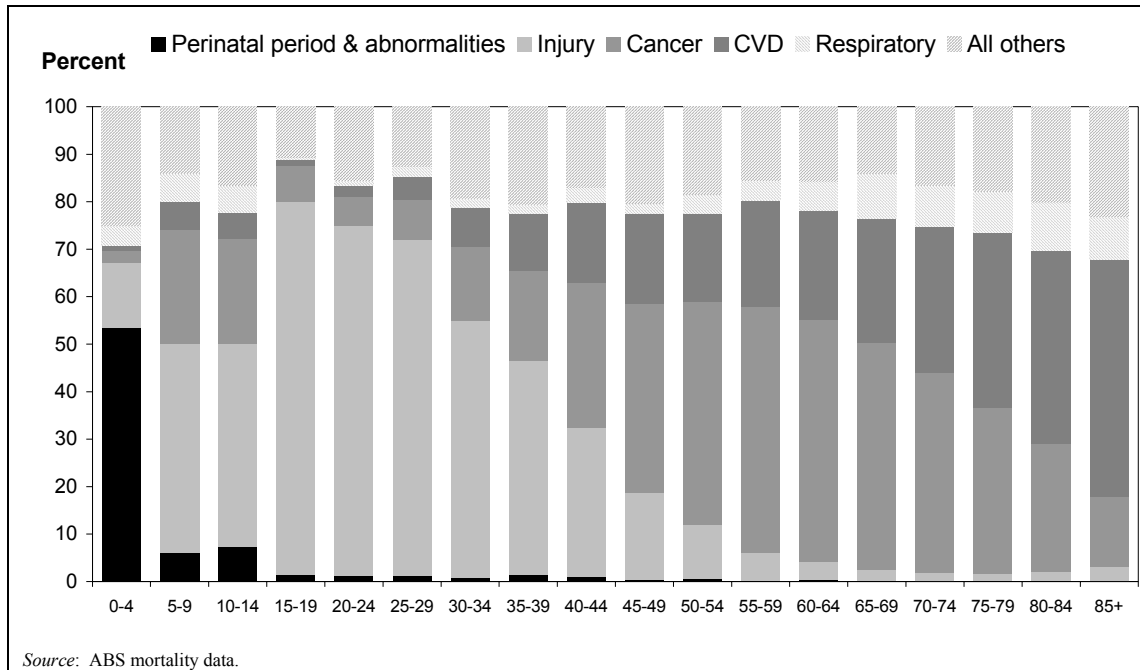
Introduction

The National Health Priority Areas (NHPA) initiative was Australia's response to the World Health Organisations (WHO) report on health reform: *Health for all in the 21st century*.

These diseases are among the most prevalent, costly and preventable of all health problems, accounting for almost 75% of the total disease burden in WA.

For further information go to www.health.gov.au/pq/nhpa/

Figure 22: Leading causes of death by age, WA, 2002



Diabetes

- **Prevalence:** Among people aged 18 years and over, 5.0% of males and 4.8% of females reported that they had diabetes in 2004. Males and females aged 65–74 years reported the highest prevalence rates for diabetes at 30.8% and 24.8% respectively.
- **Hospitalisations:** In 2003, WA males recorded a separation rate for asthma of 3.3 separations per 1,000 persons, while WA females recorded a rate of 2.9 separations per 1,000 persons.
- **Mortality:** In 2002, there were 138 male and 150 female deaths attributed to diabetes in WA. This equates to 20.8 deaths and 14.9 deaths per 100,000 persons respectively.
- **Burden of disease:** In 2000, diabetes in WA was responsible for 511 years of life lost, 5,692 years lived with a disability, and a total disease burden (DALY) of 6,204 years.
- **Costs:** It was estimated in 2002, that the cost burden associated with diagnosed Type 2 diabetes in Australia was around \$3 billion per year, with an average cost per person of \$5,360. In addition, an average of \$5,540 per person was paid in government subsidies in the form of pensions and sickness benefits, resulting in a total average cost per person of \$10,900.¹³

In 2003, hospital costs for diabetes in WA totaled \$19.2 million.

- **Aboriginality:** Aboriginal Australians were more likely to report diabetes (17%) than their non-Aboriginal counterparts (12%) in 2001. This was noted across all age groups, with those aged 55 years and over experiencing the highest prevalence. By comparison, the highest prevalence among non-Aboriginal persons was recorded by those aged 15–24 years.⁴

Programs

The Western Australian Department of Health recognises the importance of diabetes due to the burden that it places on the community and introduced a statewide integrated Diabetes Program in 2001. The program focuses on integrating primary, secondary and tertiary care for diabetics and has a coordinator in each health region/area throughout the state.¹⁴

Under the *WA Diabetes Strategy*, the Department of Health works with key partners to educate people about diabetes prevention and helps people with diabetes to manage their condition.

For more information go to www.diabetes.health.wa.gov.au

Figure 23: Diabetes prevalence by sex, persons aged 18 years and over, WA, 2000–2004

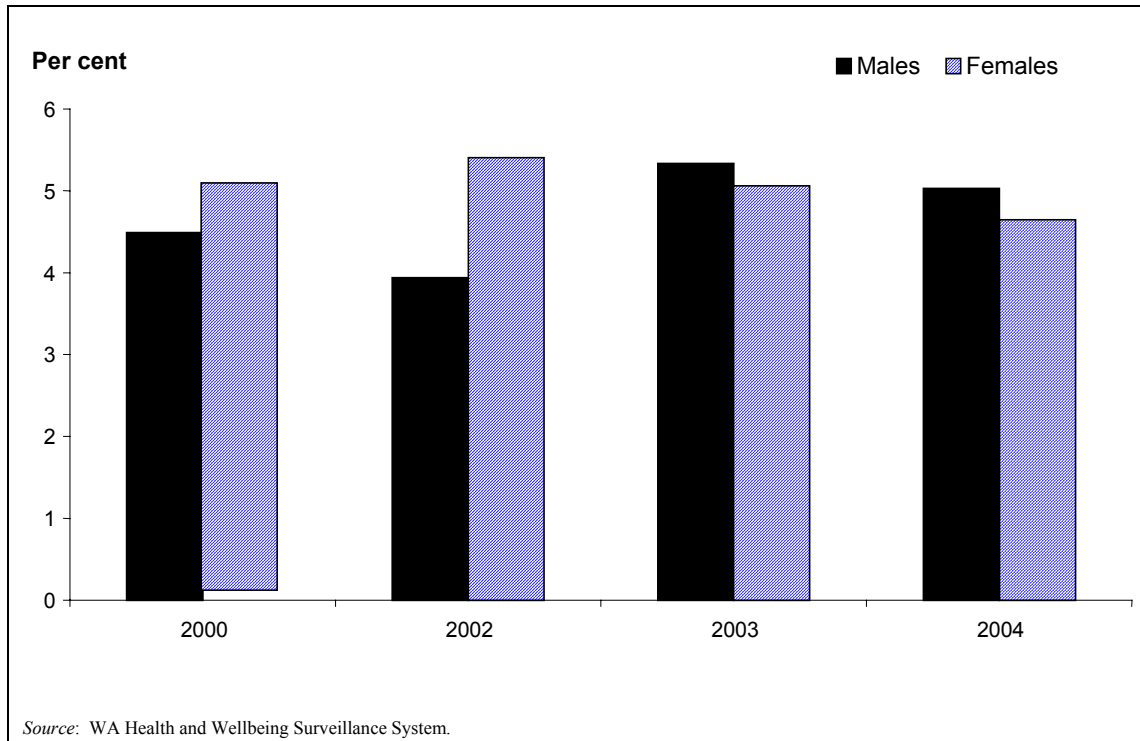
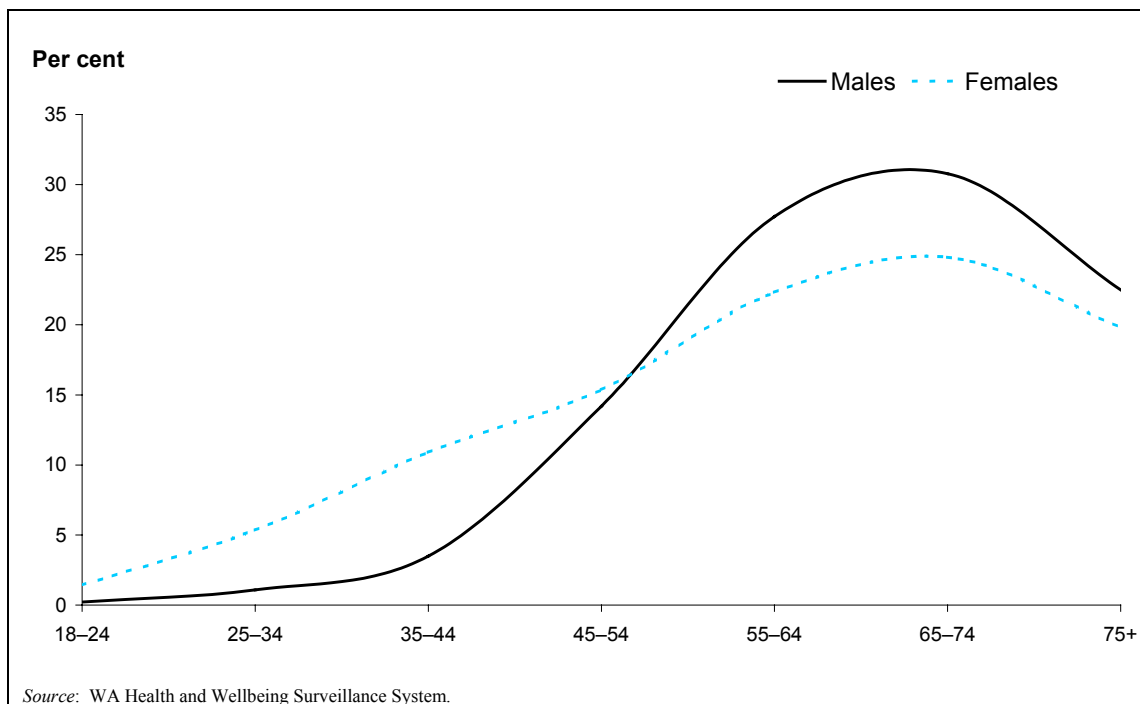


Figure 24: Diabetes prevalence by age and sex, WA, 2002–04



Coronary heart disease

- **Hospitalisations:** There were a total of 11,285 hospital separations (6.1 per 1,000 persons) in WA for coronary heart disease in 2003, with almost 66% occurring among males. This equates to an annual cost of approximately \$52.3 million.
- **Procedures:** The rate of coronary artery bypass grafting (CABG) procedures conducted in WA increased between 1989 and 1993 before falling steadily. This fall was due primarily to an increase in percutaneous coronary intervention (PCI) procedures that occurred throughout the 1990s. Unlike CABG procedures which aim to bypass a blockage, PCI procedures are less invasive, and aim to either widen the blocked artery, or remove the blockage altogether.
- **Mortality:** In 2002, there were a total of 1,929 deaths as a result of coronary heart disease in WA (110.4 deaths per 100,000 persons). Between 1983 and 2002, mortality rates for coronary heart disease fell significantly among both males and females, by an average of 4.9% and 4.1% per year respectively. Males in WA have consistently recorded higher mortality rates for coronary heart disease than WA females. In 2002, mortality rates for males were 64% higher than females, at 142 deaths and 86 deaths per 100,000 persons respectively.
- **Burden of disease:** CVD, including coronary heart disease was the leading cause of disease burden in WA in 2000, accounting for 16.5% of the total burden. CVD was attributed to approximately 30,000 years of life lost, 6,600 years lived with a disability, and a total disease burden (DALY) of 36,600 years.
- **Costs:** In 1996, it was estimated that the total value of DALYs lost due to coronary heart disease throughout Australia was \$15.6 billion. This was calculated at a rate of \$50,000 per DALY. In addition, it was further estimated that, on average, each hospital admission for coronary heart disease cost approximately \$6,500 per admission (year 2000 dollars). This figure included all medical, drug and other costs. The total cost for these hospitalisations in 1996 was around \$1 billion.¹⁵ Hospital costs for all CVDs in WA in 2003 were approximately \$142 million.
- **Aboriginality:** Aboriginal people in WA were around 50% more likely to die as a result of coronary heart disease and two and a half times more likely to have been admitted to hospital for coronary heart disease than their non-Aboriginal counterparts.
- **Metropolitan/non-metropolitan:** The mortality rate for coronary heart disease in non-metropolitan areas of WA in 2002 was 131 deaths per 100,000 persons. This was slightly higher than the rate in metropolitan areas, at 127 deaths per 100,000 persons. Hospitalisation rates however, were similar at 6.3 and 6.7 separations per 100,000 persons respectively.

Programs

Programs such as *Go For 2 and 5* and *Find Thirty* also have significant benefits for

cardiovascular health and help to reduce the incidence of CVD.

Figure 25: Coronary artery bypass grafting (CABG), & percutaneous coronary intervention (PCI) procedures, WA, 1989–2002

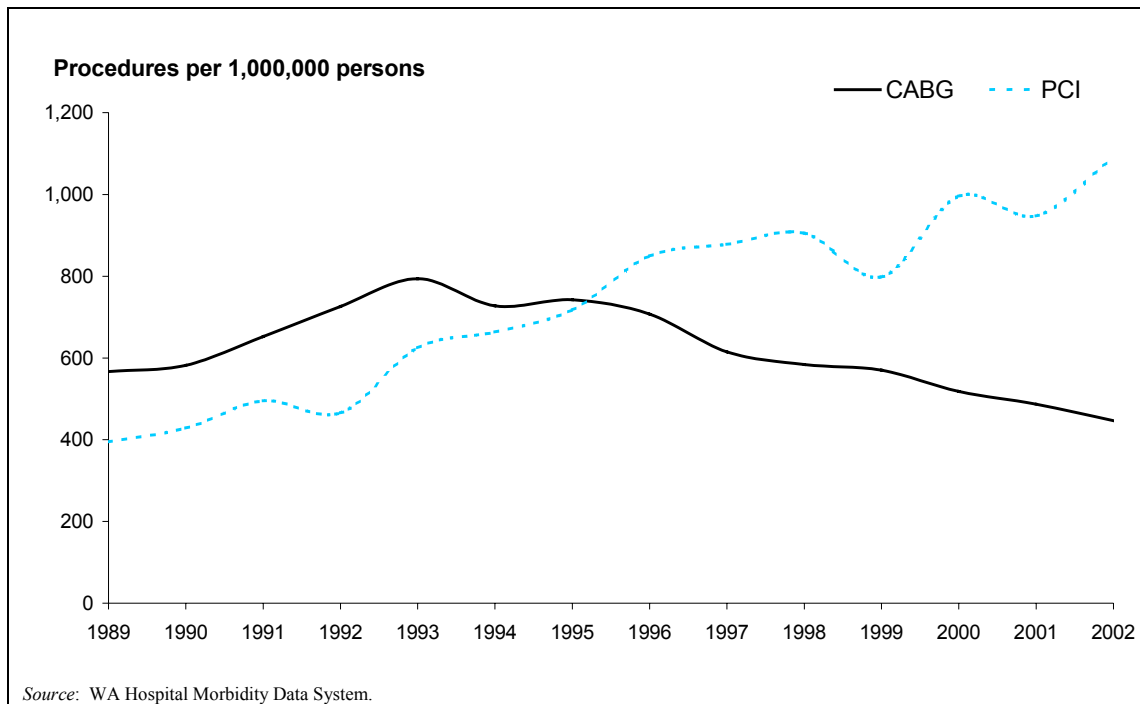
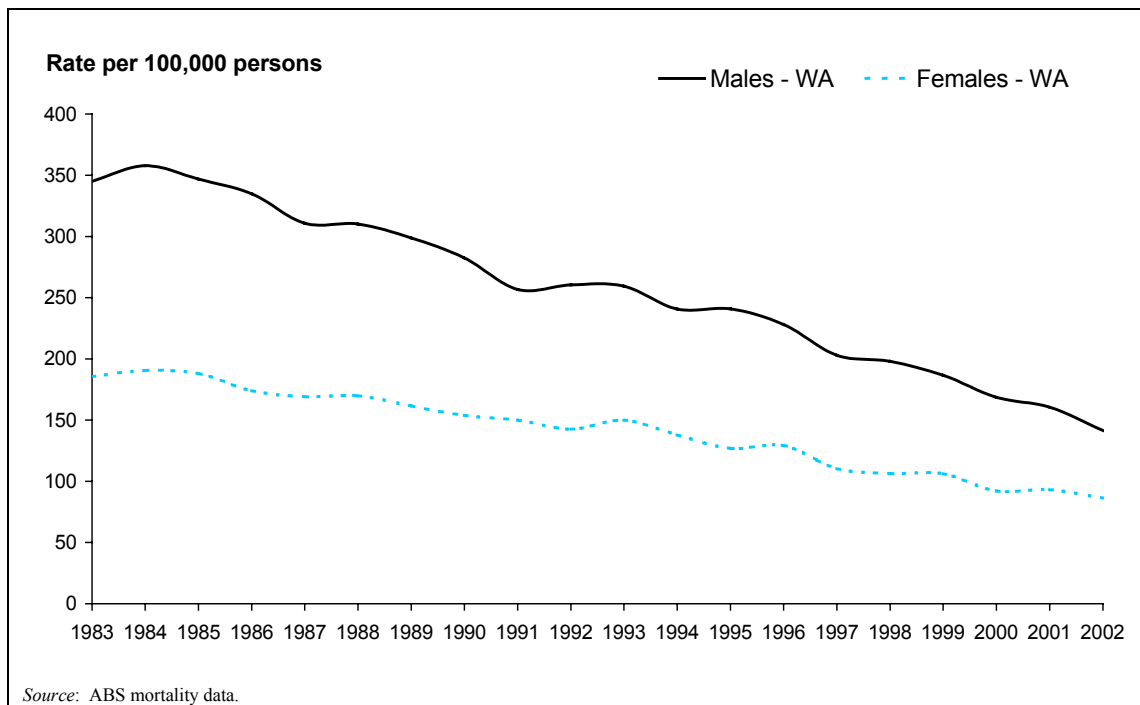


Figure 26: Mortality rate for coronary heart disease by sex, WA, 1983–2002



Stroke

- **Hospitalisations:** There were a total of 3,354 hospital separations for stroke in WA in 2003, at a rate of 2.2 separations per 1,000 persons for males and 1.6 separations per 1,000 persons for females. This equates to an overall cost to the hospital sector of \$1.89 million.
- **Mortality:** In 2002, there were 869 deaths as a result of stroke in WA, of which, 60% were female. However, males recorded a higher mortality rate for stroke than females, at 52.7 deaths and 47.2 per 100,000 persons respectively. Between 1983 and 2002, mortality rates for stroke in WA fell significantly, by an average of 3.5% per year for males and 3.0% for females.
- **Aboriginality:** Mortality rates due to stroke among Aboriginal people in WA were 2.2 times higher than non-Aboriginal Western Australians, while hospitalisation separation rates were twice as high.
- **Metropolitan/non-metropolitan:** Western Australians from non-metropolitan areas of the State recorded slightly higher mortality rates for stroke than residents of metropolitan areas, at 62.4 deaths and 57.2 deaths per 100,000 persons respectively. Hospitalisation rates were also slightly higher in non-metropolitan areas (2.3 separations per 1,000 persons) than metropolitan areas (1.9 separations per 1,000 persons).

Figure 27: Hospital separation rate for stroke by sex, WA, 1988/99–2003

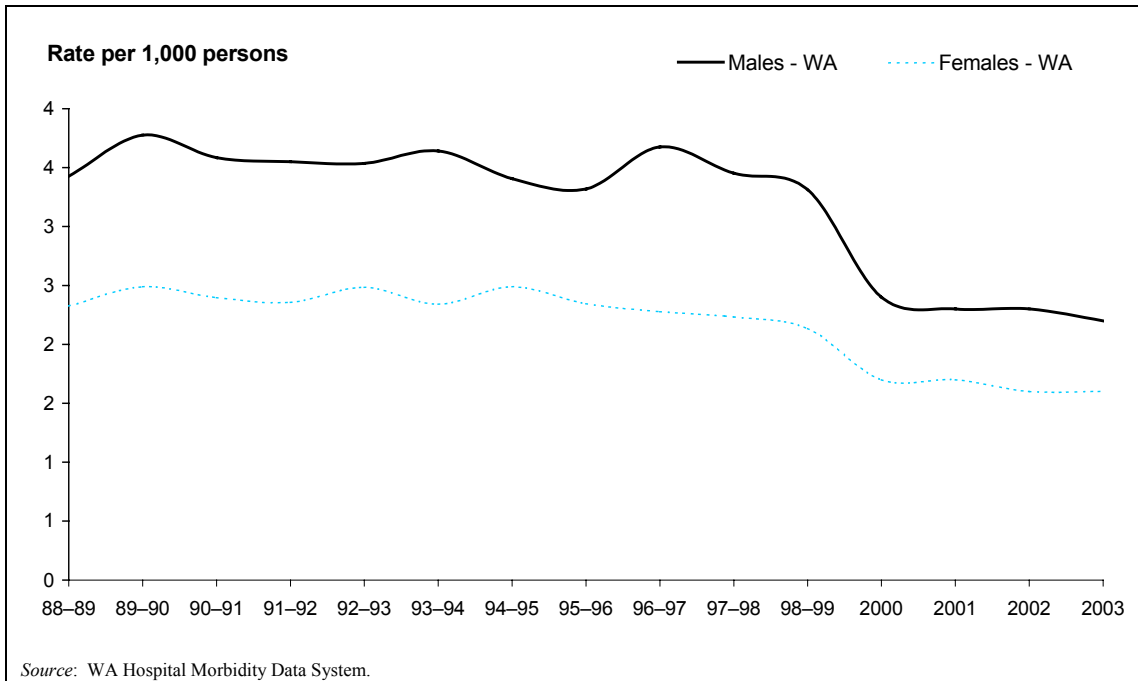
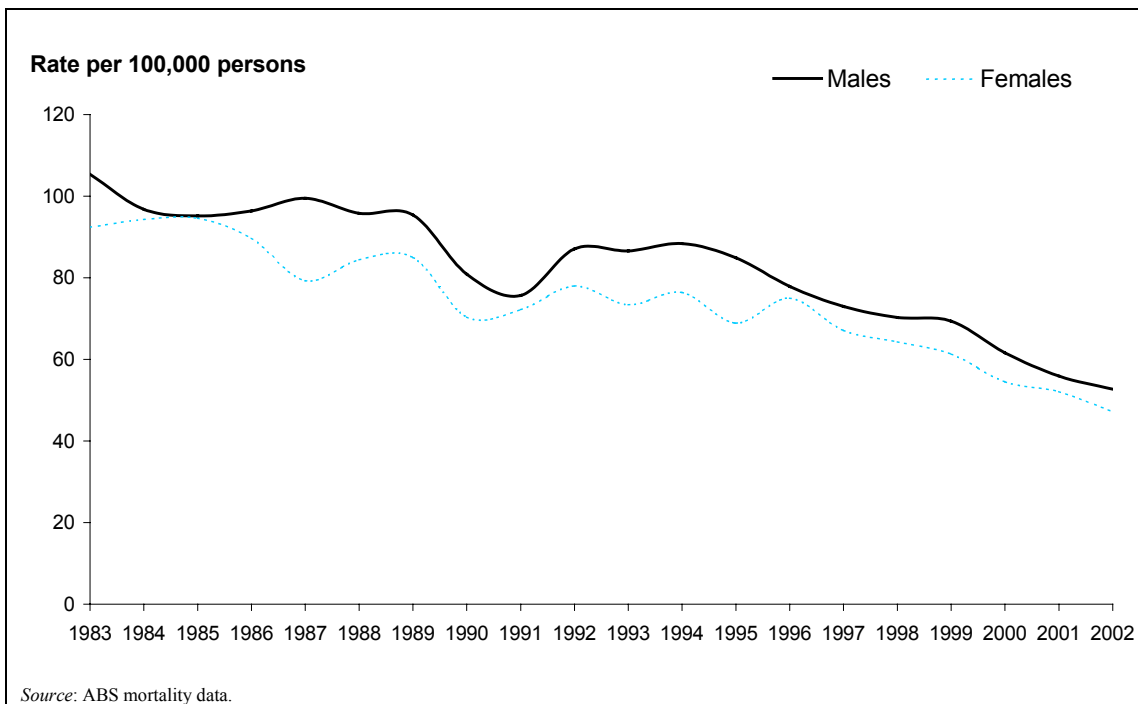


Figure 28: Mortality rate for stroke by sex, WA, 1983–2002



Injury and poisoning

- **Hospitalisations:** There were 37,715 hospital separations for injury and poisoning in WA in 2003, 58% of which were male. This equates to a separation rate of 22.8 and 16.1 separations per 1,000 persons for males and females respectively. There was a significant average annual increase in hospital separations for injury and poisoning of 0.1% for males and 0.5% for females reported between 1993–04 and 2003–04.
- **Mortality:** There were a total of 699 deaths resulting from injury and poisoning in WA in 2002, of which 64% occurred among males. Overall, males recorded a mortality rate of 50.0 deaths per 100,000 persons, while females recorded a rate of 24.6 deaths per 100,000 persons. Mortality rates for injury and poisoning in WA fell by an average of 0.7% for males and 0.8% annually between 1983 and 2002.
- **Burden of disease:** In 2000, unintentional injuries accounted for 9,746 years of life lost, 4,268 years lived with a disability, and a total disease burden (DALY) of 14,015 years. This represented 6.3% of the total disease burden throughout WA in 2000.
- **Costs:** The total cost to the Australian health system associated with injury in 2000–01 was \$4.06 billion. This figure included hospital separations, nursing homes, medical services, research and pharmaceuticals.¹⁵ It was estimated in 1996, that the total human cost of road accidents alone cost \$8.4 billion. In WA, the estimated cost of hospitalisations resulting from injuries and poisonings in 2003 was \$118 million.
- **Aboriginality:** Aboriginal Western Australians recorded higher mortality rates for injury and poisoning than non-Aboriginal Western Australians, at 79.1 and 33.4 deaths per 100,000 persons respectively. Hospitalisations were also higher among Aboriginal persons (51.8 separations per 1,000 persons) than their non-Aboriginal counterparts (18.5 separations per 1,000 persons).
- **Metropolitan/non-metropolitan:** Deaths from injury and poisoning were higher among Western Australians living in non-metropolitan areas of the State than those from metropolitan areas in 2003, recording mortality rates of 48.0 and 33.9 deaths per 100,000 persons respectively. Hospitalisation rates were also higher in non-metropolitan areas (26.2 separations per 1,000 persons) than metropolitan areas (17.6 separations per 1,000 persons).

Programs

The *Stay on Your Feet WA* program is an example of the commitment the Department of Health has to reducing injuries throughout the State. While this program is aimed at preventing falls among older people, there are many programs and regulations initiated by the State Government that help to reduce the risks and consequences of accidents. These include such things as regulating blood alcohol levels while driving a vehicle, mandatory pool fencing and the wearing of seatbelts.

Figure 29: Hospital separations for injury and poisoning by age, WA, 2003/04

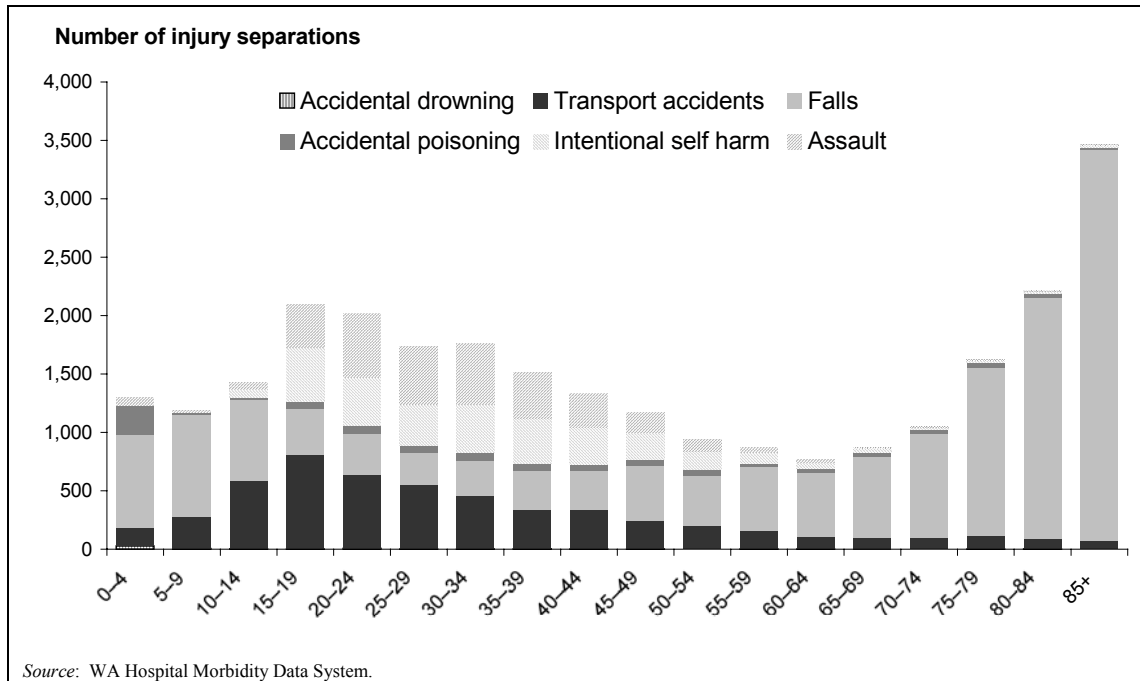
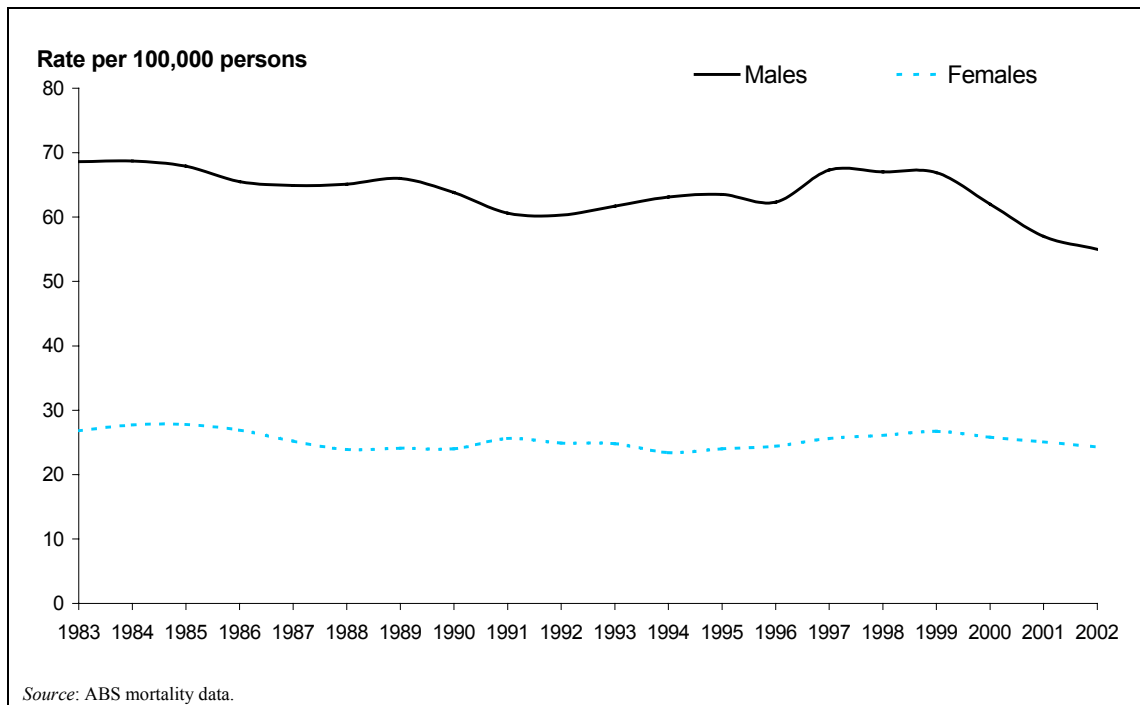


Figure 30: Mortality rate for injury and poisoning by sex, WA, 1983–2002



Mental health

- **Incidence:** In 1997–98, around 19% of Western Australians aged 18 years and over reported experiencing a mental disorder during the previous 12 months. Persons aged 18–24 years reported the highest prevalence (33.5%), with the proportion of those experiencing a mental disorder decreasing with age.¹⁶

Throughout WA in 2003, 7.8% of males and 11.2% of females aged 18 years and over reported experiencing high/very high levels of psychological distress in the previous four weeks, as measured by the Kessler 10 scale (K10).

- **Hospitalisations:** In 2003, mental disorders in WA accounted for 21,358 separations, totalling 214,886 beddays, at a cost of approximately \$65 million.
- **Burden of disease:** In 2000, mental disorders accounted for around 3,109 years of life lost, 32,395 years lived with a disability and represented 16.0% of the total disease burden in WA; third only to cardiovascular diseases (16.5%), and cancers (19.1%).
- **Aboriginality:** Hospital separation rates for mental disorders among Aboriginal people in WA were more than two and a half times higher than their non-Aboriginal counterparts in 2002. There were only four deaths attributed to mental disorders among Aboriginal people in WA in 2002.

Programs

Population health measures to maintain mental health include education, prevention programs, counselling and community based mental health support services such as the *Building Solid Families Program*. This program delivers a comprehensive information and support service for Aboriginal people, particularly those affected by family separation, mental health problems, or who are at risk of self-harm.

Figure 31: Mean Mental Component Scores by age and sex, persons aged 18 years and older, 2002–04

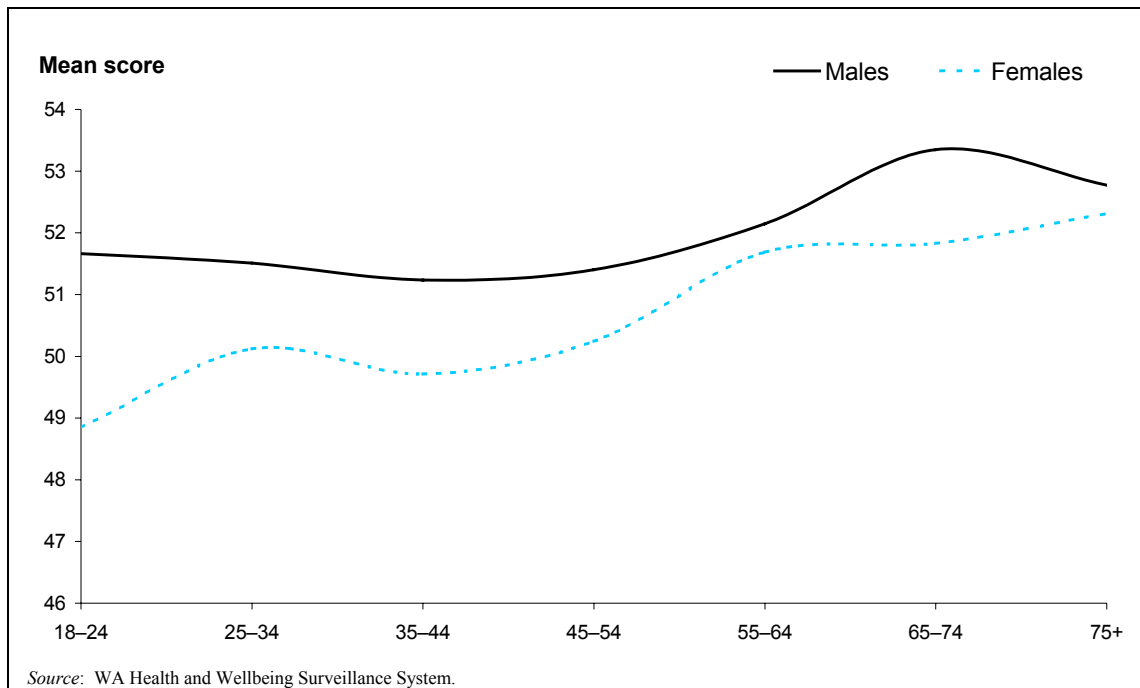
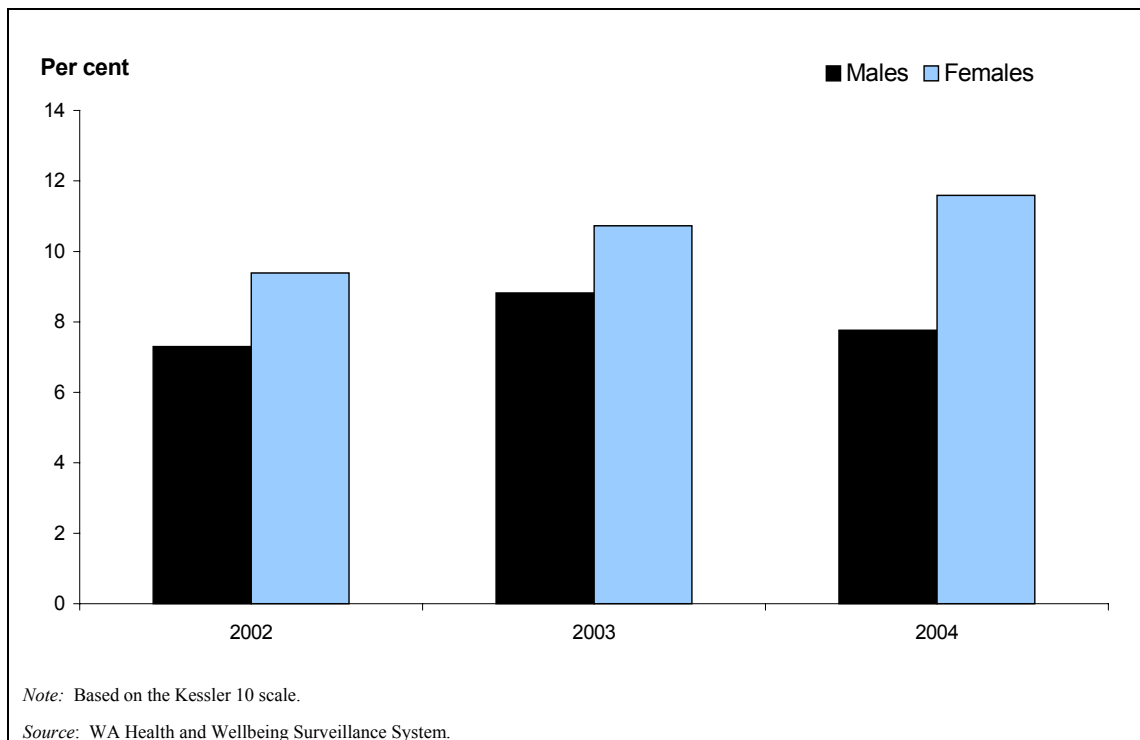


Figure 32: High/very high levels of psychological distress, WA, 2004



Mental health: suicide

- **Hospitalisations:** Although WA females have a lower mortality rate due to suicide than WA males, their rate of hospitalisation due to attempted suicide was higher at 1.8 separations per 1,000 persons compared to 1.1 separations per 1,000 persons for males.
- **Mortality:** There were 230 suicides reported in WA in 2002, of which 77% were males. The mortality rate was 18.5 deaths per 100,000 persons for males and 5.4 deaths per 100,000 persons for females. Suicide rates in WA remained relatively stable among both males and females over the past two decades.

Western Australians aged 25–29 years recorded the highest mortality rates from suicide in 2002, with rates falling consistently to age 65–69 years. From this age on, rates gradually increased, until a much larger increase among those aged 80 years and over.

- **Aboriginality:** Suicide rates were higher among Aboriginal Western Australians than their non-Aboriginal counterparts in 2002, at 13.3 deaths and 10.7 deaths per 100,000 persons respectively.
- **Metropolitan/non-metropolitan:** Suicide rates were higher in non-metropolitan areas of the state in 2002, with mortality rates of 14.1 deaths per 100,000 persons compared to a rate of 11.3 deaths per 100,000 persons in metropolitan areas of the State.

Figure 33: Mortality rate for suicide by sex, WA, 1983–2002

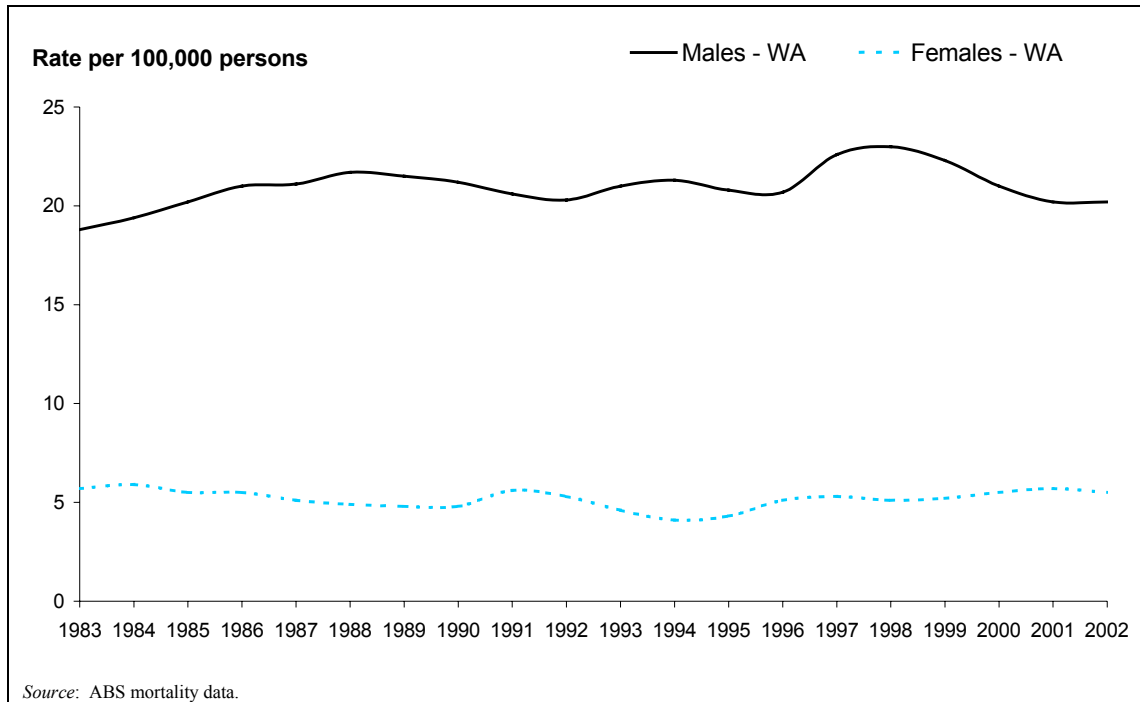
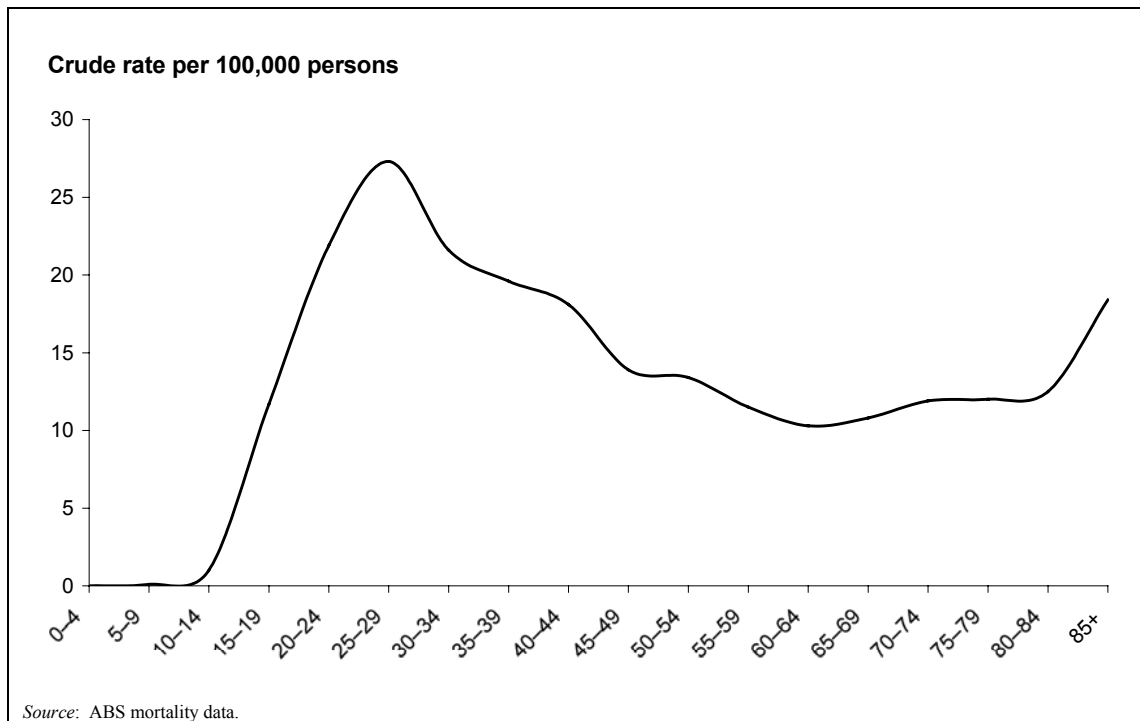


Figure 34: Mortality rate for suicide by age, WA, 2002



Cancer

- **Incidence:** In 2002, around 8,500 new cancer cases were reported throughout the State. This represents a rate of 560 new cases per 100,000 persons for males and 394 new cases per 100,000 persons for females. Over the past decade, cancer incidence rates increased by an annual average of 0.8% for males and 0.5% for females. However, regular screening and improved technology has contributed to this increase.
- **Hospitalisations:** Throughout WA in 2003, there were a total of 4,854 hospital separations for cancer, at a rate of 2.7 and 2.4 separations per 1,000 persons for males and females respectively. This represented a total cost to the health sector of almost \$139 million.
- **Mortality:** There were 3,213 deaths from cancer in WA in 2003, of which 57% were males. Overall, the male mortality rate for cancer was 236 deaths per 100,000 persons, while for females it was 142 deaths per 100,000 persons. From 1983 to 2002, cancer mortality rates for males fell by an average of 0.9% per year. No significant change was reported for WA females.
- **Burden of disease:** Cancer was attributed to 35,451 years of life lost, 6,930 years lived with a disability and, in 2000, was the leading cause of disease burden in WA, accounting for more than 19% of the total burden.
- **Aboriginality:** Mortality rates for cancer were higher among Aboriginal Western Australians than their non-Aboriginal counterparts in 2002, with rates of 229 and 169 deaths per 100,000 persons respectively.
- **Metropolitan/non-metropolitan:** Deaths from cancer were slightly lower among persons from non-metropolitan areas of the State (173 deaths per 100,000 persons) compared to those from metropolitan areas (183 deaths per 100,000 persons).

Programs

There are a number of programs in WA that are aimed either at reducing the risk of contracting cancer or in the case of breast cancer, encourage early detection. Examples include the *WA Cervical Cancer Prevention Program* (WACCPP) and the free mammography services provided by BreastScreen WA.

Figure 35: Incidence rate for all cancers by sex, WA, 1982–2002

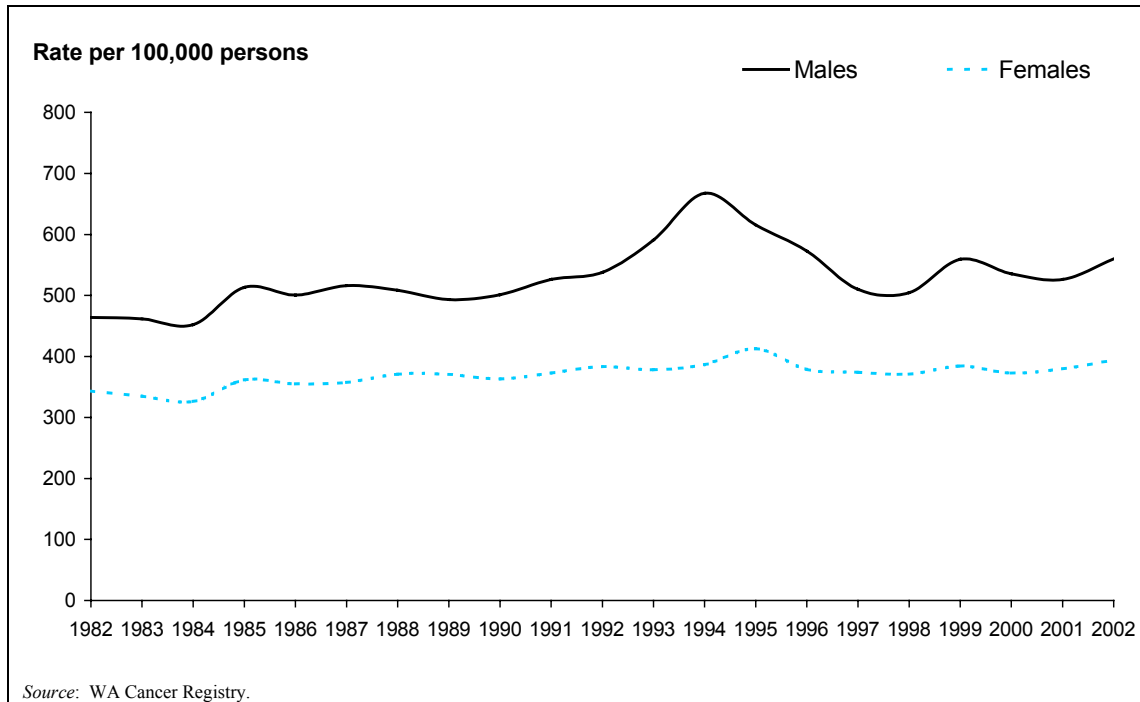


Figure 36: Mortality rate for all cancers by sex, WA, 1982–2002



Breast cancer

- **Incidence:** In 2002, 1,141 new breast cancer cases were reported, including 12 cases among males. Among females, this equated to an incidence rate of 118 new cases per 100,000 persons. Partly due to the introduction of regular screening, the incidence rates for breast cancer increased significantly over the past decade, by an average annual rate of 2.2% per year. In 1994–97, the five year relative survival for breast cancer among females aged 15 years and over was around 86%.¹⁷
- **Hospitalisations:** Around 1,800 hospital separations for breast cancer, including nine among males, were reported in WA in 2003. The female hospitalisation rate was 186 separations per 1,000 persons. Overall costs for these separations amounted to approximately \$6.3 million.
- **Mortality:** There were a total of 218 deaths resulting from breast cancer in WA in 2002. This figure included one male death. Overall, WA females recorded a mortality rate for breast cancer of 22.3 deaths per 100,000 persons. Since 1983, mortality rates for breast cancer have fallen by around 18%, representing an average annual fall of 1.6% to 2002.
- **Burden of disease:** Breast cancer was responsible for 3,037 years of life lost, 985 years lived with a disability and a total disease burden (DALY) of 4,022 years.
- **Metropolitan/non-metropolitan:** Females from metropolitan areas of WA had a higher mortality rate for breast cancer (23.6 deaths per 100,000 persons) than females from non-Metropolitan areas of the State (17.3 deaths per 100,000 persons).

Programs

BreastScreen WA provides a free mammography screening service for women aged 40 years and older. In addition to its six metropolitan screening services, mobile units visit the outer metropolitan areas and around a hundred country towns every two years. The service includes complete assessment of abnormalities up to the point of diagnosis, referral to appropriated services when treatment is needed, and follow up with health specialists to ensure that women receive appropriate treatment.

Figure 37: Incidence rate for breast cancer, WA, 1982–2002

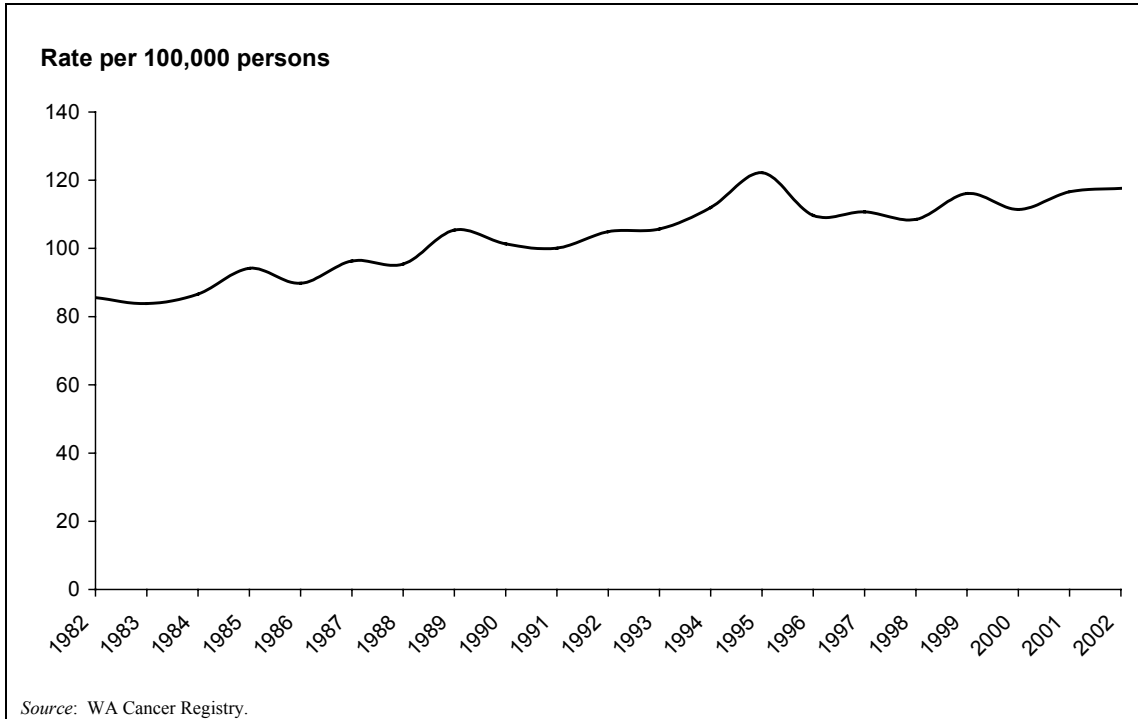
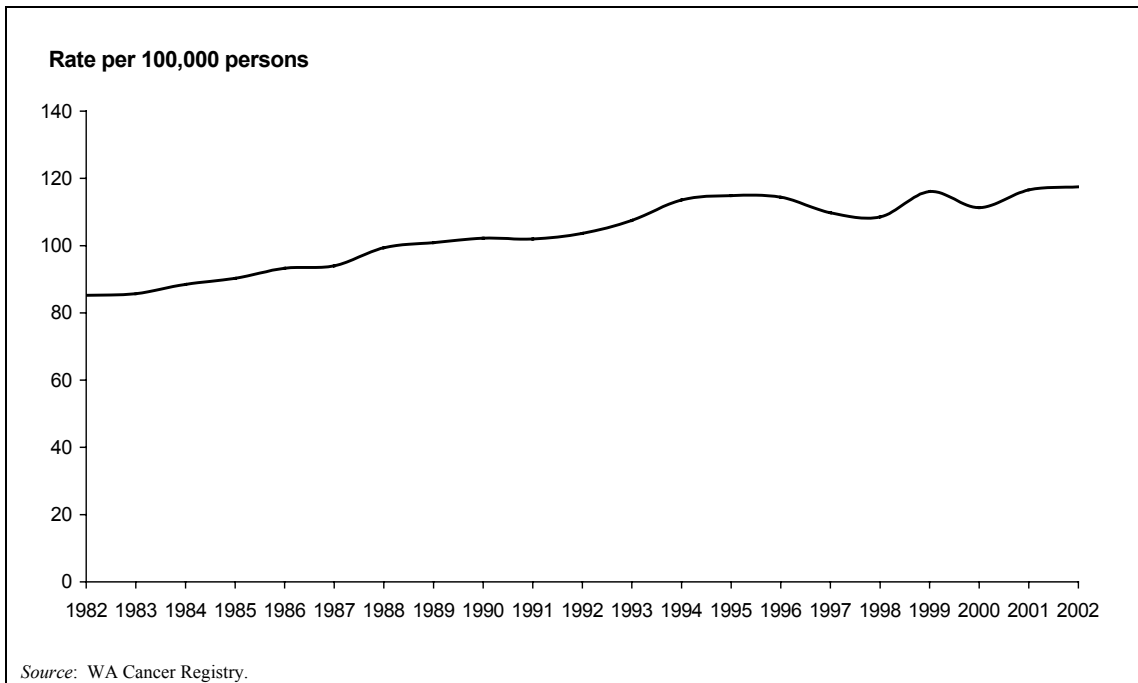


Figure 38: Mortality rate for breast cancer, WA, 1983–2002



Colorectal cancer

- **Incidence:** A total of 558 new male and 443 new female cases of colorectal cancer were reported to the WA Cancer Registry in 2002. This equates to a rate of 68.5 and 56.2 new cases per 100,000 persons among males and females respectively. Between 1982 and 2002, incidence rates for males increased by an average of 0.8% per year, however, this was not significant. Female rates remained relatively stable.
- **Hospitalisations:** There were 2,053 hospitalisations for colorectal cancer in 2003, with 58% of these being male. The hospital separation rate for colorectal cancer among males in 2003 was 1.4 per 1,000 persons, compared to a rate of 0.9 per 1000 persons among females.
- **Mortality:** Of the 387 deaths from colorectal cancer reported in WA in 2002, 57% were male, giving an age-standardised rate of 28 deaths per 100,000 persons. By comparison, females had a mortality rate for colorectal cancer of 17 deaths per 100,000 persons. Throughout the 1990s, rates remained relatively stable.
- **Burden of disease:** In 2000, there were an estimated 5,102 years of life lost and 1,052 years lived with a disability due to colorectal cancer in WA. Together this equated to a total disease burden (DALY) of 6,154 years resulting from colorectal cancer.
- **Costs:** The estimated cost of hospitalisations for colorectal cancer was \$13.5 million in 2003.
- **Aboriginality:** Although the number of colorectal cancer notifications were low among Aboriginal Western Australians in 2002, notification rates were similar to their non-Aboriginal counterparts, with rates of 56.0 and 56.6 new cases per 100,000 persons respectively.
- **Metropolitan/non-metropolitan:** In 2002, non-metropolitan areas of the State recorded slightly higher incidence rates for colorectal cancer (61.1 new cases per 100,000 persons), than their counterparts from metropolitan areas (55.1 new cases per 100,000 persons). However, mortality rates were slightly lower in non-metropolitan areas compared to metropolitan areas, at 20.2 and 22.2 deaths per 100,000 persons.

Programs

While there are currently no organised screening programs for colorectal cancer in Australia or WA, the Commonwealth Government is currently conducting a pilot study for bowel cancer screening, with the initial data collection to be completed in 2004. The aim of the pilot study is to provide information about the feasibility, acceptability and cost effectiveness of colorectal cancer screening in Australia.¹⁸

Figure 39: Incidence rate for colorectal cancer by sex, WA, 1982–2002

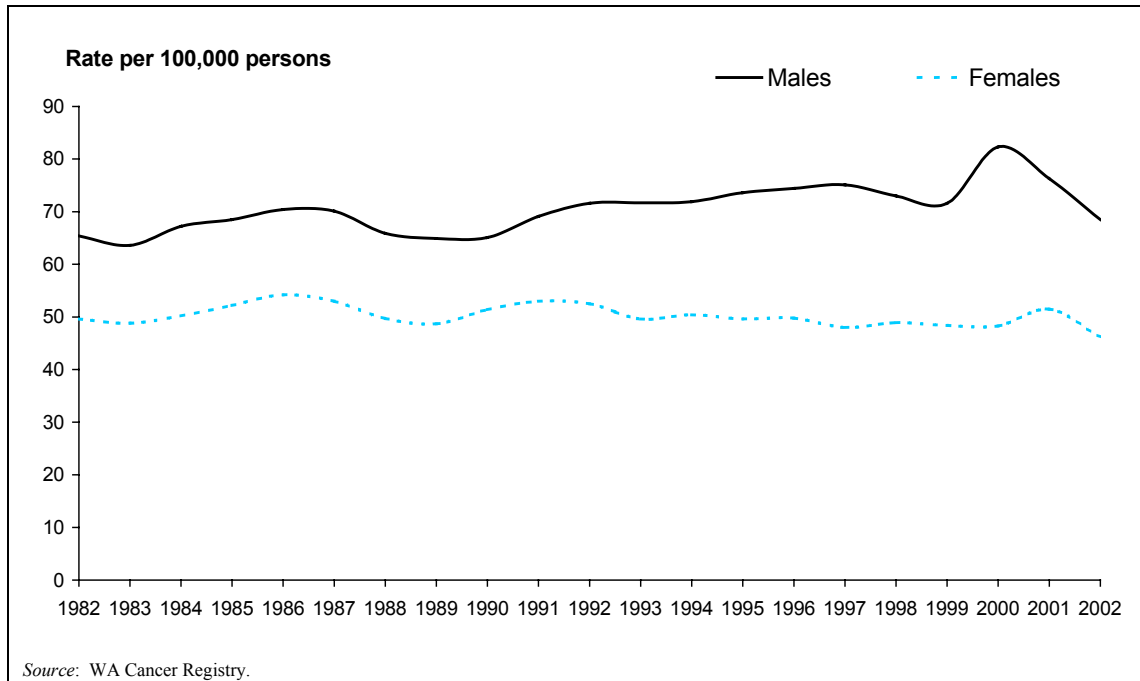
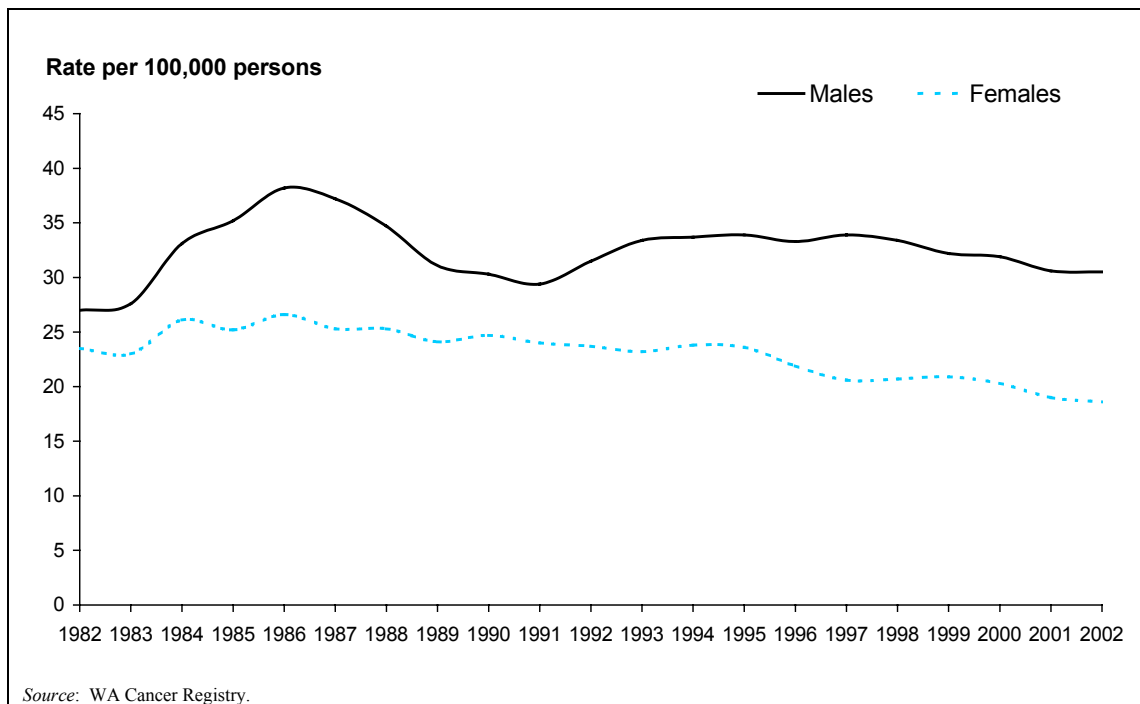


Figure 40: Mortality rate for colorectal cancer by sex, WA, 1982–2002



Cervical cancer

- **Incidence:** A total of 78 new cervical cancer cases were reported to the WA Cancer Registry in 2002 (8.1 new cases per 100,000 persons). Incidence rates for cervical cancer fell by a total of 49% between 1983 and 2000; an average of 5.0% per year.
- **Hospitalisations:** The hospital separation rate for cervical cancer in 2003 was 1.7 per 1,000 persons. There were a total of 1,666 separations for cervical cancer in WA hospitals in 2003.
- **Mortality:** In 2002, a total of 29 WA females died as a result of cervical cancer; a rate of 2.3 deaths per 100,000 persons. Mortality rates for cervical cancer fell by an average of 3.6% between 1982 and 2002.
- **Burden of disease:** An estimated 493 years of life lost were attributed to cervical cancer in WA in 2000, with a further 98 years lost to disability. The overall disease burden (DALY) associated with cervical cancer was 591 years.
- **Costs:** In 2003, the estimated cost of hospital separations for cervical cancer in WA was \$0.5 million.
- **Aboriginality:** In 2002, there were only two deaths resulting from cervical cancer among Aboriginal Western Australians. However, hospitalisations among Aboriginal persons were more than three times higher than their non-Aboriginal counterparts, with rates of 53.4 and 15.9 separations per 100,000 persons respectively.
- **Metropolitan/non-metropolitan:** In 2002, incidence rates for cervical cancer were slightly higher in metropolitan areas than non-metropolitan areas of the State, at 8.2 and 7.5 new cases per 100,000 persons respectively. However, mortality rates were lower in metropolitan areas than non-metropolitan areas (3.1 deaths and 2.8 deaths per 100,000 persons respectively).

Programs

The *WA Cervical Cancer Prevention Program* (WACCPP) reminds women to attend for Pap smears, promotes cervical cancer screening and provides screening history data to assist in the diagnosis of cervical abnormalities.

Figure 41: Incidence rate for cervical cancer, WA, 1982–2002

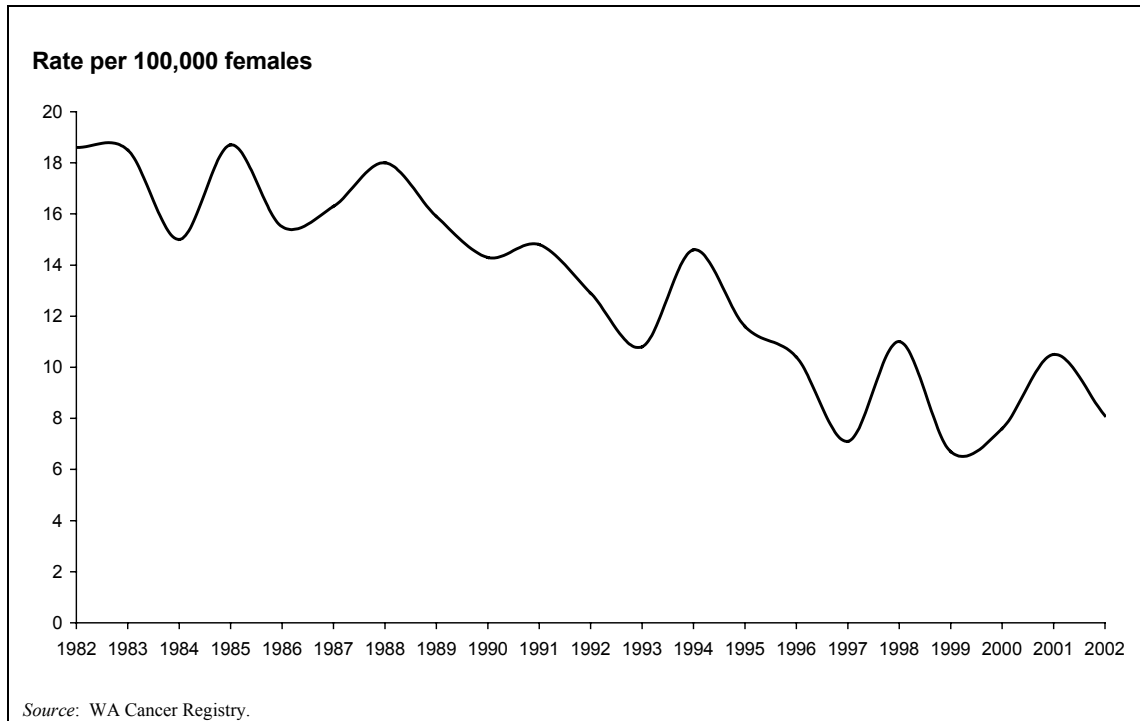
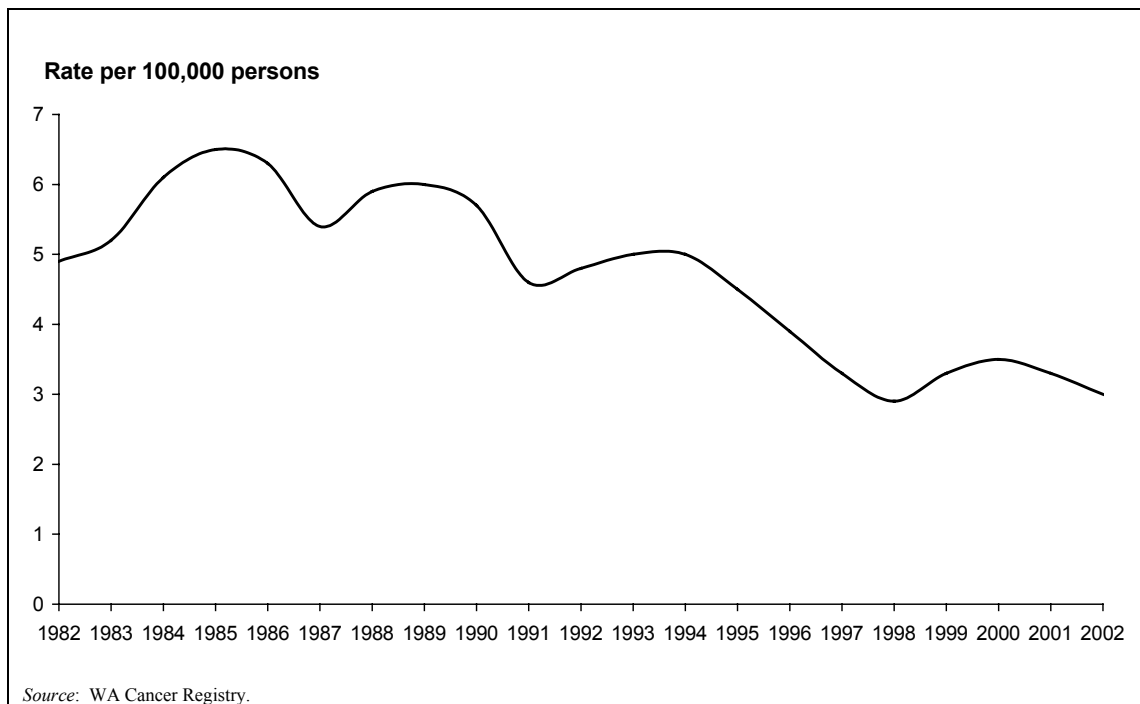


Figure 42: Mortality rate for cervical cancer, WA 1982–2002



Lung cancer

- **Incidence:** Of the 805 new cases of lung cancer reported to the WA Cancer Registry in 2002, 64% were males, with an incidence rate of 63.3 new cases per 100,000 persons. By comparison, females had a rate of 30.7 new cases per 100,000 persons. Lung cancer incidence rates decreased among males between 1982 and 2001 by an average of 2.1% per year, while female rates increased by an average annual rate of 1.2%.
- **Hospitalisations:** There were a total of 1,032 hospital separations for lung cancer in WA in 2003, with 65% of these occurring among males. Separation rates among males and females were 0.8 and 0.4 separations per 1,000 persons respectively.
- **Mortality:** In 2002, 673 deaths were reported for lung cancer in WA, of which, 68% were males. Mortality rates for lung cancer among males were more than 2.5 times higher than the female rate, at 58.2 and 22.4 deaths per 100,000 persons respectively. Mortality rates for lung cancer among males fell by a total of 17% between 1982 and 2002, an average of 1.7% per annum. However, female rates increased over this period by a total of 42%, representing an average increase of 1.4% per year.
- **Burden of disease:** In 2000, lung cancer was responsible for 7,499 years of life lost, 674 years lived with a disability, and a total disease burden (DALY) of 8,173 years.
- **Costs:** The cost of hospital separations for lung cancer in 2003 totalled \$4.8 million.
- **Aboriginality:** Incidence rates for lung cancer were slightly higher among Aboriginal persons than their non-Aboriginal counterparts at 50.2 and 45.0 new cases per 100,000 persons respectively. In 2002, mortality attributed to lung cancer was around 60% higher among Aboriginal Western Australians (55.7 deaths per 100,000 persons) than their non-Aboriginal counterparts (35.0 deaths per 100,000 persons).
- **Metropolitan/non-metropolitan:** People living in metropolitan areas of the State recorded slightly higher mortality rates for lung cancer in 2002 than persons from non-metropolitan areas, at 38.5 deaths and 36.7 deaths per 100,000 persons respectively. However, incidence rates among those from metropolitan areas were slightly lower (44.3 new cases per 100,000 persons) than those from non-metropolitan areas (49.4 new cases per 100,000 persons).

Programs

As smoking is the most important risk factor associated with lung cancer, prevention strategies primarily centre on the reduction of smoking. In WA, QuitWA, which incorporates the Quit Campaign, and other tobacco control organisations and initiatives, aim to reduce smoking among Western Australians. The program has been in operation for more than 20 years. At the time of writing, there were no population

screening programs for lung cancer in Australia.

Figure 43: Incidence rate for lung cancer by sex, WA, 1982–2002

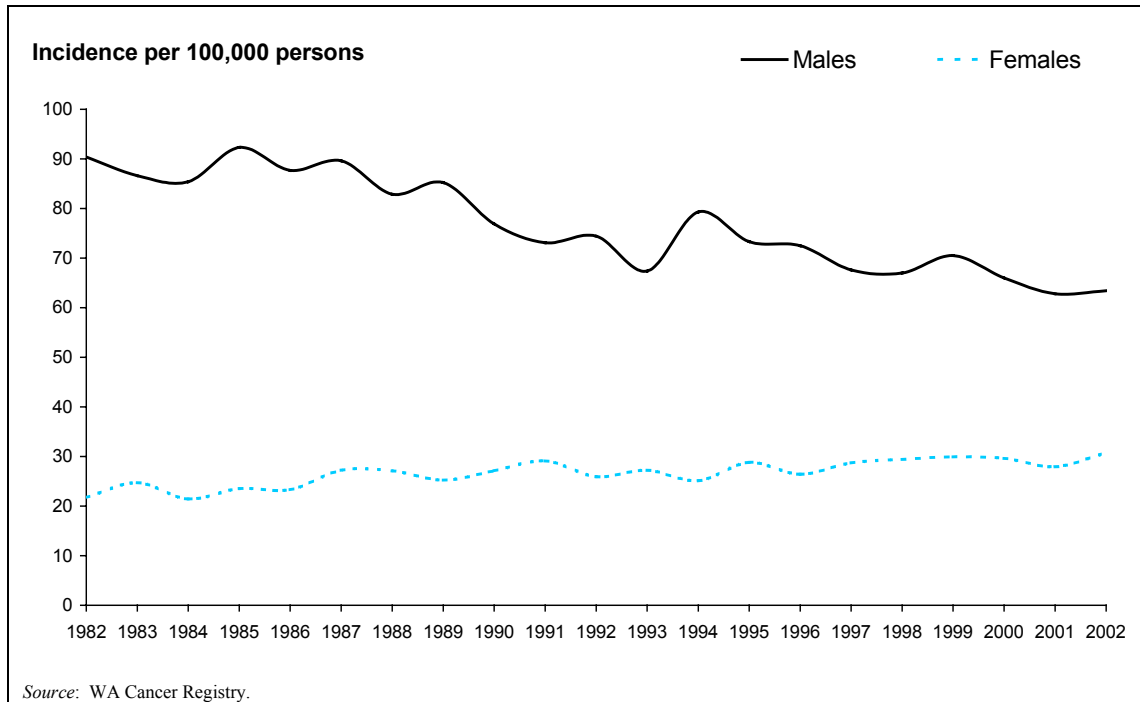
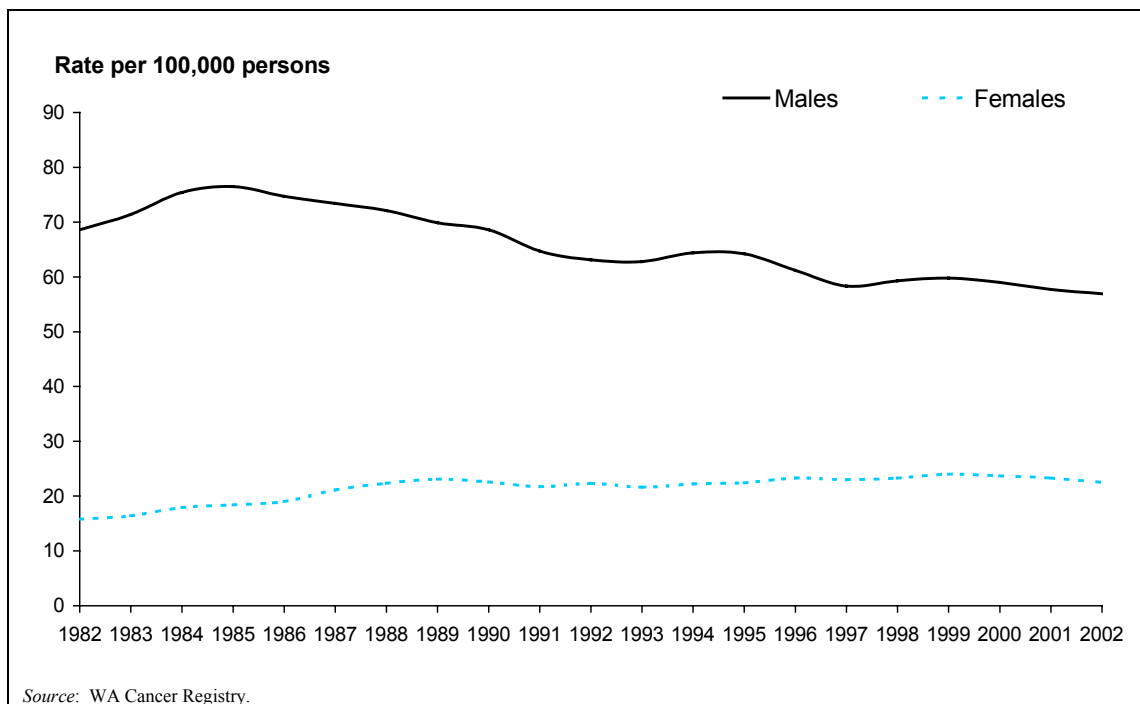


Figure 44: Mortality rate for lung cancer by sex, WA, 1982–2002



Melanoma

- **Incidence:** Almost 1,050 new melanoma cases were reported in WA in 2002, at a rate of 70.1 and 44.7 cases per 100,000 persons among males and females respectively. Over the past two decades, incidence rates for melanoma increased among WA males and females by an average of 3.5% and 2.1% per year respectively.

Australia has the highest incidence of skin cancer in the world, and of the States and Territories, only Queensland has a higher rate than WA.¹⁴

- **Mortality:** A total of 86 melanoma deaths were reported throughout WA in 2002, with males accounting for almost 70% of this figure. Mortality rates for melanoma were 7.2 deaths per 100,000 persons for males, compared to 2.8 deaths per 100,000 persons for females. Between 1982 and 2002, melanoma death rates for males fluctuated; however, a general, although not significant increase was recorded. By comparison, females experienced an average increase in mortality rates of 2.0% per year.
- **Hospitalisations:** Melanoma accounted for a total of 554 hospital separations in 2003, with males recording a rate of 0.4 separations per 1,000 persons, and females a rate of 0.2 separations per 1,000 persons.
- **Burden of disease:** In 2000, melanoma accounted for a total of 1,152 years of life lost, 625 years lived with a disability, and a total of 1,777 disability adjusted life years.
- **Costs:** The cost of hospital separations for melanoma in 2003 was around \$1.1 million.

Programs

The Cancer Council Australia and the Australian College of Dermatologists do not recommend population screening for melanoma, but have endorsed programs in which general practitioners develop surveillance programs for patients at high risk (Cancer Council Australia 2001).

Locally, dermatologists and plastic surgeons work with the Lions Cancer Institute to provide skin cancer screening to high-risk individuals across WA.

For further information go to www.cancerwa.asn.au

Figure 45: Incidence rate for melanoma by sex, WA, 1982–2002

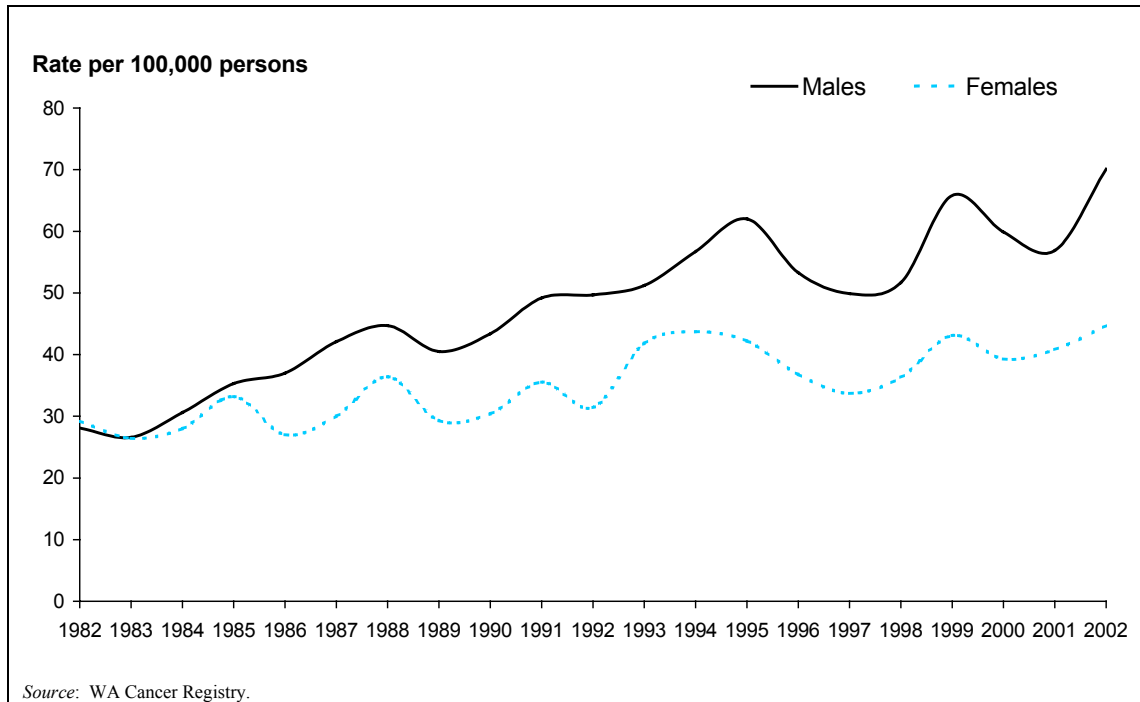
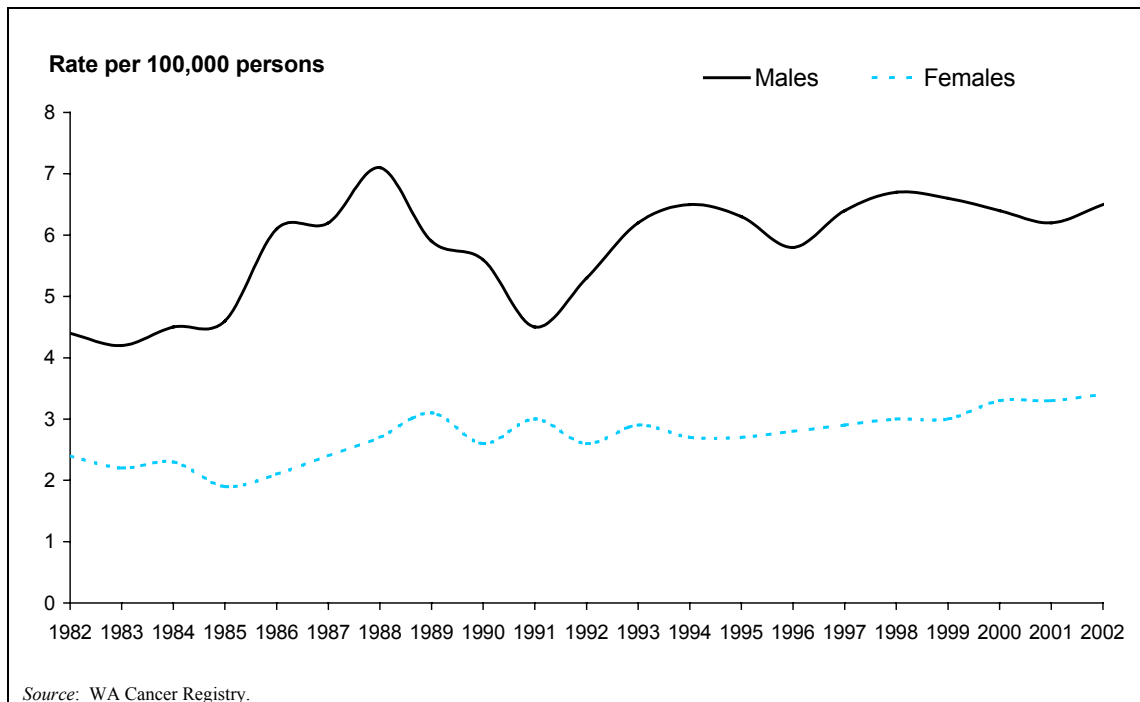


Figure 46: Mortality rate for melanoma by sex, WA, 1982–2002



Prostate cancer

- **Incidence:** Around 1,200 new prostate cancer cases were reported to the WA Cancer Registry in 2002. This equated to an age-standardised incidence rate of 143.4 cases per 100,000 persons. Incidence rates for prostate cancer rose by an average of around 3.2% per year between 1982 and 2002.

In the mid 1990s, a sharp increase in the incidence of prostate cancer was recorded in both WA and Australia. This was primarily due to improved screening methods and detection rates, together with the introduction of the prostate-specific antigen (PSA) test. The decline in incidence noted after 1994 resulted from the removal of previously undetected cases and a reduction in the number of PSA tests.¹⁹

- **Hospitalisations:** There were 1,620 hospital separations for prostate cancer in WA in 2003, equating to a separation rate of 2.0 per 1,000 persons.
- **Mortality:** In 2002, 181 Western Australians died as a result of prostate cancer, with an overall mortality rate of 26.3 deaths per 100,000 persons. From 1991 to 2002, prostate cancer mortality in WA fell by an average of 3.5% annually.
- **Burden of disease:** In 2000, prostate cancer accounted for 1,740 years of life lost, 766 years lived with a disability, and a total disease burden (DALY) of 2,505 years.
- **Costs:** The cost of hospitalisations for prostate cancer in WA totalled \$ 6.7 million in 2003.
- **Aboriginality:** In 2002, only two deaths and five new cases of prostate cancer were reported among Aboriginal Western Australians.
- **Metropolitan/non-metropolitan:** Residents of non-metropolitan areas of the State recorded higher mortality rates for prostate cancer in 2002 (28.5 deaths per 100,000 persons), than their counterparts from metropolitan areas (25.6 deaths per 100,000 persons).

Programs

Recently the introduction of prostate specific antigen (PSA) testing has been used as a screening method for the identification of tumours, mainly in younger men, that would previously have either remained undiagnosed or have been diagnosed later. Despite the absence of an organised national program for prostate cancer screening, and despite repeated advice against it, opportunistic PSA screening has occurred at high rates since the early 1990s.²⁰

The Cancer Council Australia and the Cancer Council of WA do not advocate mass screening for prostate cancer as they feel that, at present, there is insufficient reliable medical evidence that routine testing saves lives. However, they do not state that no man should be tested; rather they believe that men should make their own decision about whether to be tested.²¹

Figure 47: Incidence rate for prostate cancer, WA, 1982–2002

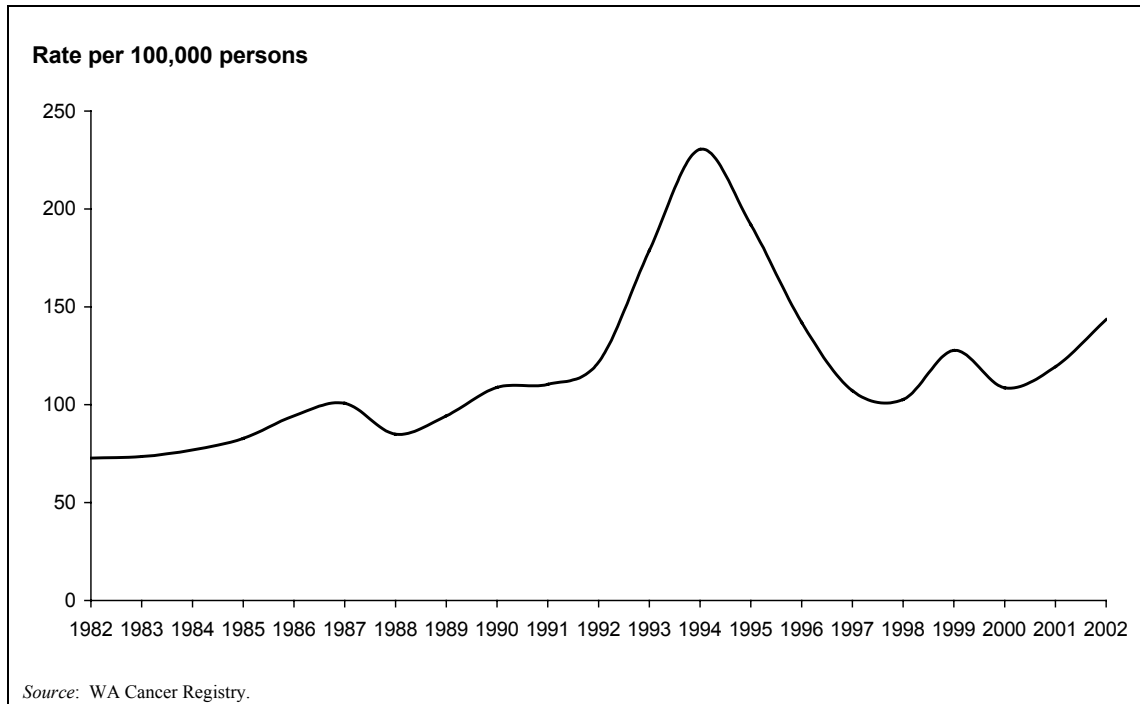
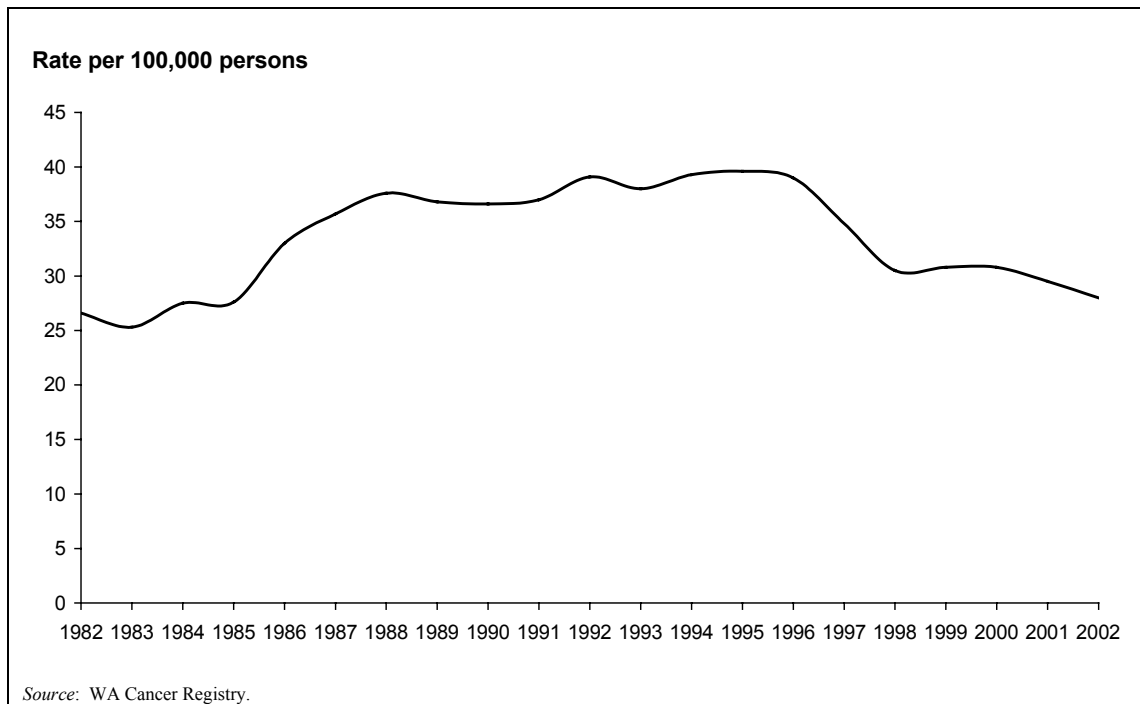


Figure 48: Mortality rate for prostate cancer, WA, 1982–2002



Arthritis

- **Prevalence:** Estimates from the 2004 WA Health and Wellbeing Surveillance System indicated that around 16% of males and 27% of females aged 18 years and over were currently experiencing arthritis. The proportion of those with arthritis increased with age, with males and females aged 55–64 years experiencing the highest prevalence, at 27.1% and 27.0% respectively.
- **Burden of disease:** In 2000, rheumatoid arthritis was responsible for a total of 130 years of life lost, 1,027 years lived with a disability, and a disease burden (DALY) of 1,157 years.
- **Costs:** In 2000, it was estimate that the cost of arthritis in Australia was almost \$9 billion. This represented around 1.4% of total Gross Domestic Product (GDP), or \$469 per person. Of this figure, around \$2.2 million were direct costs for prevention services, diagnosis and treatment.²² When these figures are applied to WA, the total cost for the State equates to \$882 million.
- **Aboriginality:** The prevalence of long term arthritis was slightly higher among Aboriginal Australians (16%) than their non-Aboriginal counterparts (13%) in 2001. A higher prevalence was reported by Aboriginal Australians across all age groups, with the exception of those aged 55 years and over.
- **Metropolitan/non-metropolitan:** In 2004, males from non-metropolitan areas of the State recorded a higher prevalence of arthritis than their counterparts from metropolitan areas at 20.5% and 15.1% respectively. Conversely, the prevalence of arthritis among non-metropolitan females (24.0%) was lower than that reported by females from metropolitan areas (27.8%).

Figure 49: Arthritis prevalence by sex, persons aged 18 years and over, WA, 2000–2004

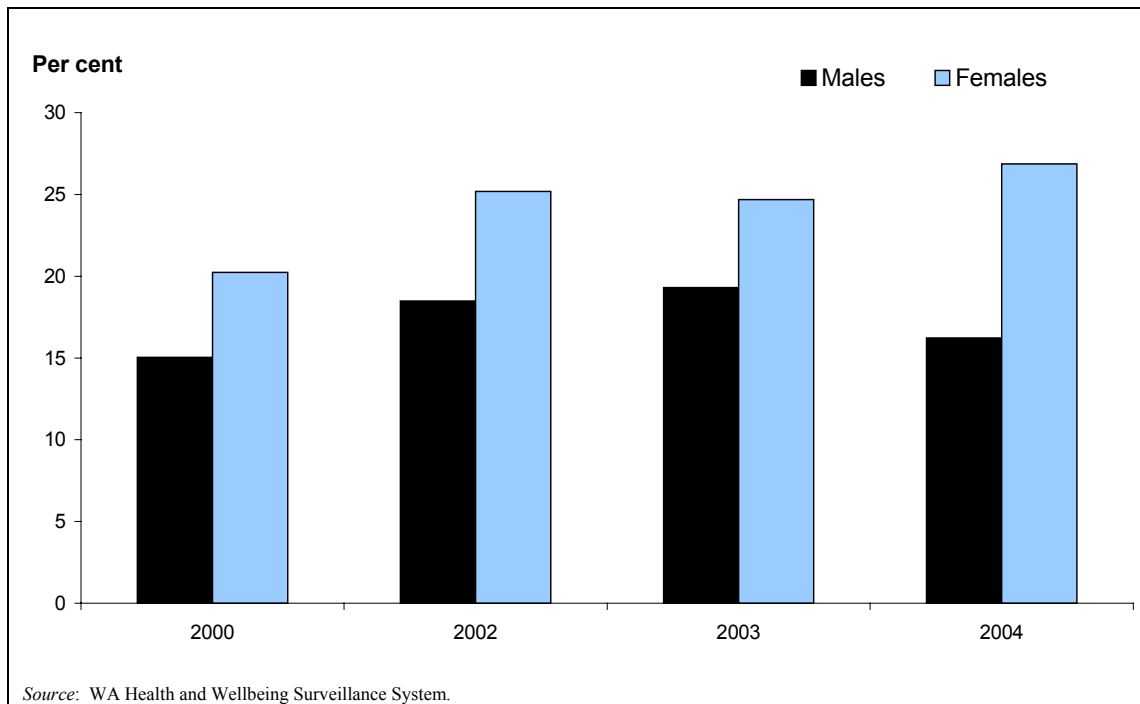
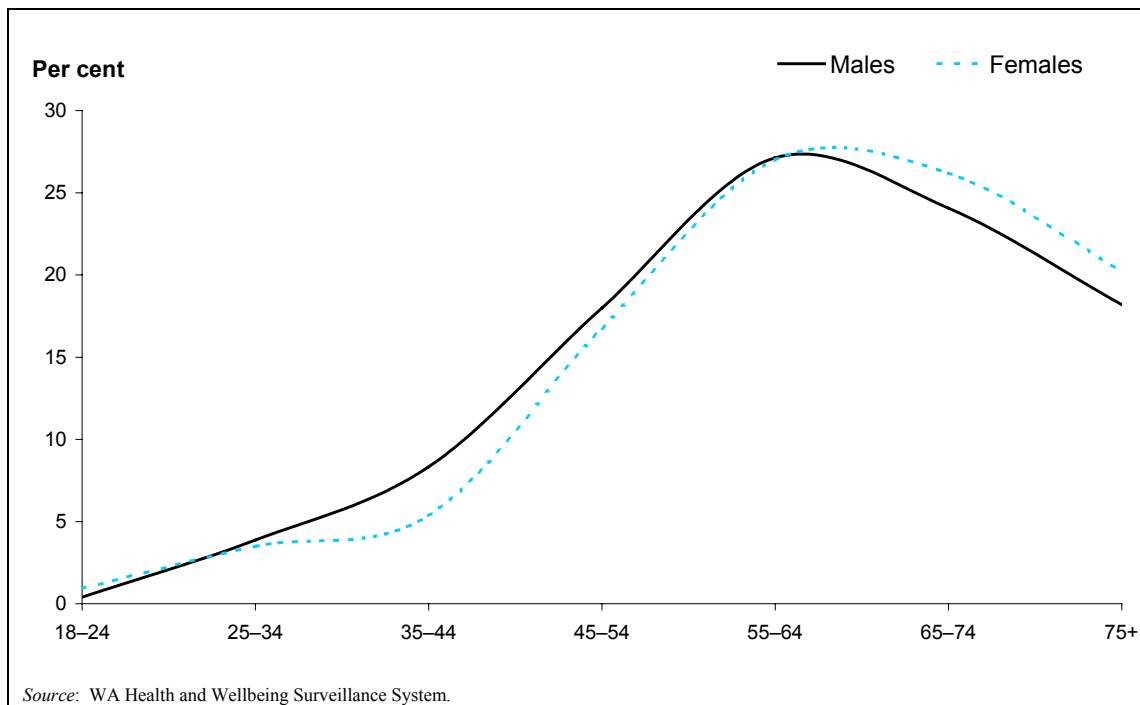


Figure 50: Arthritis prevalence by age and sex, WA, 2002–04



Asthma

- **Prevalence:** The prevalence of asthma among persons aged 18 years and over was 8.9% for males and 12.9% for females. The highest prevalence for males was reported among those aged 35–44 years (17.2%), while the highest prevalence for females was reported by those aged 50–54 years (20.0%).
- **Hospitalisations:** In 2001–02, there were a total of 2,358 hospitalisations (62% male) among children aged 0–14 years, with asthma sited as the principal diagnosis. For males and females, the separation rates were 705 and 459 separations per 100,000 persons respectively.
- **Mortality:** In 2002, there were a total of 10 male and 18 female deaths as a result of asthma in WA. This equated to a mortality rate of 1.1 and 1.9 deaths per 100,000 persons respectively.
- **Burden of disease:** In 2000, asthma was attributed to an estimated 511 years of life lost, 5,692 years lived with a disability, and a total disease burden (DALY) of 6,204 years.
- **Costs:** Estimates from the National Asthma Council of Australia put the total cost of asthma in Australia between \$585 and \$720 million per year. Between 45% and 55% of this cost was due to lost productivity and the remainder due to medical costs.²³ In 2003, it was estimated that the total cost of hospitalisations for asthma in WA was \$5.9 million
- **Aboriginality:** The prevalence of asthma among Aboriginal Australians is higher than that reported by their non-Aboriginal counterparts across all age groups. In 2001, the prevalence of asthma among Aboriginal Australians was 17%, compared to 12% among non-Aboriginal Australians.⁴
- **Metropolitan/non-metropolitan:** In 2004, the prevalence of asthma among persons aged 18 years and over in metropolitan and non-metropolitan areas of the State was similar, at 15.6% and 16.5% respectively for males and 21.4% and 19.5% for females.

Programs

Together with a number of major sponsors and key partners, the Department of Health WA continues to provide the core funding for the *Asthma Foundation of WA*. This is a community based, non-profit organisation dedicated to the alleviation of asthma morbidity and mortality through the provision of education and support services.

For further information go to www.asthmawa.org.au

Figure 51: Asthma prevalence by age and sex, WA, 2002–04

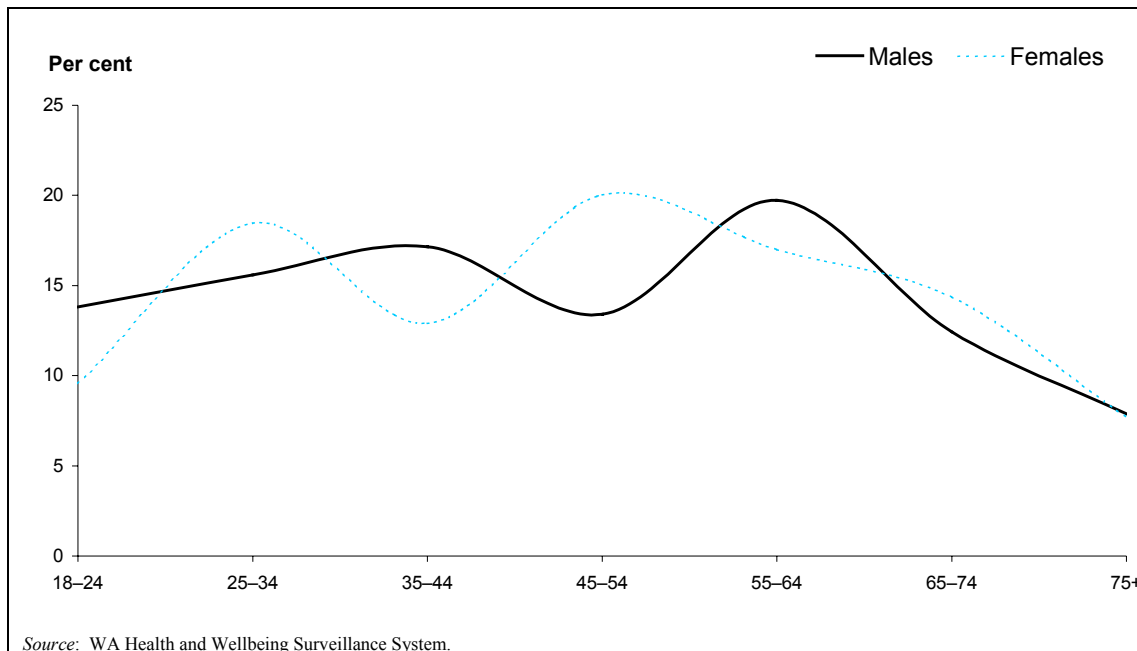
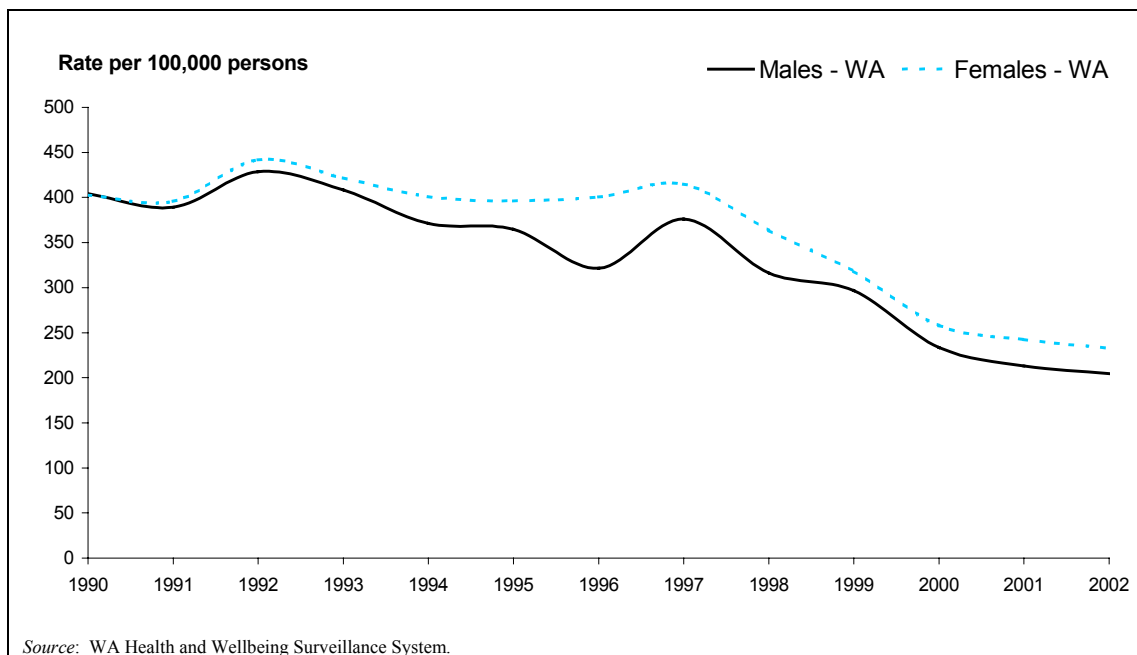


Figure 52: Hospital separation rates for asthma by sex, WA, 1990–2002



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