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Gynaecological cancers in Australia

an overview

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An overview

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Foreword

Gynaecological cancers in Australia: an overview is part of a series of reports commissioned by Cancer Australia and developed in collaboration with the Australian Institute of Health and Welfare.

This report provides for the first time a comprehensive summary of national statistics about gynaecological cancer in Australia. It is aimed at a wide audience, including health professionals, policy makers, health planners, educators, researchers, consumers and the broader public.

Gynaecological cancers (including ovarian, uterine, cervical, vaginal, vulval and cancers of other female genital organs and placenta) accounted for about 9% of all reported cancer cases in females in 2008, equating to an average of 12 females diagnosed with a gynaecological cancer every day. As a result of the ageing and growth of the population, the number of females diagnosed with ovarian, uterine and cervical cancer is expected to increase until 2020.

Gynaecological cancers in Australia: an overview provides information about gynaecological cancer incidence and mortality by geographical remoteness, socioeconomic status, Aboriginal and Torres Strait Islander status, and country of birth. In addition, data about survival, prevalence, hospitalisation, and burden of disease from gynaecological cancer contextualise the impact of gynaecological cancer on our population and health system.

Importantly, this report identifies some significant improvements over time, including a reduction in age-standardised mortality rates between 1982 and 2007 of about 20% for ovarian cancer and a reduction in age-standardised mortality rates between 1982 and 2002 of about 60% for cervical cancer.

The Australian Institute of Health and Welfare's work informs and supports the development of policy and programs for Australia's health and welfare through the provision of relevant, timely and high-quality information. The Institute collaborates with the Australian and state and territory governments and non-governmental organisations in undertaking its mission.

Cancer Australia works to reduce the impact of cancer and improve the wellbeing of those diagnosed by ensuring that evidence informs cancer prevention, screening, diagnosis, treatment and supportive care. The Australian Government is funding a program of work in gynaecological cancer through its national agency, Cancer Australia, to improve outcomes, service provision and survivorship support for women with gynaecological cancer.

This report will help inform the work in gynaecological cancer and increase understanding of the impact of gynaecological cancer to a broad audience.

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Australian Institute of
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The support of the Australasian Association of Cancer Registries in providing data and reviewing the draft report is also gratefully acknowledged.

Abbreviations

AACR	Australasian Association of Cancer Registries
ABS	Australian Bureau of Statistics
ACD	Australian Cancer Database
ACHI	Australian Classification of Health Interventions
ACN	Australian Cancer Network
ACT	Australian Capital Territory
AICR	American Institute for Cancer Research
AIHW	Australian Institute of Health and Welfare
ALOS	average length of stay
ASGC	Australian Standard Geographical Classification
ASR	age-standardised rate
CA	Cancer Australia
CI	confidence interval
CS	crude survival
DALY	disability-adjusted life year
DHFS	Department of Health and Family Services
excl.	Excluding
GRIM	General Record of Incidence of Mortality
IARC	International Agency for Research on Cancer
ICD-10	International Statistical Classification of Diseases and Related Health Problems, tenth revision
ICD-10-AM	International Statistical Classification of Diseases and Related Health Problems, tenth revision, Australian modification
ICD-O	International Classification of Diseases for Oncology
ICD-O-3	International Classification of Diseases for Oncology, third edition
IRSD	Index of Relative Socio-economic Disadvantage
MBS	Medicare Benefit Schedule
MIR	mortality-to-incidence ratio
NBCC	National Breast Cancer Centre
NBOCC	National Breast and Ovarian Cancer Centre

NCCH	National Centre for Classification in Health
NCSCH	National Cancer Statistics Clearing House
NCSP	National Cervical Screening Program
NDI	National Death Index
NHMD	National Hospital Morbidity Database
NHMRC	National Health and Medical Research Council
NHPA	National Health Priority Area
NMD	National Mortality Database
No.	number
NSW	New South Wales
NT	Northern Territory
NZ	New Zealand
Qld	Queensland
RS	relative survival
SA	South Australia
SACC	Standard Australian Classification of Countries
SEIFA	Socio-Economic Indexes for Areas
Tas	Tasmania
UK	United Kingdom
USA	United States of America
Vic	Victoria
WA	Western Australia
WCRF	World Cancer Research Fund
WHO	World Health Organization
YLD	years lost due to disability
YLL	years of life lost (due to premature mortality)

Symbols

$	Australian dollars, unless otherwise specified
%	per cent
<	less than
+	and over
. .	not applicable
n.a.	not available
n.p.	not published (data cannot be released due to quality issues)

Summary

Gynaecological cancers in Australia: an overview provides comprehensive national statistics on the five main types of gynaecological cancers, presenting the latest data and trends.

On average, 12 females were diagnosed with a gynaecological cancer every day

In 2008, a total of 4,534 new gynaecological cancers were diagnosed in Australia; this equates to an average of 12 females being diagnosed with this disease every day. Overall, gynaecological cancers accounted for 9% of all reported cancers in females, with the majority of cases diagnosed in females aged 60 and over. Uterine cancer was the most commonly diagnosed gynaecological cancer in 2008 (2,016 cases), followed by ovarian cancer (1,272), cervical cancer (778), vulval cancer (282), cancers of other female organ and placenta (116) and vaginal cancer (70).

The number of new ovarian and uterine cancers rose between 1982 and 2008. The age-standardised incidence rate for ovarian cancer fell significantly between 1982 and 2008, while for uterine cancer it rose significantly over the same period. For cervical cancer, a fall in both the number of new cases and age-standardised incidence rates was found from 1982 to 2008.

On average, 4 females died from a gynaecological cancer every day

A total of 1,502 females died from a gynaecological cancer in 2007. This means that on average, four females in Australia died from this disease every day. Gynaecological cancers accounted for 9% of all cancer deaths in females and 2% of all deaths in females in 2007.

Ovarian cancer was the most common cause of gynaecological cancer deaths in 2007 (848 deaths), followed by uterine cancer (338 deaths) and cervical cancer (208 deaths).

The number of deaths from ovarian and uterine cancer rose between 1982 and 2007, while the number of cervical cancer deaths fell over the same period. The age-standardised mortality rates for ovarian cancer fell significantly between 1982 and 2007, while for uterine cancer it was relatively stable. For cervical cancer, the mortality rate fell between 1982 and 2002, after which it was relatively stable.

Survival from ovarian, uterine and cervical cancer has improved

In the period 2006–2010, the 5-year relative survival was 82% for uterine cancer, 72% for cervical cancer and 43% for ovarian cancer. The reasons for the lower survival outcomes for ovarian cancer include the relatively high proportion of diagnoses at an advanced stage, attributable to the non-specific nature of the symptoms of this cancer and the lack of effective tests available for population-based screening.

Survival from ovarian, uterine and cervical cancer has improved over time. From 1982–1987 to 2006–2010, the 5-year relative survival for ovarian cancer increased significantly from 32% to 43%, for uterine cancer from 75% to 82%, and for cervical cancer from 68% in 1982–1987 to 71% in 1988–1993 but no significant changes were seen in the more recent time periods.

Australian females who were diagnosed with ovarian, uterine and cervical cancer had better survival prospects than their counterparts in many other countries and regions.

1 Introduction

The term 'gynaecological cancer' refers to any cancer that begins in the female reproductive system. The main types are cancers of the ovary, uterus, cervix, vagina and vulva. The different types of gynaecological cancer are associated with different risk factors, symptoms, growth patterns and response to treatment. Thus, the occurrence, treatment and outcomes for these cancers vary considerably as described in this report.

What are gynaecological cancers?

Cancer is a group of several hundred diseases in which cells become abnormal, grow in an uncontrollable way and form a mass called a neoplasm or tumour. Cancer cells can invade and destroy surrounding tissue and can also spread to other parts of the body, through a process known as metastasis. If the spread is not stopped, it can result in death.

Gynaecological cancers are cancers that originate in the female reproductive system. They are named according to the organ or part of the body where they have originated (Figure 1.1). Like other cancers, gynaecological cancers are named according to the organ or part of the body where the cancer starts, even if it has spread to other body parts. The main types of gynaecological cancers are:

- **Ovarian cancer**—begins in one or both ovaries, a pair of solid, oval-shaped organs producing hormones and eggs (ova). Each ovary is around 3 centimetres long and 1 centimetre thick.
- **Uterine cancer**—begins in the main body of the uterus, a hollow organ about the size and shape of an upside-down pear. The uterus is where the baby grows when a female is pregnant.
- **Cervical cancer**—begins in the cervix, the lower, cylinder-shaped part of the uterus. Its upper margin is connected to the uterus, while its lower margin is connected to the vagina.
- **Vaginal cancer**—begins in the vagina (also called the birth canal), a muscular tube-like channel about 7–10 centimetres long. It extends from the cervix to the external part of the females sex organs (vulva).
- **Vulval cancer**—begins in the vulva, the outer part of the female reproductive system. It includes the opening of the vagina, the inner and outer lips (also called labia minora and labia majora), the clitoris and the mons pubis (soft, fatty mound of tissue, above the labia).

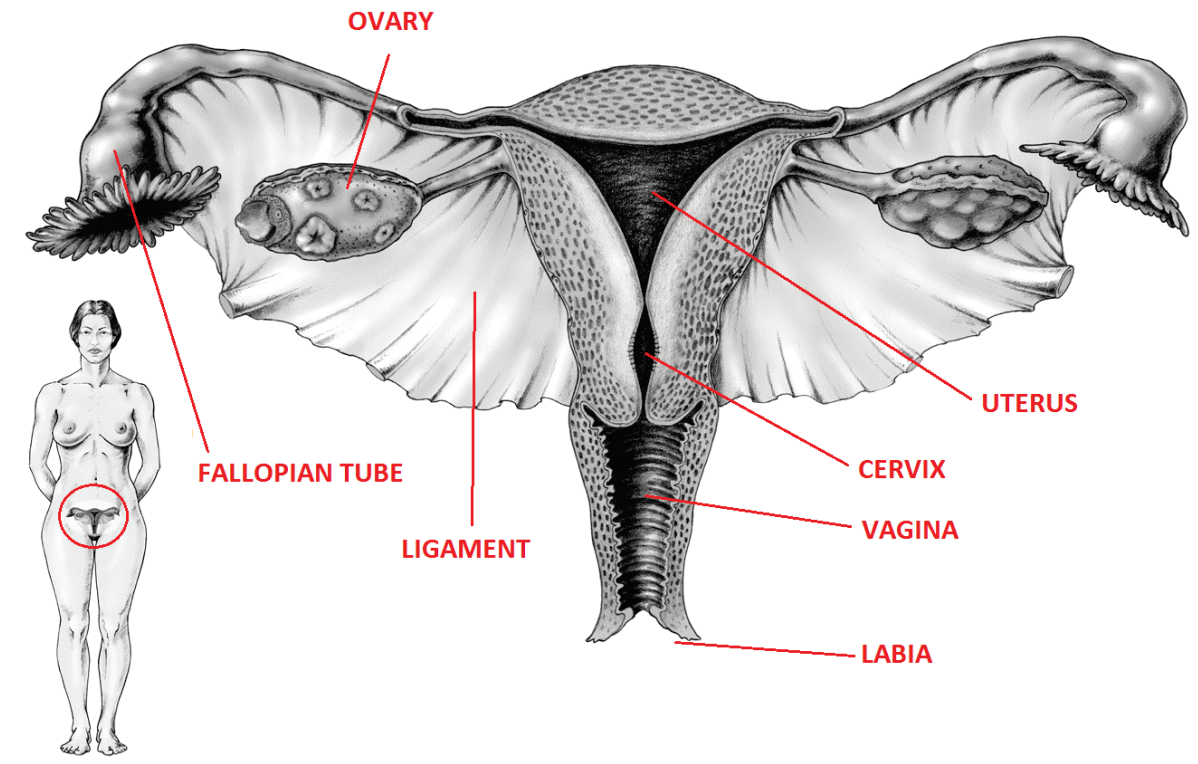
Other types of gynaecological cancers include fallopian tube cancer and placenta cancer (a pregnancy-related cancer).

Some overseas reports incorporate borderline ovarian cancer data and peritoneal cancer data; however, within the current report the present data refer only to invasive cancers of the ovary and other gynaecological sites.

Box 1.1: Defining cancer of the uterus and endometrial cancer

Cancers of the uterus are classified by the ICD-10 into three sites—cancers of cervix uteri (ICD-10 code of C53), cancers of corpus uteri (C54) and cancers of uterus, part unspecified (C55). For the purpose of this report, cancers of the corpus uteri and cancers of the uterus, part unspecified have been grouped together and are referred to as uterine cancer. Data on cancers of the cervix uteri are shown separately in this report and are referred to as cervical cancer.

Endometrial cancer is the most common type of uterine cancer. It is a cancer that starts in the endometrium, the lining of the uterus. In this report, endometrial cancer is grouped with other uterine cancers.



Source: Reproduced with permission by Cancer Council Victoria. Illustration by Con Stamatis.

Figure 1.1: The female reproductive system

What are the different types of gynaecological cancers?

The data presented in this report are mainly organised according to the anatomical site of the cancer. However, in addition to the anatomical site, cancers can be classified according to the type of cell in which it originated, which is referred to as the histological type of cancer. The main histological types of gynaecological cancers are:

- **carcinoma**—cancer that begins in the skin or in tissue that lines or covers the organs of the female reproductive system (that is, in the epithelium)
- **sarcoma**—cancer that begins in bone, cartilage, fat, muscle, blood vessels, or other connective or supportive tissue.

Other cells types within the reproductive system can give rise to cancer, including germ cell ovarian cancer (cancer that begins in the egg-producing cells found inside the ovary) and sex cord-stromal ovarian cancer (cancer that begins in the hormone-producing cells of the ovary).

Risk factors for gynaecological cancers

A risk factor is any factor associated with an increased likelihood of a person developing a health disorder or health condition, such as a gynaecological cancer. There are different types of risk factors, some of which can be modified and some which cannot.

It should be noted that having one or more risk factors does not mean a female will develop a gynaecological cancer. Many females with at least one risk factor never develop a gynaecological cancer, while others with a gynaecological cancer may have had no known risk factors. Even if a female with a gynaecological cancer has a risk factor, it is usually hard to know how much that risk factor contributed to the development of her cancer.

While the causes of many gynaecological cancers are not fully understood, there are a number of factors associated with the risk of developing one or more types of gynaecological cancer (Adami et al. 2008; Blair & Casas 2009; Cramer 2012; Duong & Flowers 2007; IARC 2008). These factors include family history, identified gene mutations, reproductive history, endogenous and exogenous hormone exposures, child-bearing, viral infection and a number of lifestyle factors, such as those leading to excess body weight.

Gynaecological cancers in a policy context

During the past decades cervical cancer has attracted policy focus in Australia. Cervical screening was introduced on an ad hoc basis in the 1960s, and in 1991, cervical screening was organised into a structured program known today as the National Cervical Screening Program (DoHA 2010). Moreover, in 1996, cervical cancer was declared a National Health Priority Area (NHPA) by Australian health ministers in recognition of its significant contribution to the burden of disease in Australia and the potential for prevention (DHFS & AIHW 1998). The performance of the National Cervical Screening Program is reported annually in the AIHW publication *Cervical screening in Australia*. The report includes indicators on participation rates, incidence and mortality. The latest report can be found at <http://www.aihw.gov.au/publication-detail/?id=10737421580>.

In 2011, National Breast and Ovarian Cancer Centre and Cancer Australia amalgamated to form a single national agency, Cancer Australia, to provide leadership in cancer control and improve outcomes for Australians affected by cancer. Ongoing funding has been provided in the Budget to support a range of projects in gynaecological cancers through Cancer Australia's Gynaecological Cancers Program.

Purpose and structure of this report

This report is the first national report focusing on gynaecological cancers in Australia. It provides a comprehensive summary of national statistics on gynaecological cancers in Australia. It aims to increase understanding of this disease and inform decision making, resource allocation and the evaluation of programs and policies. It is directed at a wide audience, including health professionals, policy makers, health planners, educators, researchers, consumers and the broader public.

This report brings together the latest available information on the following topics:

- the number of gynaecological cancers diagnosed each year (Chapter 2)
- early detection of gynaecological cancers through screening programs (Chapter 3)
- the number of hospitalisations due to gynaecological cancers (Chapter 4)
- the extent of health-care spending on gynaecological cancers (Chapter 5)
- the number of females alive who have been diagnosed with gynaecological cancers (Chapter 6)
- the burden of disease due to gynaecological cancers (Chapter 7)
- survival prospects for females diagnosed with gynaecological cancers (Chapter 8)
- the number of females who die from a gynaecological cancer each year (Chapter 9).

Data interpretation

The term 'gynaecological cancers' refers to primary gynaecological cancers which are invasive (that is, malignant). It does not include secondary gynaecological cancers, or benign (non-invasive) tumours. Furthermore, gynaecological cancers are defined as those cancers classified as 'C51–C58' in the tenth revision of the International Statistical Classification of Diseases and Related Health Problems (that is, ICD-10). They consist of cancers of the *Ovary* (C56), *Uterus* (C54–C55), *Cervix* (C53), *Vulva* (C52), *Vagina* **(**C51) and *Other female genital organs & placenta* (C57–C58). Throughout this report, data are shown for each gynaecological cancer type independently where possible. However, where numbers are too small to allow for meaningful interpretation of data, or data are not available, the figures for the rarer cancers have been presented as a combined figure. Consequently some discussions in the report will only focus on ovarian, uterine and cervical cancer.

A number of different disease classifications are cited in this report, such as ICD (International Statistical Classification of Diseases and Related Health Problems) and ICD-O (International Classification of Diseases for Oncology). Information about these classifications is in Appendix A.

Information on actual numbers of gynaecological cancer cases and deaths is presented in this report, together with age-standardised rates. The use of age-standardised rates enables comparisons between groups and within groups over time that take into account differences in the age structure and size of the population. Rates have been standardised to the Australian population at 30 June 2001 and are generally expressed per 100,000 population. In addition, for international comparisons, age-standardised rates based on a World Standard Population enable comparisons of Australian data with those of other countries. Further information on age-standardisation and other technical matters is in Appendix B.

Confidence intervals (at the 95% level) are shown in graphs (as error bars) and tables. As explained more fully in Appendix B, confidence intervals can be used as a guide when considering whether differences in rates may be a result of chance variation. Where confidence intervals do not overlap, the difference between rates may be regarded as greater than would readily be attributable to chance. Evidence that such differences are real would be stronger if they also appeared plausible on the basis of separate evidence and/or theoretical considerations. In other words, while such differences may be regarded as 'significant' in statistical terms, they may or may not be 'significant' from a practical or clinical perspective. Note that the AIHW is currently reviewing the methods used to calculate confidence intervals to ensure that the statistical methods used in AIHW reports are the most appropriate (see Appendix B for more detail).

In this report, comparisons are made with international and state or territory-based data. Caution should be taken when interpreting these data since observed differences may be influenced not only by the underlying number of gynaecological cancer cases (or number of gynaecological cancer deaths when considering mortality data), but also by differences between Australia and individual jurisdictions or countries in:

- methods of cancer detection
- types of treatment provided and access to treatment services
- characteristics of the cancer such as stage at diagnosis and histology type
- coding practices and cancer registration methods, as well as accuracy and completeness of recording of all gynaecological cancer cases.

Box 1.2: Terminology

- **Incidence rate:** the number of new gynaecological cancers diagnosed per 100,000 females during a specific time period, usually one year.
- **Mortality rate:** the number of deaths per 100,000 females for which the underlying cause was a gynaecological cancer.
- **Relative survival:** the average survival experience. It compares the survival of females diagnosed with gynaecological cancer (that is, observed survival) with that experienced by females in the general population of equivalent age and in the same calendar year (that is, expected survival).
- **Prevalence:** the number of females alive who were diagnosed with a gynaecological cancer within a specified time period, such as the previous 5 years.
- **Burden of disease:** the quantified impact of gynaecological cancers on an individual or population.
- **Hospitalisation rate:** the number of hospital admissions per 10,000 females due to a gynaecological cancer during a specified time period, usually one year.

Box 1.3: Statistically significant

For the purpose of this report, the term 'statistically significant' or 'significant' has been used to refer to differences where 95% confidence intervals do not overlap and where consequently there are statistical grounds for suspecting that differences may not be chance occurrences. Evidence that such differences are real (that is, not chance events) would be stronger if it were plausible that they were real, based on separate evidence and/or theoretical considerations.

Data sources

A key data source for this report was the Australian Cancer Database (ACD). This database contains information on all new cases of primary, invasive cancer (excluding basal cell and squamous cell carcinoma of the skin) diagnosed in Australia since 1982. Data are collected by state and territory cancer registries from a number of sources and are supplied annually to the AIHW. The AIHW is responsible for the compilation of the ACD through the National Cancer Statistics Clearing House—a collaboration with the Australasian Association of Cancer Registries (AACR).

Another key data source was the National Mortality Database (NMD). This database is a national collection of information for all deaths in Australia from 1964 to 2007 and is maintained by the AIHW. Information on the characteristics and causes of death of the deceased is provided by Registrars of Births, Deaths and Marriages and coded nationally by the Australian Bureau of Statistics (ABS). Unless stated otherwise, death information in this report relates the year of death, except for the most recent year (namely, 2007) where year of death registration was used. Previous investigation has shown that, due to a lag in processing of deaths, year of death information for the latest available year generally underestimates the true number of deaths, whereas the number of deaths registered in that year is closer to the true value.

Several other data sources—including the National Death Index, the National Hospital Morbidity Database, the Disease Expenditure Database and the 2008 GLOBOCAN database—have also been used to present a broad picture of gynaecological cancers in Australia.

Additional information about each of the data sources used in this report is in Appendix C.

Box 1.4: Why do some statistics in this report appear old?

While this report is published in 2012, the statistics in the main chapters refer to 2010 or earlier. The reason is that whether data are collected recently or not, it often takes a year or more before the data are fully processed and released to the AIHW. Also, once the AIHW receives the data, some time is needed to load, clean and analyse them before release.

2 Incidence of gynaecological cancers

Key findings

In 2008 in Australia:

- 4,534 gynaecological cancers were diagnosed.
- Of these, 2,016 were uterine cancer, 1,272 were ovarian cancer, 778 were cervical cancer, 282 were vulval cancer and 70 were vaginal cancer.
- Uterine cancer ranked sixth, ovarian cancer tenth, cervical cancer thirteenth, vulval cancer twentieth and vaginal cancer thirty-eighth in terms of the most commonly diagnosed cancer in females (excluding basal and squamous cell carcinoma of the skin).
- More than 60% of ovarian and uterine cancers were diagnosed in females aged 60 and over, while about 70% of cervical cancers were diagnosed in females under the age of 60.
- The risk of a female being diagnosed with ovarian cancer by the age of 85 was 1 in 79. The corresponding risk of being diagnosed with uterine cancer was 1 in 49 and for cervical cancer it was 1 in 157.

Between 1982 and 2008:

- The age-standardised incidence rate of ovarian cancer fell by 15% (from 12.5 to 10.6 per 100,000).
- The incidence rate of uterine cancer rose by 22% (from 13.8 to 16.8 per 100,000).
- The incidence rate of cervical cancer fell by 51% (from 14.2 to 7.0 per 100,000).

In the 5 years from 2004 to 2008:

- The incidence rate of ovarian cancer was significantly higher in *Major cities* than in *Outer regional* areas (11.3 versus 9.6 per 100,000), while that of cervical cancer was significantly higher in *Remote and very remote* areas (9.5 per 100,000) than in *Major cities* (6.8 per 100,000) and *Inner regional* areas (6.4 per 100,000). In contrast, there was no statistically significant variation by remoteness for uterine cancer.
- The incidence rate of ovarian cancer did not vary by socioeconomic status. However, the incidence rates of uterine and cervical cancer were higher in the lowest socioeconomic status group (group 1) compared with other groups.
- There was no statistically significant difference in the age-standardised incidence rate of ovarian cancer for Aboriginal and Torres Strait Islander females compared with non-Indigenous females. In contrast, the incidence rates of uterine and cervical cancer were significantly higher for Aboriginal and Torres Strait Islander females (24.3 and 18.0 per 100,000, respectively) than non-Indigenous females (14.8 and 6.5 per 100,000, respectively).
- The mean age at which females were diagnosed with cancer differed by Aboriginal and Torres Strait Islander status for ovarian, uterine and cervical cancer, and all gynaecological cancers combined, with Aboriginal and Torres Strait Islander females being younger at diagnosis than non-Indigenous females.

About incidence of gynaecological cancers

Incidence data indicate the number of new gynaecological cancers diagnosed during a specific period, usually one year. While these data refer to the number of gynaecological cancers diagnosed and not the number of females diagnosed, it is rare (although possible) that a female would be diagnosed with two or more primary gynaecological cancers in a one-year period. Thus, the annual number of new gynaecological cancers is practically the same as the annual number of females diagnosed with gynaecological cancers.

As mentioned in Chapter 1, gynaecological cancers consist of cancer of the *Ovary* (ICD-10 code of C56), *Uterus* (C54–C55), *Cervix* (C53), *Vagina* (C52), *Vulva* (C51), and *Other female genital organs & placenta* (C57–C58).

Details on the incidence of gynaecological cancer over time are provided in this chapter. Information is also presented on the risk of a person being diagnosed with gynaecological cancer by the age of 85, as is information on the estimated number of new gynaecological cancers from 2011 to 2020 and differences in the incidence by age, state and territory, remoteness area, socioeconomic status, Aboriginal and Torres Strait Islander status and country of birth. Data on how Australia's gynaecological cancer rate compares internationally are also reported.

As stated in Chapter 1, only those gynaecological cancers that were classified as primary and invasive cancers are considered for inclusion. Additionally, to be considered as incident cases, they must be a 'new' primary cancer and not a recurrence of a previous primary cancer (IARC 2004).

The main data source for this chapter is the Australian Cancer Database, which consists of data provided to the AIHW by state and territory cancer registries through the National Cancer Statistics Clearing House. Further detail about the Australian Cancer Database is in Appendix C.

How many females were newly diagnosed with a gynaecological cancer in 2008?

In 2008, a total of 4,534 gynaecological cancers were diagnosed in Australia; this equates to an average of 12 females being diagnosed with a gynaecological cancer every day (Table 2.1). Gynaecological cancers accounted for about 9% of all reported cancer cases in females in 2008.

The most commonly diagnosed gynaecological cancer in 2008 was uterine cancer (2,016 cases), followed by ovarian cancer (1,272), cervical cancer (778), vulval cancer (282), cancers of other female organs and placenta (116) and vaginal cancer (70).

Excluding basal cell and squamous cell carcinoma of the skin (see Box 2.1), uterine cancer was the sixth, ovarian cancer the tenth, and cervical cancer the thirteenth most commonly diagnosed cancer in females. In addition, vulval cancer ranked twentieth, cancers of other female genital organs and placenta ranked thirty-first and vaginal cancer ranked thirty-eighth.

The age-standardised incidence rate of all gynaecological cancers combined was 38.2 per 100,000 in 2008. The corresponding rates for the individual types of gynaecological cancer

were 16.8 for uterine cancer, 10.6 for ovarian cancer, 7.0 for cervical cancer, 2.3 for vulval cancer, 1.0 for other female organs and placenta cancer and 0.6 for vaginal cancer.

Table 2.1: The most commonly diagnosed cancers[a], including gynaecological cancers, females, Australia, 2008

Site/type of cancer (ICD-10 codes)	No. of cases	Percentage of all gynaecological cancers	Percentage of all cancers in females	ASR[b]	95% CI
Breast (C50)	13,567	. .	28.2	115.4	113.5–117.4
Bowel (C18–C20)	6,375	. .	13.2	51.5	50.2–52.8
Melanoma of skin (C43)	4,581	. .	9.5	39.3	38.1–40.4
All gynaecological cancers combined (C51–C58)	***4,534***	**100.0**	**9.4**	**38.2**	**37.1–39.3**
Ovary (C56)	*1,272*	*28.1*	*2.6*	*10.6*	*10.0–11.2*
Uterus (C54–C55)	*2,016*	*44.5*	*4.2*	*16.8*	*16.1–17.6*
Cervix (C53)	*778*	*17.2*	*1.6*	*7.0*	*6.5–7.5*
Vagina (C52)	*70*	*1.5*	*0.1*	*0.6*	*0.4–0.7*
Vulva (C51)	*282*	*6.2*	*0.6*	*2.3*	*2.0–2.6*
Other female genital organs & placenta (C57–C58)	*116*	*2.6*	*0.2*	*1.0*	*0.8–1.2*
Lung (C33–C34)	3,944	. .	8.2	32.2	31.2–33.2
Lymphoid cancers (C81–C85, C88, C90, and C91)[c]	3,181	. .	6.6	26.4	25.5–27.3
All cancers[d]	**48,180**	**. .**	**100.0**	**400.5**	**396.9–404.1**

. . Not applicable

(a) Excluding basal and squamous cell carcinoma of the skin.

(b) The rates were age-standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.

(c) Lymphoid cancers are cancers that start in lymphocytes of the immune system. The most common types are lymphomas, lymphoid leukaemia and myeloma.

(d) Includes cancers coded in ICD-10 as C00–C97, D45, D46, D47.1 and D47.3, excluding C44 codes that indicate basal cell or squamous cell carcinoma of the skin.

Source: AIHW Australian Cancer Database 2008.

Box 2.1: Cancer registration in Australia

Registration of all cancers, excluding basal and squamous cell carcinomas of the skin, is required by law in each state and territory. Information on newly diagnosed cancers is collected by each state and territory cancer registry. Each cancer registry provides data to the AIHW annually, encompassing all cancer cases notified to the registry between 1982 and the most recent completed year of data, for example 1982 to 2008. The data are compiled to form the Australian Cancer Database (ACD).

Since basal and squamous cell carcinomas of the skin are not notifiable, data on these cancers are not included in the ACD and therefore not in this report. However, past research has shown that basal and squamous cell carcinomas of the skin are by far the most frequently diagnosed cancers in Australia (AIHW & CA 2008).

What is the average age at diagnosis?

In 2008, the average age at first diagnosis varied across the different types of gynaecological cancers. The mean age at first diagnosis of ovarian and uterine cancer was 64 years. Cervical cancer had the lowest mean age at first diagnosis at 51 years, whereas vaginal and vulval cancers had the highest, at 70 and 67 years, respectively. For all gynaecological cancers combined, the mean age at first diagnosis was 62 years (Table 2.2).

Table 2.2: Mean and median age of diagnosis for gynaecological cancers, Australia, 2008

Type of cancer	Mean age at first diagnosis	Median age at first diagnosis
Ovarian cancer	63.8	63.0
Uterine cancer	63.8	63.0
Cervical cancer	50.9	48.0
Vaginal cancer	69.6	71.0
Vulval cancer	66.5	68.5
All gynaecological cancers combined	**61.9**	**62.0**

Source: AIHW Australian Cancer Database 2008.

Does incidence differ by age?

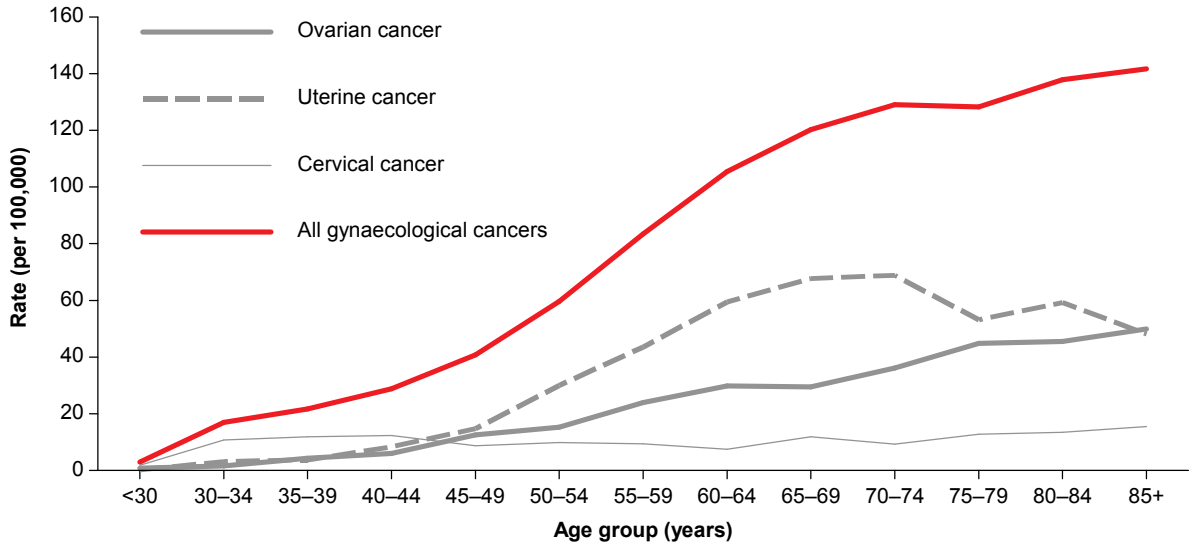
In 2008, the majority of ovarian and uterine cancers were diagnosed in females aged 60 and over (61% and 63%, respectively). In contrast, about 70% of cervical cancers were diagnosed in females under the age of 60 (Appendix Table D2.1).

Figure 2.1 shows differences in the incidence rate of ovarian, uterine and cervical cancer, and all gynaecological cancers combined by age groups in 2008. The incidence rate of ovarian cancer increased between most age groups, with the highest incidence rate in females aged 85 and over (49.9 per 100,000).

The incidence rate of uterine cancer increased with age until the age of 70–74, where incidence was highest at 68.9 per 100,000. The incidence rates for female aged 75 and over were somewhat lower than that of the 70–74 year olds.

The cervical cancer incidence rate increased with age to 12.3 per 100,000 in females aged 40–44. Somewhat lower rates were seen in females aged 45–64 (between 7.5 and 9.8 per 100,000), after which the rate increased again to 15.5 in females aged 85 and over.

The incidence rate of all gynaecological cancers combined also increased with age, with the sharpest increase in absolute terms seen for females aged 40–44 through to 70–74. Specifically, the incidence rate was 28.8 per 100,000 for females aged 40–44 increasing to 129.1 for females aged 70–74. The highest incidence rate was for females aged 85 and over, at 141.7.



Notes

1. The rates shown are age-specific rates.
2. The data for this figure are in Appendix Table D2.1.

Source: AIHW Australian Cancer Database 2008.

Figure 2.1: Incidence of ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by age at diagnosis, Australia, 2008

What has changed over time?

Figure 2.2 presents the number of new cases of ovarian, uterine and cervical cancer, and all gynaecological cancers combined, together with the corresponding age-standardised rates for the 27-year period from 1982 (the year in which national cancer incidence data were first available) to 2008.

The number of new ovarian cancers increased gradually from 835 cases in 1982 to 1,272 cases in 2008, representing an increase of 52%. Despite the increase in numbers, the age-standardised incidence rate of ovarian cancer fell significantly by 15%, from 12.5 per 100,000 in 1982 to 10.6 in 2008.

The number of new uterine cancers more than doubled between 1982 (941 cases) and 2008 (2,016 cases). The age-standardised incidence rate of uterine cancer rose significantly by 22% from 13.8 per 100,000 (in 1982) to 16.8 (in 2008).

The number of new cervical cancers rose by 13% between 1982 (965 cases) and 1991 (1,094 cases), followed by a fall in the number of cases until the 2000s when the number of new cases became relatively stable, ranging between 691 and 778 cases per year. The age-standardised incidence rate of cervical cancer slowly fell from 14.2 per 100,000 in 1982 to 13.3 in 1991 (the first year for which the organised national screening program started), after which the rate fell more rapidly to reach a plateau of about 7 per 100,000 between 2001 and 2008. Overall, the incidence rate of cervical cancer fell by 51% between 1982 and 2008.

For all gynaecological cancers combined, there was a 54% increase in the number of new cases from 2,944 in 1982 to 4,534 in 2008. The incidence rate of all gynaecological cancers

combined fell significantly by 12% over the 27 years from 1982 to 2008. In 1982, the incidence rate was 43.6 per 100,000, while it was 38.2 in 2008.

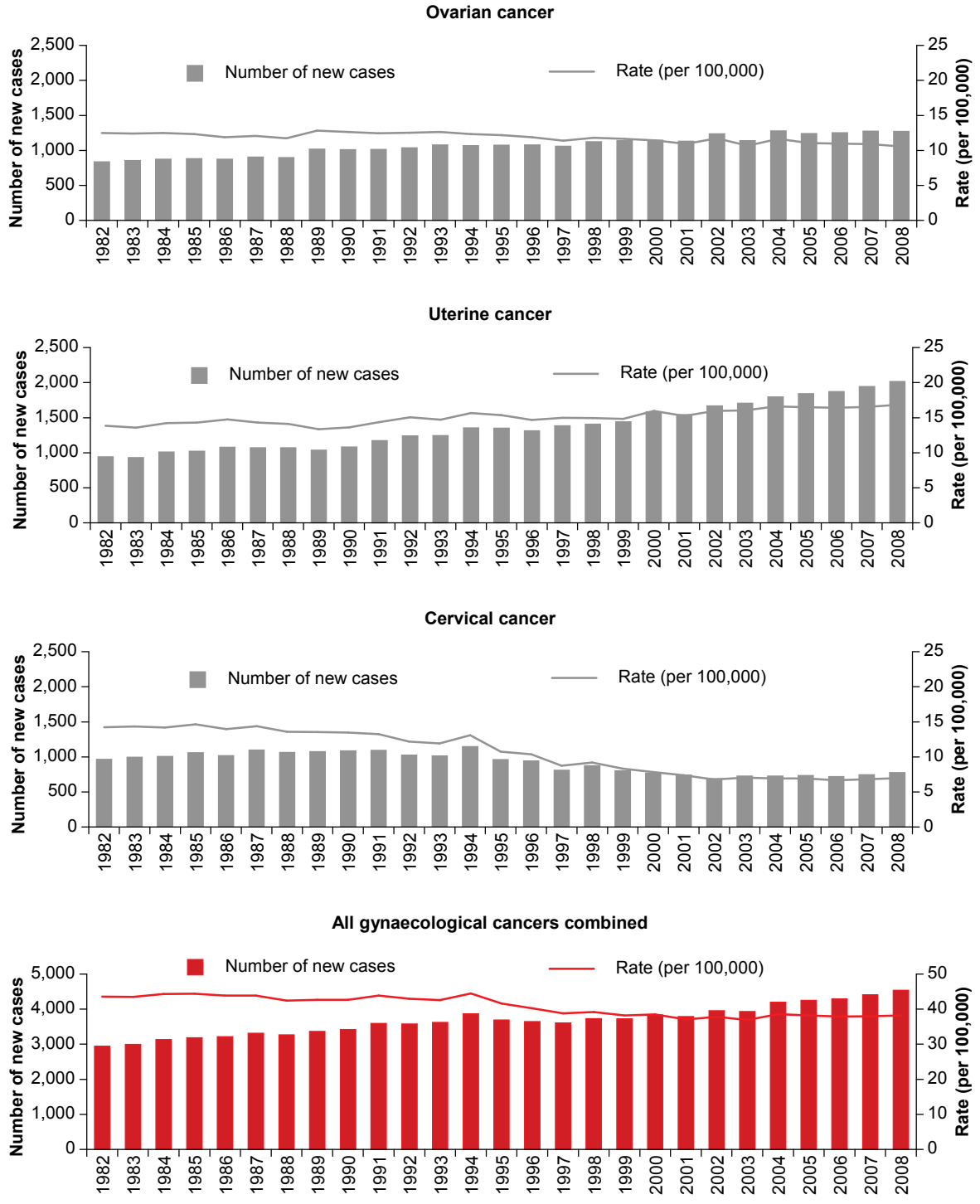
Do incidence trends differ by age at diagnosis?

Trends in incidence rates by age for the 27-year period from 1982 to 2008 are shown in Figure 2.3. The observed decrease in the incidence rates of ovarian cancer over the past decades was concentrated among those aged 50–69, with the rate for this age group falling significantly by 28% from 1982 (32.5 per 100,000) to 2008 (23.3). In contrast, the ovarian cancer incidence rate for females aged less than 50 remained fairly stable from 1982 to 2008, with rates ranging between 2.7 and 4.1 per 100,000. For females aged 70 and over, the incidence rates fluctuated considerably over the period, with no statistically significant difference found between the 1982 rate (36.0 per 100,000) and the 2008 rate (42.5).

The uterine cancer incidence rate rose significantly between 1982 and 2008 for the two oldest age groups—by 19% for females aged 50–69 (from 39.2 to 46.7 per 100,000) and by 26% for females aged 70 and over (from 47.1 to 59.3). For females under the age of 50, the incidence rate also rose by 23% from 1982 (2.6 per 100,000) to 2008 (3.2), but this increase was not statistically significant.

There were significant decreases in the rate of cervical cancer for all age groups from 1982 to 2008. Specifically, the incidence rate fell by 41% for females younger than 50 (from 9.5 to 5.6 per 100,000), by 65% for females aged 50–69 (from 27.1 to 9.6) and by 50% for females aged 70 and over (from 23.8 to 12.0).

Between 1982 and 2008, the incidence rate of all gynaecological cancers combined fell significantly by 23% for females aged less than 50 (from 16.8 to 12.9 per 100,000) and by 16% for females aged 50–69 (from 103.6 to 86.6). However, the incidence rate for females aged 70 and over fluctuated considerably over the 27-year period with no statistically significantly difference observed between 1982 (124.6 per 100,000) and 2008 (132.4).

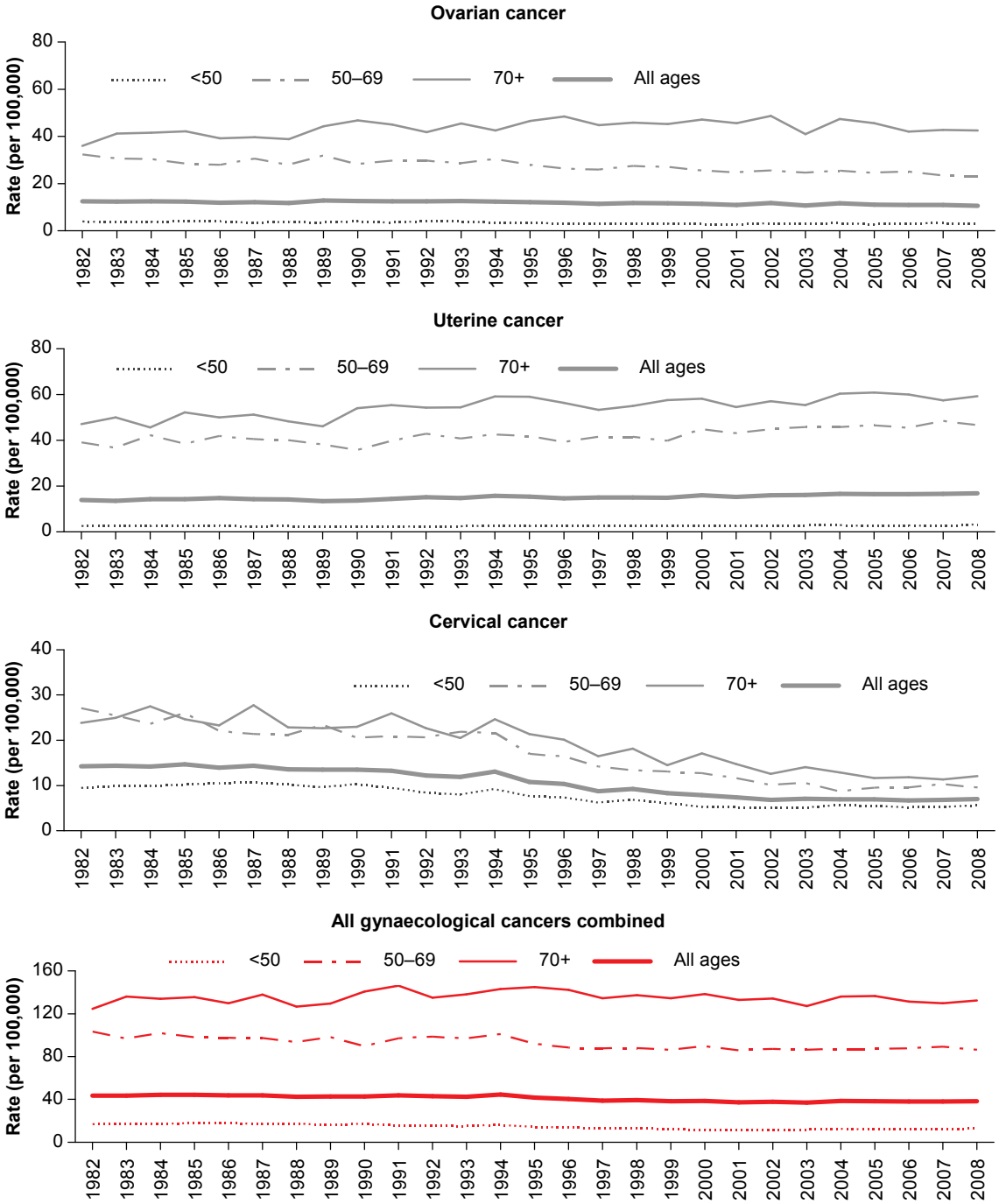


Notes

1. The rates were age-standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.
2. The scale of the y-axis differs for the individual figures shown.
3. The data for this figure are in Appendix Table D2.2.

Source: AIHW Australian Cancer Database 2008.

Figure 2.2: Incidence of ovarian, uterine and cervical cancer, and all gynaecological cancers combined, Australia, 1982 to 2008



Notes

1. The rates were age-standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.
2. The scale of the y-axis differs for the individual figures shown.
3. The data for this figure are in Appendix Table D2.3–D2.6.

Source: AIHW Australian Cancer Database 2008.

Figure 2.3 Incidence of ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by age at diagnosis, Australia, 1982 to 2008

What is the risk of being diagnosed with a gynaecological cancer?

During the 27 years from 1982 to 2008, there was an overall fall in the risk of a female being diagnosed with ovarian cancer by the age of 85: from 1 in 71 in 1982 to 1 in 79 in 2008 (Table 2.3). In contrast, the risk of being diagnosed with uterine cancer by the age of 85 rose from 1 in 60 in 1982 to 1 in 49 in 2008. The risk of being diagnosed with cervical cancer more than halved between 1982 and 2008, from 1 in 74 to 1 in 157. The risk of a female being diagnosed with any type of gynaecological cancer by the age of 85 fell slightly over time, from 1 in 21 in 1982 to 1 in 23 in 2008.

Table 2.3: Risk of being diagnosed with ovarian, uterine and cervical cancer, and any gynaecological cancer by age 85, Australia, 1982 to 2008

Year	Ovarian cancer	Uterine cancer	Cervical cancer	All gynaecological cancers combined
1982	1 in 71	1 in 60	1 in 74	1 in 21
1983	1 in 70	1 in 60	1 in 72	1 in 21
1984	1 in 69	1 in 60	1 in 72	1 in 21
1985	1 in 67	1 in 59	1 in 72	1 in 21
1986	1 in 74	1 in 57	1 in 77	1 in 21
1987	1 in 72	1 in 58	1 in 73	1 in 21
1988	1 in 74	1 in 59	1 in 77	1 in 22
1989	1 in 66	1 in 63	1 in 78	1 in 21
1990	1 in 67	1 in 59	1 in 80	1 in 21
1991	1 in 68	1 in 55	1 in 80	1 in 20
1992	1 in 69	1 in 55	1 in 85	1 in 21
1993	1 in 66	1 in 55	1 in 87	1 in 21
1994	1 in 69	1 in 52	1 in 78	1 in 20
1995	1 in 67	1 in 52	1 in 98	1 in 21
1996	1 in 70	1 in 56	1 in 100	1 in 22
1997	1 in 74	1 in 54	1 in 120	1 in 22
1998	1 in 69	1 in 55	1 in 112	1 in 22
1999	1 in 73	1 in 55	1 in 125	1 in 23
2000	1 in 73	1 in 52	1 in 127	1 in 23
2001	1 in 75	1 in 54	1 in 139	1 in 23
2002	1 in 69	1 in 51	1 in 156	1 in 23
2003	1 in 77	1 in 51	1 in 148	1 in 23
2004	1 in 72	1 in 49	1 in 153	1 in 23
2005	1 in 74	1 in 50	1 in 157	1 in 23
2006	1 in 76	1 in 50	1 in 161	1 in 23
2007	1 in 78	1 in 50	1 in 157	1 in 23
2008	1 in 79	1 in 49	1 in 157	1 in 23

Source: AIHW Australian Cancer Database 2008.

How many females are expected to be diagnosed with a gynaecological cancer in 2020?

In this section, national projections of ovarian, uterine and cervical cancer incidence from 2011 to 2020 are presented (Figure 2.4). These projections are mathematical extrapolations of past trends, assuming that the same trend will continue into the future. They are intended to illustrate future changes that might reasonably be expected to occur if the stated assumptions were to apply over the projection period. The projections are not forecasts and do not attempt to allow for future changes in cancer detection methods, changes in cancer risk factors or for non-demographic factors (such as major government policy changes and economic differences) that may affect future cancer incidence rates.

The nature of the projection method used and inherent fluctuations in both cancer trends and population dynamics mean that care should be taken when using and interpreting the projections results in this report. No liability will be accepted by the AIHW or Cancer Australia for any damages arising from decisions or actions based on these cancer projections.

The projection estimates, and the method by which they were derived, are detailed in the AIHW report titled *Cancer incidence projections: Australia, 2011 to 2020* (AIHW 2012a). Note that the projections were based on national cancer incidence data from 1982 to 2007.

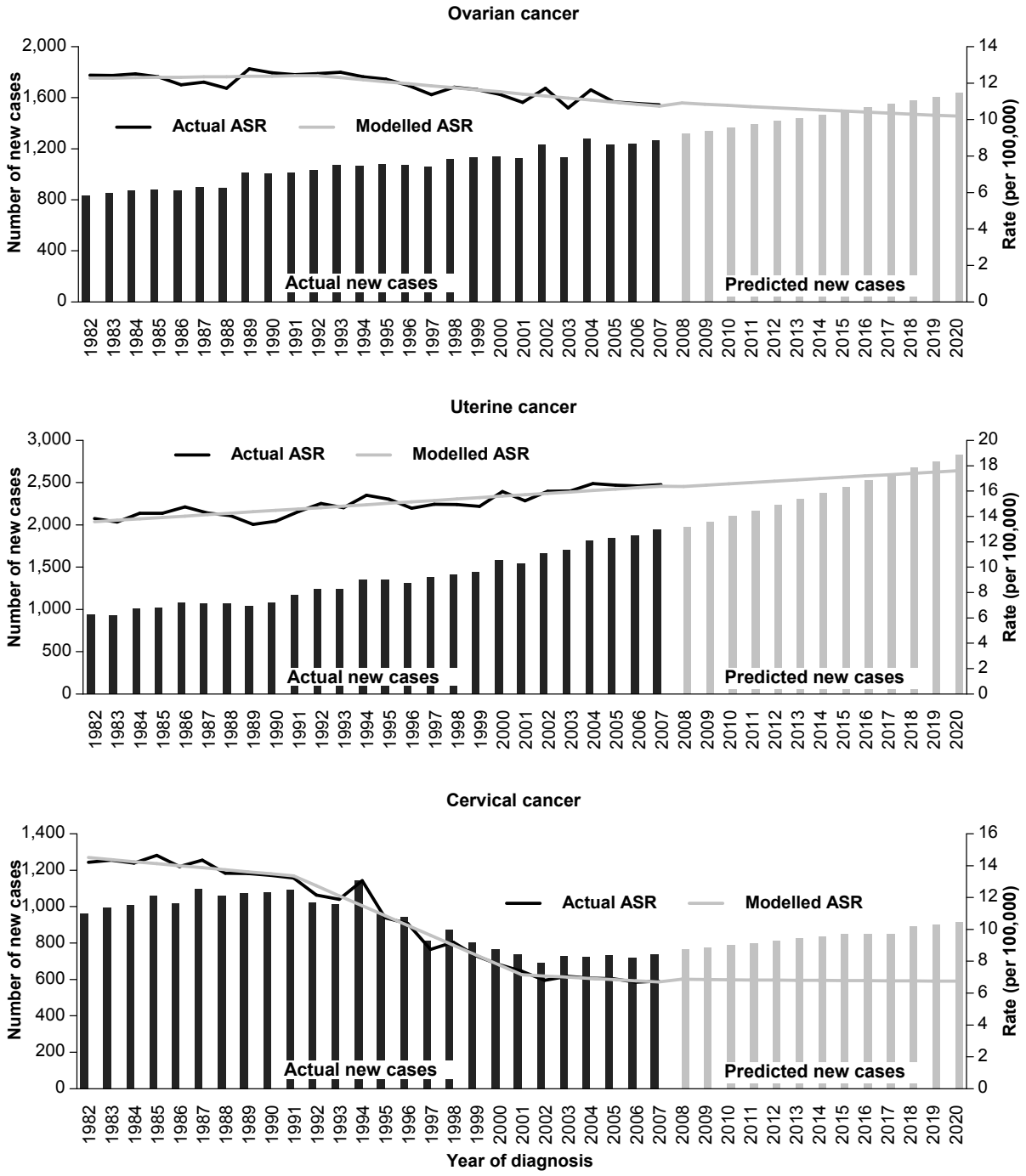
The number of females diagnosed with ovarian cancer is expected to continue to increase in the future. In 2012, the number of new ovarian cancers diagnosed is expected to be 1,420; in 2020, this number is expected to have increased to 1,640. When expected changes in the age structure and size of the population are taken into account, the results suggest that the age-standardised incidence rate of ovarian cancer will continue to fall slightly to 2020, reaching 10.2 new cases per 100,00 females in that year.

The number of new uterine cancers is expected to rise in the future, with an estimated 2,240 new cases in 2012 increasing to 2,830 cases in 2020. The results also indicate that the age-standardised incidence rate of uterine cancer will continue to rise to 2020 when the rate is expected to reach 17.6 cases per 100,000 females.

Similar to ovarian and uterine cancer, the number of females diagnosed with cervical cancer is expected to rise until 2020. The projections suggest that 815 new cases of cervical cancer will be diagnosed in 2012 and by 2020 this number will have reached 915 cases. The age-standardised incidence rate of cervical cancer is expected to remain constant between 2012 and 2020, at around 7 new cases per 100,000 females (see Box 2.2).

Box 2.2: The effect of the National HPV Vaccination program on the incidence of cervical cancer and interpreting the data

It is known that cervical cancer is a rare outcome of persistent infection with human papillomavirus (HPV) (Bosch et al. 2002; Walboomers et al. 1999). As a result of this knowledge, Australia introduced the National HPV Vaccination Program in April 2007 to protect young Australian women against infection with HPV and further reduce cervical cancer incidence (AIHW 2011a). The effect of the HPV vaccination program on incidence of cervical cancer will not be evident for some time, and is not accounted for in these projections; however, the potential effects should be considered when interpreting these data.



Notes

1. The rates were age-standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.
2. The scale of the y-axis differs for the individual figures shown.
3. The projections are not forecasts and do not attempt to allow for future changes in cancer detection methods, cancer risk factors or non-demographic factors beyond the base years of the model which may affect future cancer incidence rates (for example, these projections do not include adjustment for anticipated changes in trend, as would be expected to emerge for cervical cancer in young women, due to effects of HPV vaccination).
4. The data for this figure are in Appendix Table D2.7.

Source: AIHW 2012a.

Figure 2.4: Incidence of ovarian, uterine and cervical cancer, observed for 1982 to 2007 and projected to 2020

Do incidence rates differ across population groups?

In this section, data on the incidence of ovarian, uterine and cervical cancer, and all gynaecological cancers combined are provided according to state and territory, remoteness area, socioeconomic status, Aboriginal and Torres Strait Islander status and country of birth. Due to small numbers, data for vaginal and vulval cancer are not presented in this section.

To take into account differences in age structures and size of the groups being compared, age-standardised rates are provided for each of the comparisons. The data are presented for the 5 years from 2004 to 2008 rather than for just 1 year, since presenting data for multiple years reduces random variation in rates. This is especially important when comparing small groups (for example, Aboriginal and Torres Strait Islander females or populations in smaller states and territories).

Rate ratios are used in this section to indicate the relative incidence between different groups (See Appendix B for more detail).

Observed differences by the characteristics examined in this section may result from a number of factors, including variations in:

- population characteristics (for example, a relatively greater proportion of Aboriginal and Torres Strait Islander females in remote areas)
- the prevalence of risk factors
- the availability of diagnostic services
- the level of participation in the National Cervical Screening Program.

Variations by state and territory would reflect differences in population characteristics but also potential differences in cancer detection rates and cancer registry practices.

Does incidence differ by state and territory?

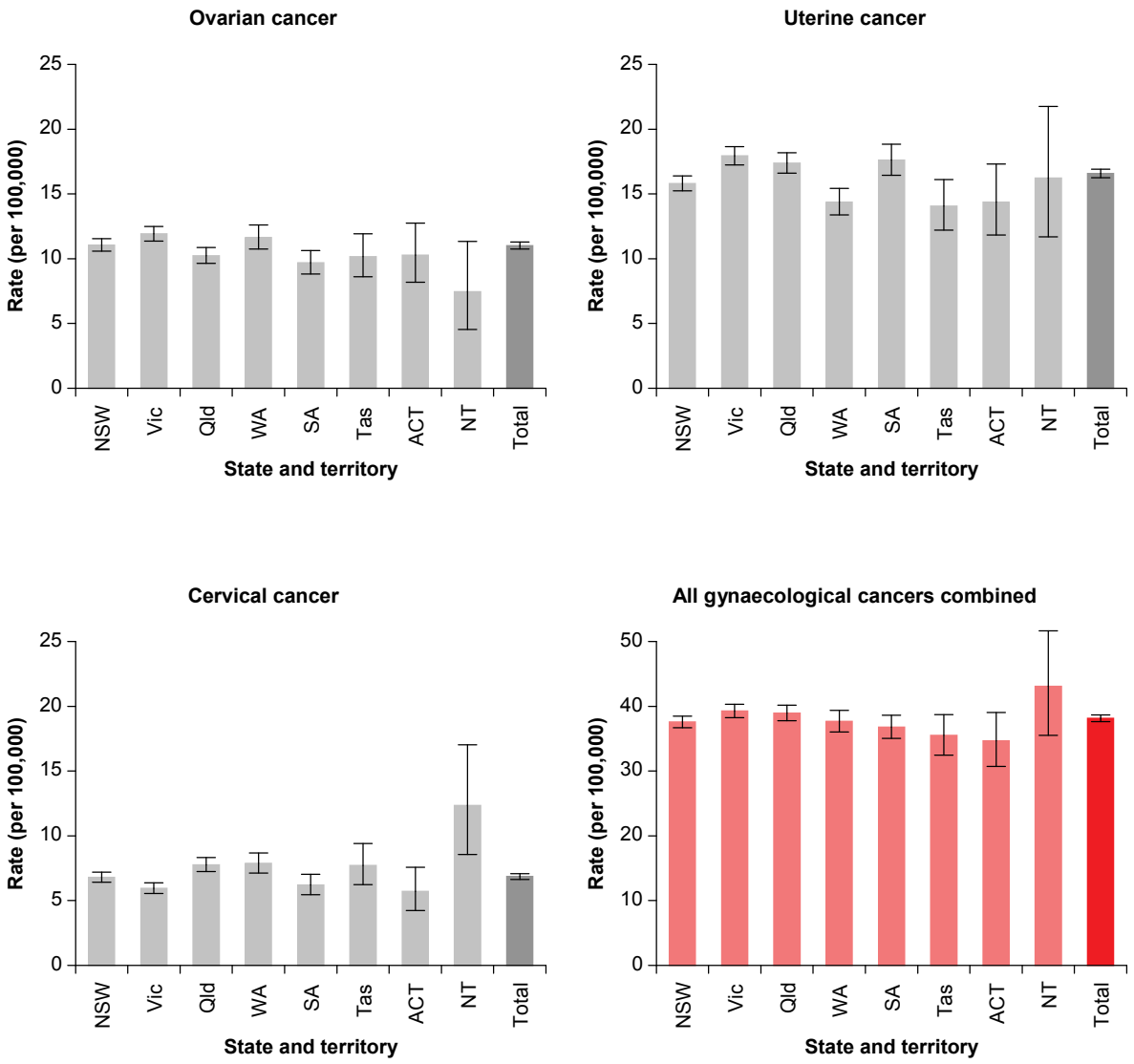
Between 2004 and 2008, the largest number of gynaecological cancers were diagnosed in New South Wales (7,164 cases), with 2,130 ovarian cancers, 3,038 uterine cancers and 1,226 cervical cancers. The smallest number of gynaecological cancers diagnosed was in the Northern Territory (160 cases), with 28 ovarian cancers, 58 uterine cancers and 50 cervical cancers (Appendix Table D2.8).

Figure 2.5 shows differences in age-standardised incidence rates of ovarian, uterine and cervical cancer, and all gynaecological cancers combined by state and territory between 2004 and 2008.

The incidence rate of ovarian cancer was highest in Victoria (11.9 per 100,000) and lowest in the Northern Territory (7.5). The rate for Victoria was significantly higher than the rates for Queensland (10.2 per 100,000), South Australia (9.7) and the Northern Territory (7.5). The rate for the Northern Territory was significantly lower than the rate for Victoria (11.9 per 100,000). No other differences were statistically significant.

The highest incidence rate of uterine cancer was in Victoria (17.9 per 100,000), which was significantly higher than the rates for New South Wales, Western Australia and Tasmania (15.8, 14.4 and 14.1, respectively). Tasmania had the lowest incidence rate of uterine cancer (14.1 per 100,000). This rate was significantly lower than that for Victoria (17.9), Queensland (17.4) and South Australia (17.6).

While the incidence rates of ovarian and uterine cancer were highest in Victoria between 2004 and 2008, the rate of cervical cancer was lowest in this jurisdiction (5.9 per 100,000). The rate in Victoria was significantly lower than that for Queensland (7.8), Western Australia (7.9) and the Northern Territory (12.3).



Notes

1. The rates were age-standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females. The rates are based on the total number of cases over the 5 years from 2004 to 2008.
2. The error bars (symbol) represent 95% confidence intervals.
3. The scale of the y-axis differs for the individual figures shown.
4. The data for this figure are shown in Appendix Table D2.8.

Source: AIHW Australian Cancer Database 2008.

Figure 2.5: Incidence of ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by state and territory, Australia, 2004–2008

The highest incidence rate of cervical cancer was for the Northern Territory (12.3 per 100,000), with this rate significantly higher than the rate for New South Wales (6.8), Victoria (5.9), Queensland (7.8), South Australia (6.2) and the Australian Capital Territory (5.7).

For all gynaecological cancers combined between 2004 and 2008, the highest incidence rate was in the Northern Territory (43.1 per 100,000), while lowest was in the Australian Capital Territory (34.7). However, there were no significant differences in incidence rates between any of the jurisdictions.

The difference in incidence rates of gynaecological cancers between states and territories may be explained by variations in the underlying risk of developing a gynaecological cancer, the availability and utilisation of diagnostic procedures and coding differences as well as normal incidence rate fluctuations.

Does incidence differ by remoteness area?

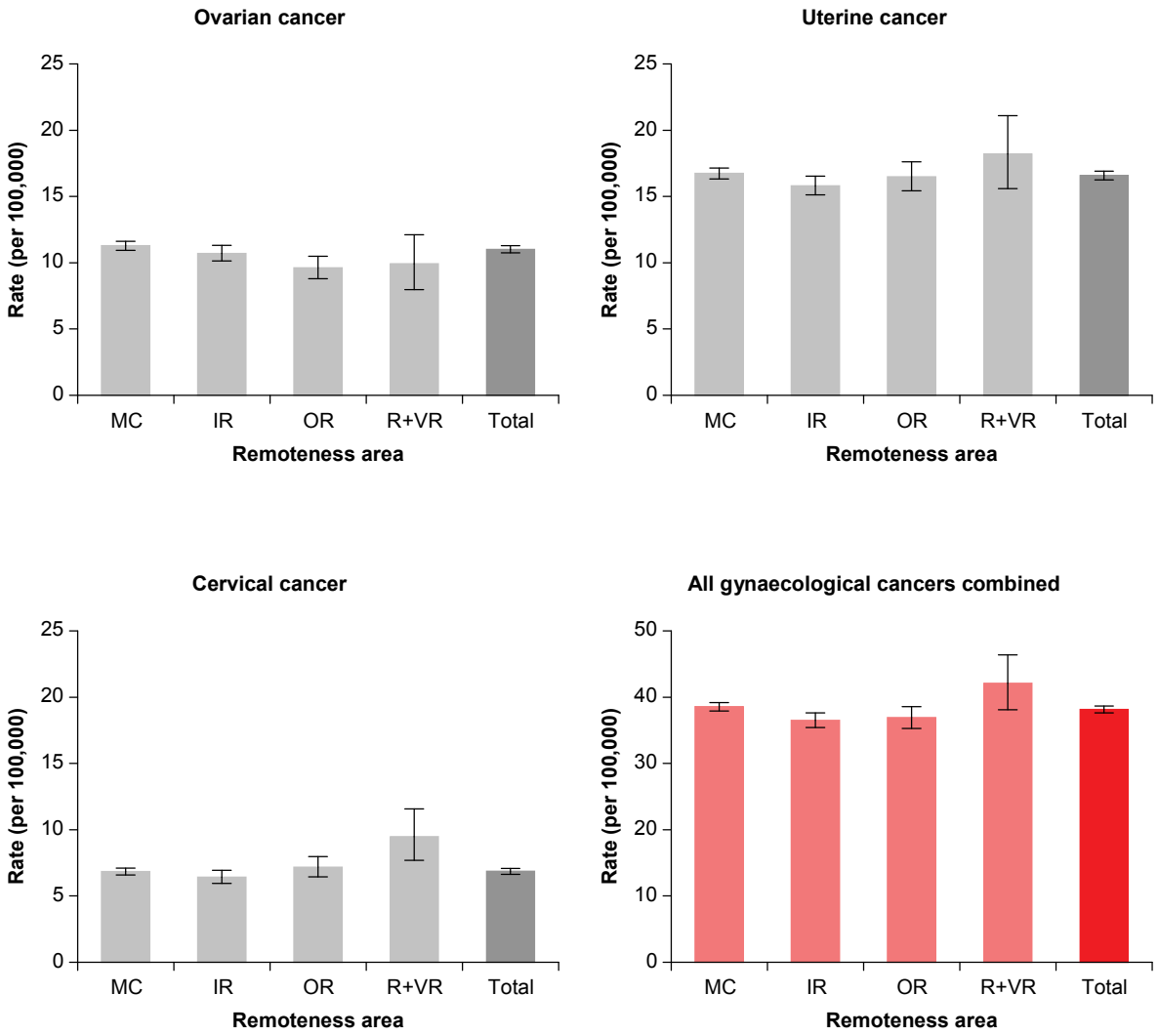
Age-standardised incidence rates according to level of remoteness of the area in which the females lived at diagnosis are shown in Figure 2.6 for ovarian, uterine and cervical cancer, and all gynaecological cancers combined. The Australian Standard Geographical Classification Remoteness Area (ABS 2006) was used to allocate remoteness categories to areas across Australia. This classification divides all areas into five categories: *Major cities*, *Inner regional*, *Outer regional*, *Remote* and *Very remote* (AIHW 2004). For this report, the categories of *Remote* and *Very remote* were collapsed due to the small number of cases in these two subgroups. More information about this classification is in Appendix A and at <http://www.abs.gov.au/websitedbs/D3310114.nsf/home/remoteness+structure>.

Between 2004 and 2008, the age-standardised incidence rate of ovarian cancer was highest in *Major cities* (11.3 per 100,000 females), with this rate significantly higher than the rate in *Outer regional* areas (9.6) only—1.2 times the rate for *Outer regional* areas.

The highest incidence rate of uterine cancer was in *Remote and very remote* areas (18.2 per 100,000), although this rate was not significantly different from that of other areas.

The age-standardised incidence rate of cervical cancer was significantly higher in *Remote and very remote* areas (9.5 per 100,000) than in *Major cities* (6.8) and *Inner regional* areas (6.4). Specifically, the rate in *Remote and very remote* areas was 1.4 times the rate in *Major cities* and 1.5 times the rate in *Inner regional* areas.

The highest incidence rate of all gynaecological cancers combined was in *Remote and very remote* areas (42.1 per 100,000), while the second highest rate was in *Major cities* (38.5). While these two rates were not significantly different from each other, they were both significantly higher than that in *Inner regional* areas (36.5)—1.2 and 1.1 times *Inner regional* areas, respectively.



Notes

1. Remoteness was classified according to the Australian Standard Geographical Classification (ASGC) Remoteness Areas (See Appendix A), showing 'MC' as Major cities, 'IR' as Inner regional, 'OR' as Outer regional and 'R+VR' as Remote and very remote areas.
2. The rates were age-standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females. The rates are based on the total number of cases over the 5 years from 2004 to 2008.
3. The error bars (symbol) represent 95% confidence intervals.
4. The 'Total' column includes cases for which information on remoteness area was not available.
5. The scale of the y-axis differs for the individual figures shown.
6. The data for this figure are shown in Appendix Table D2.9.

Source: AIHW Australian Cancer Database 2008.

Figure 2.6: Incidence of ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by remoteness area, Australia, 2004–2008

Does incidence differ by socioeconomic status?

In this report, the Index of Relative Socio-economic Disadvantage (IRSD) is used to indicate socioeconomic status (ABS 2008b). The IRSD scores each area by summarising attributes of the population such as low income, low educational attainment, high unemployment and jobs in relatively unskilled occupations. Note that the IRSD is an area-based measure of

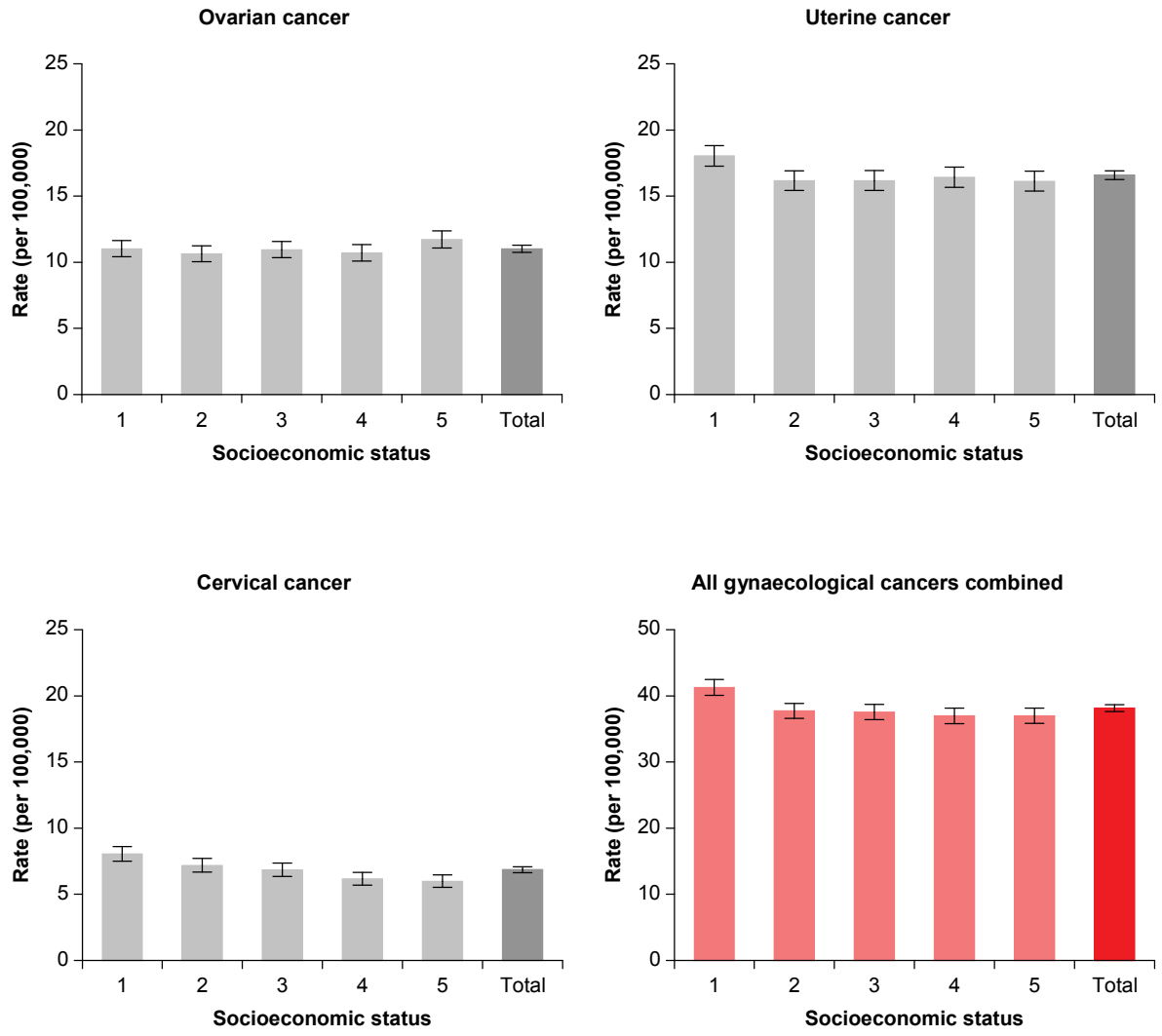
socioeconomic status—rather than a person-based measure—in which small areas of Australia are classified on a continuum from disadvantaged to affluent. In this report, the first socioeconomic status group (labelled '1') corresponds to geographical areas containing the 20% of the population with the lowest socioeconomic status according to the IRSD, and the fifth group corresponds to the 20% of the population with the highest status. Appendix A has further information about the IRSD.

As shown in Figure 2.7, between 2004 and 2008, the age-standardised incidence rates of ovarian cancer did not differ significantly by socioeconomic status.

For uterine cancer, females in the lowest socioeconomic status group (group 1) had a significantly higher age-standardised incidence rate (18.0 per 100,000) than females in other socioeconomic status groups. Specifically, the rate for females in the lowest socioeconomic group was 1.1 times higher than that of females in other groups.

The incidence rate of cervical cancer tended to decrease with improving socioeconomic status. The highest incidence rate was for females in the lowest socioeconomic status group (group 1) (8.0 per 100,000), which was significantly higher than the rates for the three highest groups (group 3 to 5). In particular, females in the lowest socioeconomic status group had 1.2 times the rate of group 3 and 1.3 times the rate of both group 4 and 5.

For all gynaecological cancers combined, females in the lowest socioeconomic status group (41.3 per 100,000) had a significantly higher incidence rate than females in other groups (1.1 times the rate for each of the other groups).



Notes

1. Socioeconomic status was classified using the ABS index of Relative Socio-economic Disadvantage (See Appendix A), showing '1' as lowest socioeconomic status to '5' as highest socioeconomic status.
2. The rates were age-standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females. The rates are based on the total number of cases over the 5 years from 2004 to 2008.
3. The error bars (symbol) represent 95% confidence intervals.
4. The 'Total' column includes cases for which information on socioeconomic status was not available.
5. The scale of the y-axis differs for the individual figures shown.
6. The data for this figure are shown in Appendix Table D2.10.

Source: AIHW Australian Cancer Database 2008.

Figure 2.7: Incidence of ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by socioeconomic status, Australia, 2004–2008

Does incidence differ by Aboriginal and Torres Strait Islander status?

Across a range of health-related and socioeconomic indicators, Aboriginal and Torres Strait Islander people show disadvantage relative to other Australians. They are also more likely to live in remote areas and have a relatively younger age structure, with a median age of 21 years compared with 37 years for the non-Indigenous population (AIHW 2011d). This age

difference is thought to be largely due to higher rates of fertility, as well as a shorter life expectancy among the Aboriginal and Torres Strait Islander population (ABS 2009d, 2009e).

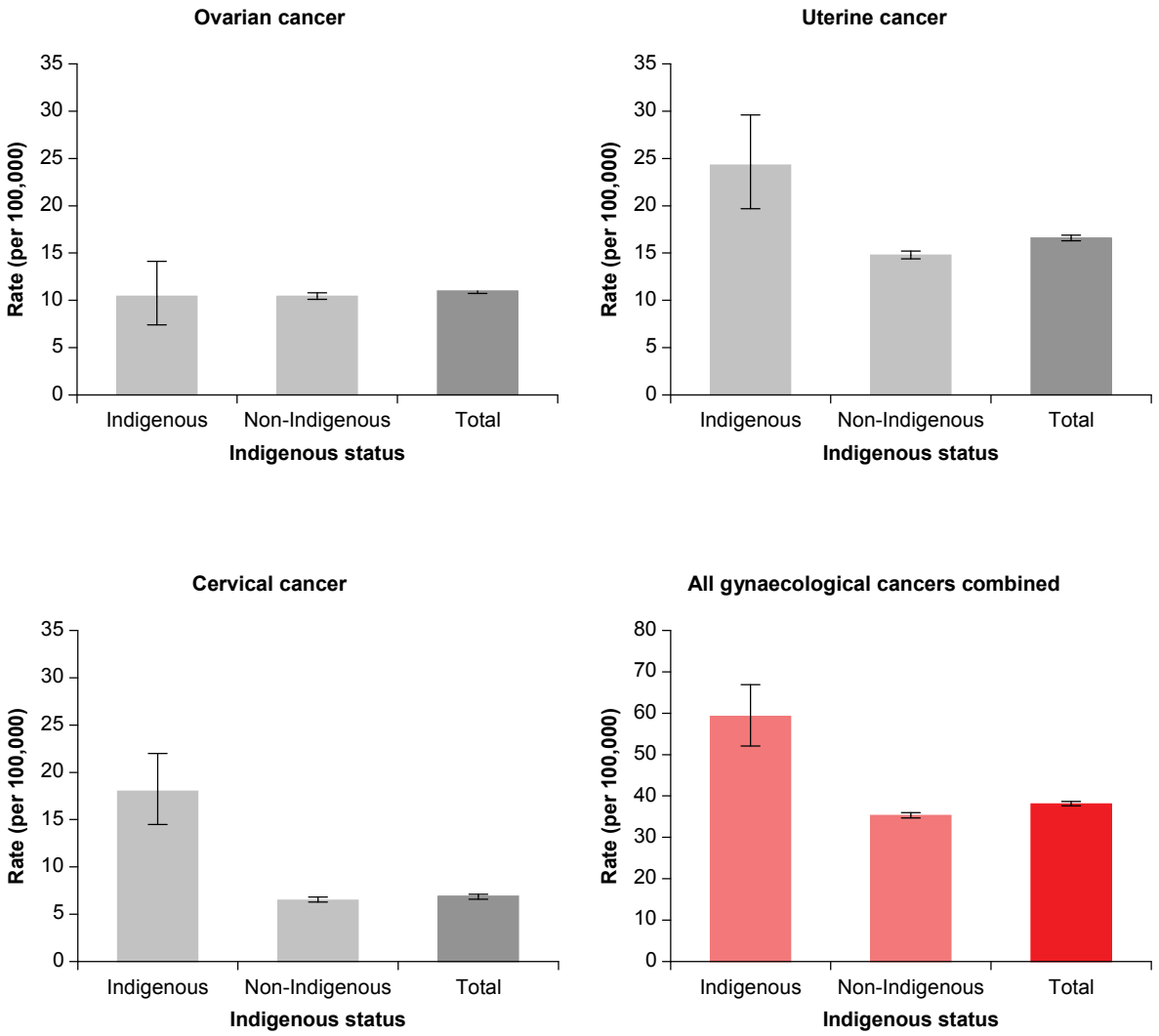
Reliable national data on the incidence of cancer for Aboriginal and Torres Strait Islander females are not available. While all state and territory cancer registries collect Aboriginal and Torres Strait Islander status information, the quality of the data in some areas is insufficient for analysis. In this report, data for four states and territories—New South Wales, Queensland, Western Australia and the Northern Territory—are considered of sufficient quality, and have been used to examine the incidence of gynaecological cancers by Aboriginal and Torres Strait Islander status. While the majority (84%) of Aboriginal and Torres Strait Islander females live in these four jurisdictions (ABS 2009b), the degree to which data for these jurisdictions are representative of data for all Aboriginal and Torres Strait Islander females is unknown.

For the four jurisdictions, the level of missing data on Aboriginal and Torres Strait Islander status for ovarian, uterine and cervical cancer diagnosed from 2004 to 2008 ranged between 4% and 8%. The level of missing data for all gynaecological cancers combined was 6%.

From 2004 to 2008, there were 332 new gynaecological cancers diagnosed among Aboriginal and Torres Strait Islander females. Cervical cancer was the most commonly diagnosed gynaecological cancer among Aboriginal and Torres Strait Islander females (121 cases), followed by uterine cancer (120) and ovarian cancer (54) (Appendix Table D2.11).

Note that the mean age at which females were diagnosed with cancer differed by Aboriginal and Torres Strait Islander status for all the individual types of gynaecological cancer as well as for all gynaecological cancers combined, with Aboriginal and Torres Strait Islander females being younger at diagnosis than non-Indigenous females. For example, for all gynaecological cancers combined the mean age at diagnosis was 52 years for Aboriginal and Torres Strait Islander females, compared with 62 years for non-Indigenous females (Appendix Table D2.11).

Figure 2.8 shows differences in incidence rates according to Aboriginal and Torres Strait Islander status for 2004 to 2008. There was no statistically significant difference in the age-standardised incidence rate of ovarian cancer for Aboriginal and Torres Strait Islander females compared with non-Indigenous females (10.4 per 100,000 for both groups). However, the incidence rates of uterine and cervical cancer, and all gynaecological cancers combined were significantly higher for Aboriginal and Torres Strait Islander females than non-Indigenous females. Aboriginal and Torres Strait Islander females were 1.6 times as likely to be diagnosed with uterine cancer (24.3 versus 14.8 per 100,000), 2.8 times as likely to be diagnosed with cervical cancer (18.0 versus 6.5) and 1.7 times as likely to be diagnosed with all gynaecological cancers combined (59.2 versus 35.3) as their non-Indigenous counterparts (Figure 2.8).



Notes

1 The rates were age-standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females. The rates are based on the total number of cases over the 5 years from 2004 to 2008.

2. The error bars (symbol) represent 95% confidence intervals.

3. The 'Total' column includes cases for which information on Aboriginal and Torres Strait Islander status was not available.

4. Some states and territories use an imputation method for determining Indigenous cancers, which may lead to differences between these data and those shown in jurisdictional cancer incidence reports.

5. The scale of the y-axis differs for the individual figures shown.

6. The data for this figure are shown in Appendix Table D2.11.

Source: AIHW Australian Cancer Database 2008.

Figure 2.8: Incidence of ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by Aboriginal and Torres Strait Islander status, New South Wales, Queensland, Western Australia and the Northern Territory, 2004–2008

Does incidence differ by country of birth?

Australia has one of the largest proportions of immigrant populations in the world. In 2006, it was home to 4.4 million overseas-born people and one in four (25%) residents was born outside the country (ABS 2009a). Research has found that most immigrants are at least as healthy, if not more so, compared with the Australian-born population. The 'healthy migrant

effect' is believed to result from two main factors: a self-selection process in which those people who are physically and economically able to migrate are the ones who do; and government eligibility criteria for migrants based on health, education, language and job skills (AIHW 2010c).

Immigrants are more likely than Australian-born people to live in urban areas (ABS 2009a); this often provides immigrants with relatively easier access to health-care services. At the same time, language and cultural barriers may mean that some immigrants are less likely or able to access available services.

Note that data by country of birth do not take into account the length of time the immigrants lived in Australia, although some groups—for instance, people from Asia—tend to be more recent immigrants while people from many European countries tend to have been in Australia for longer (ABS 2009a).

In this report, country-of-birth data were classified using the Standard Australian Classification of Countries (SACC), second edition. Further information about this classification is in Appendix A.

In Figure 2.9, incidence rates of ovarian, uterine and cervical cancer, and all gynaecological cancers combined are shown according to country of birth. Note that the level of missing data on country of birth status for ovarian, uterine and cervical cancer cases diagnosed between 2004 and 2008 ranged from 4% to 9%. For all gynaecological cancers combined the level of missing data was 6%.

Over the 5-year period from 2004 to 2008, the highest age-standardised rate of ovarian cancer was in females living in Australia who were born in the United States of America and Canada (15.8 per 100,000), although this rate was not significantly different from the rate for Australian-born females (10.4). Females born in North-East Asia had the lowest rate of ovarian cancer (7.8). This rate was significantly lower than that for females born in Australia.

Females living in Australia who were born in Oceania and Antarctica excluding Australia and New Zealand had the highest age-standardised incidence rate of uterine cancer (35.1 per 100,000), which was significantly higher than the rates for females born in other regions and countries around the world, including Australia (15.6). The rate for females born in Southern and Eastern Europe (17.5) was also significantly higher than that for females born in Australia. The rate for females who were born in the United Kingdom and Ireland (13.1) was the only rate significantly lower than that for Australian-born females.

In addition to the highest uterine cancer incidence rate, females born in Oceania and Antarctica excluding Australia and New Zealand had the highest age-standardised incidence rate of cervical cancer (16.2 per 100,000) between 2004 and 2008. This rate, along with the rate for females born in New Zealand (9.8), was significantly higher than that for females born in Australia (6.3). Females born in North Africa and the Middle East had significantly lower cervical cancer incidence rate (3.4) than Australian-born females.

The highest age-standardised incidence rate of all gynaecological cancer combined between 2004 and 2008 occurred among females born in Oceania and Antarctica excluding Australia and New Zealand (65.0 per 100,000), which was almost twice as high as the rate for Australian-born females (35.9), and was also significantly higher than the rates for females born in all other regions and countries. The only incidence rate significantly lower than the rate for Australian-born females was the rate for females born in North-East Asia (27.1).

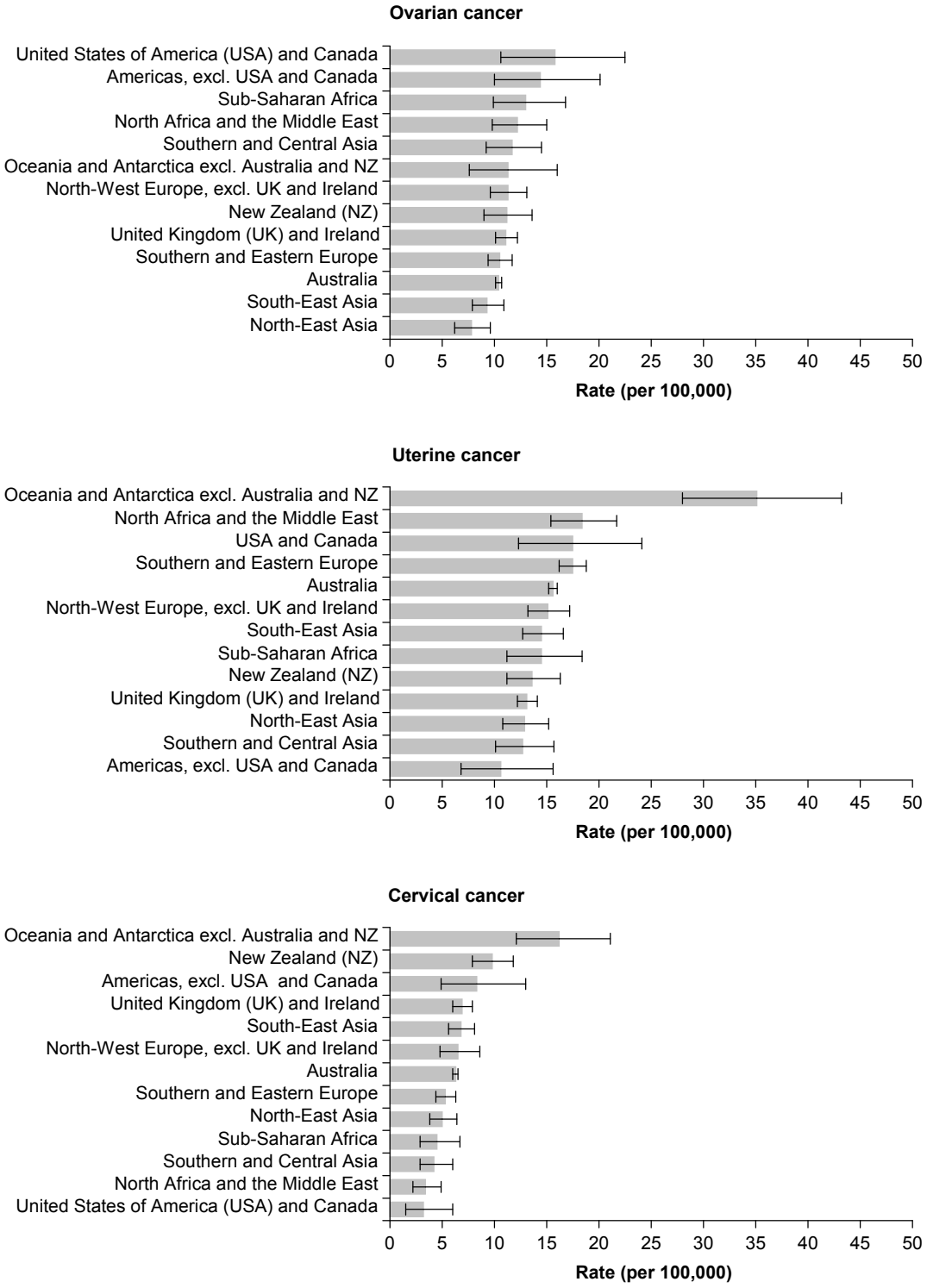
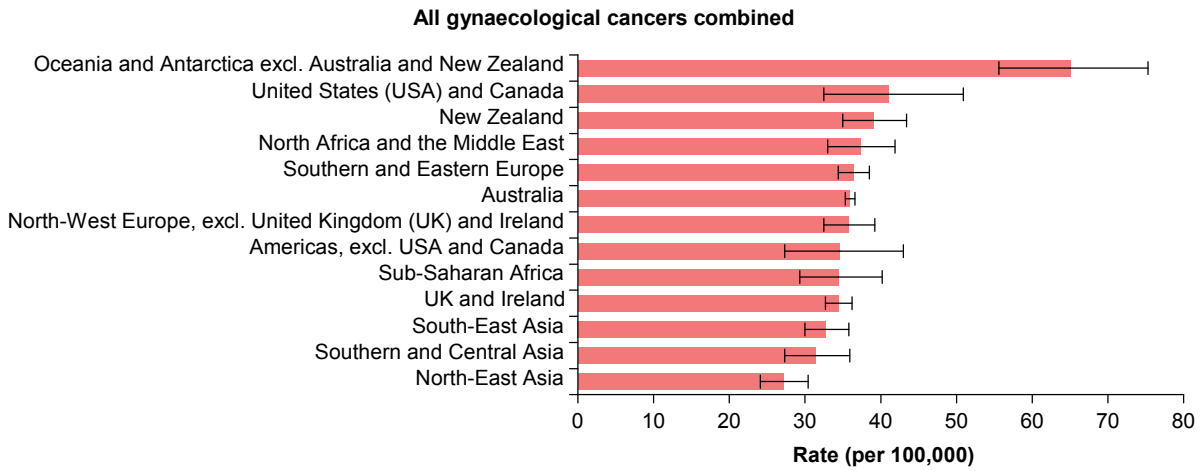


Figure 2.9: Incidence of ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by country/region of birth, Australia, 2004–2008

(continued)



Notes

1. Country of birth is classified according to the Standard Australian Classification of Countries, 2nd edition (See Appendix A).
2. The rates were age-standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females. The rates are based on the total number of cases over the 5-year from 2004 to 2008.
3. The error bars (symbol) represent 95% confidence intervals.
4. The scale of the x-axis differs for the individual figures shown.
5. The data for this figure are shown in Appendix Table D2.12.

Source: AIHW Australian Cancer Database 2008.

Figure 2.9 (continued): Incidence of ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by country/region of birth, Australia, 2004–2008

How does incidence in Australia compare with the world incidence?

In this section, the incidence rates of ovarian, uterine, and cervical cancer in Australia are compared with those for other countries and regions, with the rates age-standardised to the World Standard Population (Doll et al. 1966). The data were sourced from the GLOBOCAN database, which is prepared by the International Agency for Research on Cancer (IARC) (Ferlay et al. 2010a). The most recent GLOBOCAN estimates are for 2008, with these estimates based on incidence from about 3 to 5 years earlier. Data for other types of gynaecological cancer are not available in the GLOBOCAN database.

The GLOBOCAN data for ovarian cancer pertain to cancers coded in ICD-10 as C56, uterine cancer to cancers coded as C54 and cervical cancer coded as C53. Note that the definition of uterine cancer is different from that generally considered in this report which not only pertains to cancers coded in ICD-10 as C54 but also C55. See Appendix C for further details about this database.

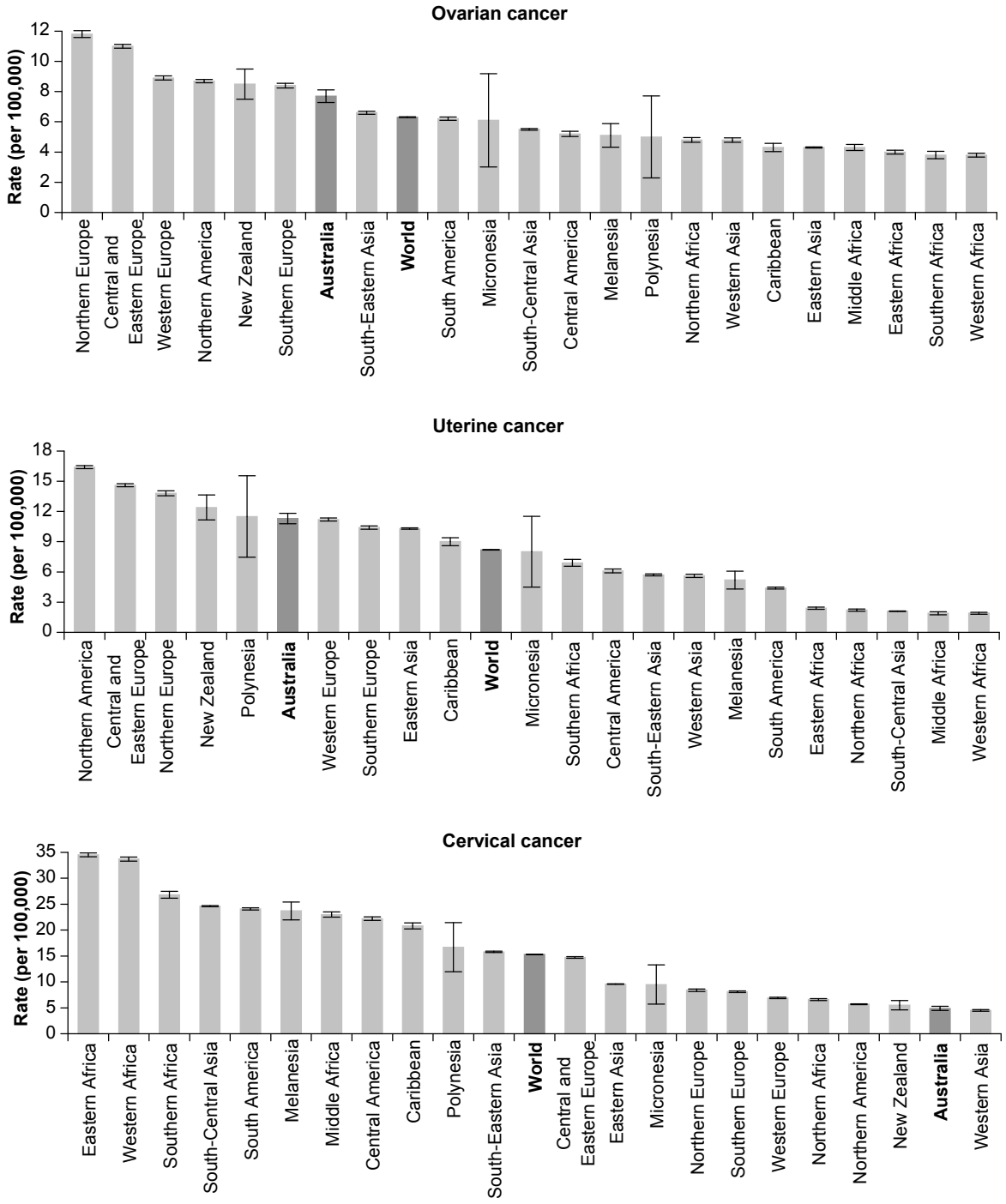
As discussed in Chapter 1, caution must be taken when comparing data from different countries because observed differences may be the result of a range of methodological factors, not just differences in the underlying rates.

Figure 2.10 shows the estimated incidence rates of ovarian, uterine and cervical cancer for Australia and New Zealand and other regions of the world. The estimated age-standardised incidence rate of ovarian cancer for Australia in 2008 was 7.7 per 100,000. This rate was

significantly higher than the average world rate (6.3) as well as the rates for all the African and Asian regions. The Australian rate was significantly lower than the rates for other westernised countries and regions (excluding New Zealand), including all of the European regions (which ranged from 8.4 to 11.8) and Northern America (8.7).

Similarly to ovarian cancer incidence, the estimated age-standardised incidence rate of uterine cancer for Australian females (11.3 per 100,000 females) was significantly higher than the world average (8.2), as well as all the African and Asian regions. Moreover, the rate estimated for Australian females was significantly lower than that for females in Northern America (16.4), Central and Eastern Europe (14.6), and Northern Europe (13.8).

The estimated age-standardised incidence rate of cervical cancer for Australian females was one of the lowest in the world (4.9 per 100,000). It was significantly lower than the rates for all other regions around the world, except New Zealand and Western Asia.



Notes

1. The data were estimated for 2008 and are based on data from about 3 to 5 years earlier.
2. The rates were age-standardised by the IARC using the Doll et al. (1966) World Standard Population. The confidence intervals (as shown by the error bars) are approximations and were calculated by the AIHW (see Appendix B).
3. The error bars (symbol) represent 95% confidence intervals.
4. The scale of the y-axis differs for the different figures.
5. The data for this figure are shown in Appendix Table D2.13.

Source: Ferlay et al. 2010a.

Figure 2.10: International comparison of estimated incidence of ovarian, uterine and cervical cancer, 2008

What are the most common types of gynaecological cancers?

The data presented thus far in the chapter have related to the site of origin of the cancer (for example, the ovaries). In addition to the site of origin, cancers can also be classified according to the type of cell that has become cancerous, which is referred to as the histological type. For each of the individual gynaecological cancers, there are a number of histological types. Each of the types is associated with different risk factors, behaviour and responsiveness to therapeutic interventions.

In this section, data on the incidence of ovarian, uterine and cervical cancer are provided according to histology. Data on the histological types of vaginal and vulval cancer are provided in Appendix Tables D2.17–D2.24.

The histological groupings presented for ovarian, uterine and cervical cancer were based primarily on documentation from the IARC (Egevad et al. 2007), while the histological groupings for vaginal and vulval cancer were based on documentation from the Surveillance Epidemiology End Results (SEER) (Kosary 2007a, 2007b).

The percentage figures generated for specific histology types may often understate the actual percentage figures due to inclusion of the '*Not otherwise specified*' category in the percentage distribution.

What are the most common types of ovarian cancer?

Based on the recommendations by the IARC (Egevad et al. 2007), ovarian cancer was disaggregated into five main categories: *Carcinoma (*which is also referred to as *Epithelial tumours*), *Sex cord-stromal tumours, Germ cell tumours, Other specified malignant neoplasms* and *Unspecified malignant neoplasms*.

The group of *Carcinoma* was further split into *Serous carcinoma*, *Mucinous carcinoma*, *Endometrioid carcinoma*, *Clear cell Carcinoma*, *Adenocarcinoma not otherwise specified* and *Other carcinoma*. Various *Adenocarcinomas* that actually belong to the first four categories of *Carcinoma* may be included in *Adenocarcinoma not otherwise specified* as they cannot always be allocated to these four categories with certainty (Egevad et al. 2007). Therefore the percentage figures generated from the first four *Carcinomas* categories may be an understatement of the actual percentage figures.

The histological types of ovarian cancer included in each group and subgroup are in Appendix Table D2.14.

In 2008, 85% of ovarian cancers were classified as C*arcinoma*, with the most common type within this group being *Serous carcinoma* (51% of carcinomas). Meanwhile, 1% of ovarian cancers were classified as *Sex cord-stromal tumours*, 3% were classified as *Germ cell tumours* and 4% were classified as *Other specified malignant neoplasm*. The histological type *Unspecified malignant neoplasm* was 1 in 14 (7%) of ovarian cancer cases (Table 2.4).

Does the age at diagnosis differ for the different types of ovarian cancer?

In 2008, the mean age at diagnosis was highest for those cases in which the type of ovarian cancer was *Unspecified malignant neoplasm* (78 years) (Table 2.4). In contrast, the mean age at diagnosis was lowest for females diagnosed with *Germ cell tumours* (35 years). The mean age

for females diagnosed with *Carcinoma* was 64 years, but considerable variation was seen across the various types of carcinomas (ranging between 56 and 73 years).

Table 2.4: Incidence and average age at diagnosis of ovarian cancer, by histological type, Australia, 2008

	Incidence			Average age at diagnosis	
Type of ovarian cancer[(a)]	Number of new cases	Percentage of ovarian cancers	Percentage of carcinomas	Mean age	Median age
Carcinoma	1,081	85.0	100.0	63.7	63.0
Serous carcinoma	*556*	*43.7*	*51.4*	*63.6*	*63.0*
Mucinous carcinoma	*80*	*6.3*	*7.4*	*55.8*	*55.5*
Endometrioid carcinoma	*111*	*8.7*	*10.3*	*56.4*	*55.0*
Clear cell carcinoma	*83*	*6.5*	*7.7*	*55.6*	*54.0*
Adenocarcinoma not otherwise specified[(b)]	*167*	*13.1*	*15.4*	*72.8*	*75.0*
Other carcinoma	*84*	*6.6*	*7.8*	*71.0*	*76.5*
Sex cord-stromal tumours	12	0.9	. .	44.1	41.5
Germ cell tumours	38	3.0	. .	35.0	35.0
Other specified malignant neoplasm	49	3.9	. .	67.2	69.0
Unspecified malignant neoplasm	92	7.2	. .	78.1	83.0
Total	**1,272**	**100.0**	. .	**63.8**	**63.0**

. . Not applicable

(a) All cases were coded as primary site, invasive ovarian cancers (ICD-10 code of C56). Appendix Table D2.14 provides a list of the histological types included in each group.

(b) This group may include tumours in the first four categories of carcinoma for which the description was not sufficient to allocate a specific morphology code.

Source: AIHW Australian Cancer Database 2008.

Further information about the relationship between age and histological type of ovarian cancer in 2008 is in Table 2.5. For females aged less than 30, the most commonly diagnosed type of ovarian cancer was *Germ cell tumours*, accounting for almost half of all ovarian cancers in this age group. In contrast, *Carcinoma* was the most commonly diagnosed type of ovarian cancer for females over the age of 30, with this histology type accounting for 89% of ovarian cancers in those aged 30–49, 92% of ovarian cancers in those aged 50–69 and 79% of ovarian cancers in those aged 70 and over.

Table 2.5: Incidence of ovarian cancer, by histological type and age at diagnosis, Australia, 2008

	Number of new cases				Per cent			
Type of ovarian cancer[a]	**<30**	**30–49**	**50–69**	**70+**	**<30**	**30–49**	**50–69**	**70+**
Carcinoma	13	170	512	386	36.1	88.5	92.1	79.1
Serous carcinoma	*5*	*67*	*306*	*178*	*13.9*	*34.9*	*55.0*	*36.5*
Mucinous carcinoma	*6*	*23*	*31*	*20*	*16.7*	*12.0*	*5.6*	*4.1*
Endometrioid carcinoma	*0*	*37*	*56*	*18*	*0.0*	*19.3*	*10.1*	*3.7*
Clear cell carcinoma	*0*	*25*	*50*	*8*	*0.0*	*13.0*	*9.0*	*1.6*
Adenocarcinoma not otherwise specified[b]	*0*	*8*	*48*	*111*	*0.0*	*4.2*	*8.6*	*22.7*
Other carcinoma	*2*	*10*	*21*	*51*	*5.6*	*5.2*	*3.8*	*10.5*
Sex cord-stromal tumours	3	5	2	2	8.3	2.6	0.4	0.4
Germ cell tumours	17	9	10	2	47.2	4.7	1.8	0.4
Other specified malignant neoplasm	0	5	20	24	0.0	2.6	3.6	4.9
Unspecified malignant neoplasm	3	3	12	74	8.3	1.6	2.2	15.2
Total	**36**	**192**	**556**	**488**	**100.0**	**100.0**	**100.0**	**100.0**

(a) All cases were coded as primary site, invasive ovarian cancers (ICD-10 code of C56). Appendix Table D2.14 provides a list of the histological types included in each group.

(b) This group may include tumours in the first four categories of carcinoma for which the description was not sufficient to allocate a specific morphology code.

Source: AIHW Australian Cancer Database 2008.

Have there been changes in the distribution of ovarian cancer types?

Trends in proportions of ovarian cancers by histological type are in Table 2.6, with the data grouped into four time periods. Caution should be exercised when interpreting these data as changes in histological assessment and coding practices over these time periods may have affected observed trends.

There was minimal change in the proportion of ovarian cancers that were classified as *Carcinoma*, with values ranging from 85% (in 2003–2008) to 89% (in 1989–1995). However, within the group of *Carcinoma*, the proportion of ovarian cancers that were *Serous carcinoma* rose from 27% in 1982–1988 to 43% in 2003–2008. Over the same time period, the proportion of *Mucinous carcinoma* almost halved from 12% in 1982–1988 to 7% in 2003–2008, while the proportion of *Adenocarcinoma not otherwise specified* declined from 24% to 13%. Smaller changes in proportions were seen for the other subgroups of carcinoma, such as *Clear cell carcinoma*, which has increased from 4% to 5%.

The proportion of ovarian cancers that were classified as *Sex cord-stromal tumours* fell from 2% in 1982–1988 to 1% in 2003–2008, while the proportion of *Germ cell tumours* remained at around 3% for each of the time periods. The proportion of ovarian cancers that were coded as *Other specified malignant neoplasm* increased from 3% to 4%. In addition, the proportion that was classified as *Unspecified malignant neoplasm* increased from 5% to 7%.

Table 2.6: Incidence of ovarian cancer, by histological type, Australia, 1982–1988 to 2003–2008

Type of ovarian cancer[a]	Number of new cases				Per cent			
	1982–1988	1989–1995	1996–2002	2003–2008	1982–1988	1989–1995	1996–2002	2003–2008
Carcinoma	5,372	6,474	6,883	6,330	87.8	88.7	87.0	84.8
Serous carcinoma	*1,647*	*2,662*	*3,291*	*3,229*	*26.9*	*36.5*	*41.6*	*43.3*
Mucinous carcinoma	*703*	*792*	*669*	*503*	*11.5*	*10.8*	*8.5*	*6.7*
Endometrioid carcinoma	*606*	*667*	*644*	*610*	*9.9*	*9.1*	*8.1*	*8.2*
Clear cell carcinoma	*260*	*372*	*407*	*399*	*4.2*	*5.1*	*5.1*	*5.3*
Adenocarcinoma not otherwise specified[b]	*1,490*	*1,351*	*1,222*	*985*	*24.3*	*18.5*	*15.4*	*13.2*
Other carcinoma	*666*	*630*	*650*	*604*	*10.9*	*8.6*	*8.2*	*8.1*
Sex cord-stromal tumours	116	95	77	68	1.9	1.3	1.0	0.9
Germ cell tumours	182	214	231	236	3.0	2.9	2.9	3.2
Other specified malignant neoplasm	157	244	285	295	2.6	3.3	3.6	4.0
Unspecified malignant neoplasm	293	275	440	532	4.8	3.8	5.6	7.1
Total	**6,120**	**7,302**	**7,916**	**7,461**	**100.0**	**100.0**	**100.0**	**100.0**

(a) All cases were coded as primary site, invasive ovarian cancers (ICD-10 code of C56). Appendix Table D2.14 provides a list of the histological types included in each group.

(b) This group may include tumours in the first four categories of carcinoma for which the description was not sufficient to allocate a specific morphology code.

Source: AIHW Australian Cancer Database 2008.

What are the most common types of uterine cancer?

Based on the recommendations by the IARC (Egevad et al. 2007), uterine cancer was disaggregated into the broad histological types of *Carcinoma*, *Sarcoma* and *Other and unspecified malignant neoplasms*. The group of *Carcinoma* was further split into *Adenocarcinoma* and *Other carcinoma*. The histological types of uterine cancer included in each group and subgroup are in Appendix Table D2.15.

In 2008, 88% of uterine cancers were classified as *Carcinoma*, with the vast majority within this group being *Adenocarcinoma* (98% of carcinomas). Meanwhile, 3% of uterine cancers were classified as S*arcoma*, while 9% were classified as *Other and unspecified malignant neoplasm* (Table 2.7).

Does the age at diagnosis differ for the different types of uterine cancer?

In 2008, the mean age at diagnosis was 64 years for females diagnosed with *Carcinoma,* and within this group the highest mean age at diagnosis occurred for those cases in which the type of cancer was *Other carcinoma* (68 years). The mean age at diagnosis was lowest for females diagnosed with *Sarcoma* (56 years), while females diagnosed with *Other and unspecified malignant neoplasm* had a mean age at 65 years (Table 2.7).

Table 2.7: Incidence and average age at diagnosis of uterine cancer, by histological type, Australia, 2008

	Incidence			Average age at diagnosis	
Type of uterine cancer[(a)]	Number of new cases	Percentage of uterine cancers	Percentage of carcinomas	Mean age	Median age
Carcinoma	1,779	88.2	100.0	63.9	63.0
Adenocarcinoma	*1,740*	*86.3*	*97.8*	*63.8*	*63.0*
Other carcinoma	*39*	*1.9*	*2.2*	*68.3*	*69.0*
Sarcoma	51	2.5	. .	56.3	52.0
Other and unspecified malignant neoplasm	186	9.2	. .	64.8	65.5
Total	**2,016**	**100.0**	**. .**	**63.8**	**63.0**

. . Not applicable

(a) All cases were coded as primary site, invasive uterine cancers (ICD-10 codes of C54–C55). Appendix Table D2.15 provides a list of the histological types included in each group.

Source: AIHW Australian Cancer Database 2008.

The distribution of the histological types of uterine cancer in 2008 according to four age groups is in Table 2.8. For each of the age groups, *Carcinoma* was the most commonly diagnosed type of cancer, with the highest proportion (91%) seen for females aged 50–69. None of the uterine cancers diagnosed in females aged less than 30 in 2008 were classified as *Sarcoma*. However, 7% of uterine cancers in females aged 30–49 were classified as *Sarcoma*, falling to 1% for females aged 70 and over.

Table 2.8: Incidence of uterine cancer, by histological type and age at diagnosis, Australia, 2008

	Number of new cases				Per cent			
Type of uterine cancer[(a)]	<30	30–49	50–69	70+	<30	30–49	50–69	70+
Carcinoma	7	184	1,018	570	70.0	78.6	91.2	86.9
Adenocarcinoma	*6*	*181*	*1,001*	*552*	*60.0*	*77.4*	*89.7*	*84.1*
Other carcinoma	*1*	*3*	*17*	*18*	*10.0*	*1.3*	*1.5*	*2.7*
Sarcoma	0	17	27	7	0.0	7.3	2.4	1.1
Other and unspecified malignant neoplasm	3	33	71	79	30.0	14.1	6.4	12.0
Total	**10**	**234**	**1,116**	**656**	**100.0**	**100.0**	**100.0**	**100.0**

(a) All cases were coded as primary site, invasive uterine cancers (ICD-10 codes of C54–C55). Appendix Table D2.15 provides a list of the histological types included in each group.

Source: AIHW Australian Cancer Database 2008.

Have there been changes in the distribution of uterine cancer types?

Trends in proportions of uterine cancers by histological type are in Table 2.9, with the data grouped into four time periods. Caution should be exercised when interpreting these data since changes in histological assessment and coding practices may have affected observed trends.

The proportion of uterine cancers that were classified as *Carcinoma* remained just above 88% for each of the four time periods. The proportion that was *Other carcinoma* fell from 5% in 1982–1988 to 3% in 2003–2008.

The proportion of uterine cancers that were classified as *sarcoma* decreased from 4% in 1982–1988 to 3% in 2003–2008, while the proportion of *Other and unspecified malignant neoplasm* steadily increased from 7% to 9%.

Table 2.9: Incidence of uterine cancer, by histological type, Australia, 1982–1988 to 2003–2008

	Number of new cases				Per cent			
Type of uterine cancer[(a)]	1982–1988	1989–1995	1996–2002	2003–2008	1982–1988	1989–1995	1996–2002	2003–2008
Carcinoma	6,341	7,551	9,164	9,873	88.9	88.9	88.6	88.2
Adenocarcinoma	*5,985*	*7,261*	*8,808*	*9,524*	*84.0*	*85.5*	*85.1*	*85.0*
Other carcinoma	*356*	*290*	*356*	*349*	*5.0*	*3.4*	*3.4*	*3.1*
Sarcoma	264	254	336	296	3.7	3.0	3.2	2.6
Other and unspecified malignant neoplasm	524	685	847	1,031	7.4	8.1	8.2	9.2
Total	**7,129**	**8,490**	**10,347**	**11,200**	**100.0**	**100.0**	**100.0**	**100.0**

(a) All cases were coded as primary site, invasive uterine cancers (ICD-10 codes of C54–C55). Appendix Table D2.15 provides a list of the histological types included in each group.

Source: AIHW Australian Cancer Database 2008.

What are the most common types of cervical cancer?

Based mainly on the recommendations by the IARC (Egevad et al. 2007), cervical cancer has been disaggregated into the broad histological types of *Carcinoma*, *Sarcoma* and *Other and unspecified malignant neoplasms*. The group of *Carcinoma* was further split into *Squamous cell carcinoma*, *Adenocarcinoma*, *Adenosquamous carcinoma* and *Other carcinoma*. The histological types of cervical cancer included in each group and subgroup are in Appendix Table D2.16.

In 2008, 97% of cervical cancers were classified as *Carcinoma*, with the most common type within this group being *Squamous cell carcinoma* (66% of *Carcinoma*). In addition, 0.5% of cervical cancers were classified as *Sarcoma,* while 2% were classified as *Other and unspecified malignant neoplasm* (Table 2.10).

Does the age at diagnosis differ for the different types of cervical cancer?

In 2008, the mean age at diagnosis was 50 years for cervical cancers classified as *Carcinoma*, 61 years for cervical cancers classified as *Sarcoma* and 71 years for cervical cancers classified as *Other and unspecified malignant neoplasm* (Table 2.10).

Table 2.10: Incidence and average age at diagnosis of cervical cancer, by histological type, Australia, 2008

	Incidence			Average age at diagnosis	
Type of cervical cancer[(a)]	Number of new cases	Percentage of cervical cancers	Percentage of carcinomas	Mean age	Median age
Carcinoma	755	97.0	100.0	50.3	47.0
Squamous cell carcinoma	*499*	*64.1*	*66.1*	*50.5*	*48.0*
Adenocarcinoma	*191*	*24.6*	*25.3*	*49.0*	*45.0*
Adenosquamous carcinoma	*26*	*3.3*	*3.4*	*51.2*	*45.5*
Other carcinoma	*39*	*5.0*	*5.2*	*54.5*	*49.0*
Sarcoma	4	0.5	. .	61.0	63.0
Other and unspecified malignant neoplasm	19	2.4	. .	71.2	71.0
Total	**778**	**100.0**	**. .**	**50.9**	**48.0**

. . Not applicable

(a) All cases were coded as primary site, invasive cervical cancers (ICD-10 code of C53). Appendix Table D2.16 provides a list of the histological types included in each group.

Source: AIHW Australian Cancer Database 2008.

The distribution of histological types of cervical cancers in 2008 according to four age groups is in Table 2.11. For each of the age groups, *Carcinoma* accounted for the vast majority of cervical cancers, although the proportional contribution fell with age from 100% in females under the age of 30 to 91% in females aged 70 and over.

Table 2.11: Incidence of cervical cancer, by histological type and age at diagnosis, Australia, 2008

	Number of new cases				Per cent			
Type of cervical cancer[(a)]	<30	30–49	50–69	70+	<30	30–49	50–69	70+
Carcinoma	78	333	216	128	100.0	98.8	96.9	91.4
Squamous cell carcinoma	*54*	*214*	*147*	*84*	*69.2*	*63.5*	*65.9*	*60.0*
Adenocarcinoma	*19*	*89*	*56*	*27*	*24.4*	*26.4*	*25.1*	*19.3*
Adenosquamous carcinoma	*2*	*13*	*6*	*5*	*2.6*	*3.9*	*2.7*	*3.6*
Other carcinoma	*3*	*17*	*7*	*12*	*3.8*	*5.0*	*3.1*	*8.6*
Sarcoma	0	1	2	1	0.0	0.3	0.9	0.7
Other and unspecified malignant neoplasm	0	3	5	11	0.0	0.9	2.2	7.9
Total	**78**	**337**	**223**	**140**	**100.0**	**100.0**	**100.0**	**100.0**

(a) All cases were coded as primary site, invasive cervical cancers (ICD-10 code of C53). Appendix Table D2.16 provides a list of the histological types included in each group.

Source: AIHW Australian Cancer Database 2008.

Have there been changes in the distribution of cervical cancer types?

Trends in proportions of cervical cancers by histological type are indicated in Table 2.12, with the data grouped into four time periods. Caution should be exercised when interpreting these data since changes in histological assessment and coding practices may have affected observed trends.

The proportion of cervical cancers classified as *Carcinoma* remained between 97% and 98% over the four time periods. Within the group of *Carcinoma*, there was a steady fall in the proportion of *Squamous cell carcinoma* from 76% in 1982–1988 to 65% in 2003–2008. In contrast, the proportion of *Adenocarcinoma* markedly rose from 12% to 22%. The proportion of *Carcinoma* classified as *Adenosquamous* and *Other carcinoma* fluctuated over the four time periods, with no clear pattern evident.

The proportion of cervical cancers that were classified as *Sarcoma* increased from 0.1% in 1982–1988 to 0.4% in 2003–2008. The proportion of *Other and unspecified malignant neoplasm* fluctuated over the four time periods, with an increase from 2% to 3% between 1982–1988 and 2003–2008 respectively.

Table 2.12: Incidence of cervical cancer, by histological type, Australia, 1982–1988 to 2003–2008

	Number of new cases				Per cent			
Type of cervical cancer[(a)]	**1982–1988**	**1989–1995**	**1996–2002**	**2003–2008**	**1982–1988**	**1989–1995**	**1996–2002**	**2003–2008**
Carcinoma	7,023	7,282	5,495	4,290	97.4	98.4	97.6	96.8
Squamous cell carcinoma	*5,483*	*5,298*	*3,933*	*2,895*	*76.1*	*71.6*	*69.9*	*65.3*
Adenocarcinoma	*876*	*1,195*	*1,060*	*986*	*12.2*	*16.1*	*18.8*	*22.2*
Adenosquamous carcinoma	*277*	*357*	*232*	*156*	*3.8*	*4.8*	*4.1*	*3.5*
Other carcinoma	*387*	*432*	*270*	*253*	*5.4*	*5.8*	*4.8*	*5.7*
Sarcoma	10	20	15	16	0.1	0.3	0.3	0.4
Other and unspecified malignant neoplasm	174	101	118	127	2.4	1.4	2.1	2.9
Total	**7,207**	**7,403**	**5,628**	**4,433**	**100.0**	**100.0**	**100.0**	**100.0**

(a) All cases were coded as primary site, invasive cervical cancers (ICD-10 code of C53). Appendix Table D2.16 provides a list of the histological types included in each group.

Source: AIHW Australian Cancer Database 2008.

3 Early detection

Key findings

Established in 1991, the National Cervical Screening Program (NCSP) is the only population-based screening program for a gynaecological cancer in Australia.

In the 2-year period 2009–2010:

- More than 3.6 million women aged 20–69 participated in the NCSP. This equated to 57% of eligible women (which includes only women with an intact cervix).
- Participation was similar across remoteness areas, with the highest participation of 58% in *Major cities* and the lowest of 55% in *Remote* areas. There was a clear trend of increasing participation with improving socioeconomic status.

In 2010:

- For every 1,000 women screened, 9 women had a high-grade abnormality detected by histology, providing an opportunity for treatment to avoid progression to invasive cancer.

From 2004 to 2010:

- The number of women with a high-grade abnormality detected by histology per 1,000 women screened increased from 7.7 in 2004 to 8.5 in 2010.

About early detection

Some cancers or pre-cancerous states are amenable to early detection. The early detection of cancers or pre-cancerous lesions requires the use of a test that can differentiate, with a relatively high level of accuracy, between cancers and non-malignant conditions.

Population-based screening involves the systematic use of a validated test to identify individuals in an asymptomatic population who may have abnormalities. In 1968, the World Health Organization (WHO) endorsed ten principles to be used when determining if a new population-based screening program should be introduced for a disease or condition (Wilson & Jungner 1968). These principles were designed to ensure that the disease in question was well understood and the correct test, treatment and resources were in place to allow screening to be of benefit to the target population.

In Australia, the Papanicolaou smear, or 'Pap test', is used for finding early changes in the cervix that might become cancer. The Pap test is used as part of a national population-based screening program. The National Cervical Screening Program (NCSP) began in 1991.

There is currently no evidence to support the use of any test, or combination of tests for routine population-based screening for ovarian cancer (NBOCC 2009). There are no effective tests available for population-based screening for uterine or other types of gynaecological cancer.

Cervical screening

How do we screen for cervical cancer in Australia?

Cervical cells generally exhibit pre-cancerous changes or abnormalities before progression to cancer occurs. These abnormalities are classified as low-grade or high-grade based on the microscopic appearance of the cells in the biopsy specimen and how much of the lining of the cervix these abnormal cells occupy.

Cervical screening uses the Pap test as the screening tool. During a Pap test, cells are collected from the transformation zone of the cervix—the area where the squamous cells and glandular cells meet. This is the site where most cervical abnormalities and cancers are detected. The cells collected are then examined under a microscope to look for abnormalities. Because the Pap test can detect cervical changes that can be treated before they progress to cancer, it is very effective in reducing the number of cervical cancer cases and deaths from cervical cancer.

The latest available recommendations for the management of abnormal Pap test results are provided by the National Health and Medical Research Council (NHMRC) in the publication *Screening to prevent cervical cancer: guidelines for the management of asymptomatic women with screen detected abnormalities* (National Health and Medical Research Council 2005).

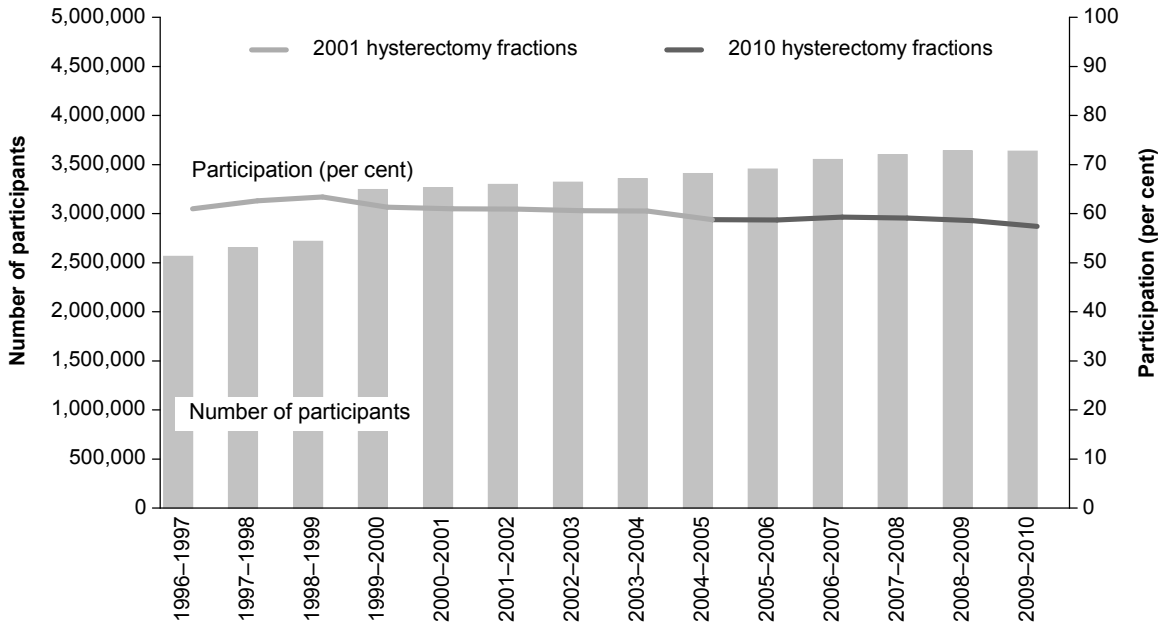
The NCSP is Australia's population-based screening program that aims to reduce cervical cancer cases as well as illness and death resulting from cervical cancer through an organised approach to cervical screening aimed at detecting and treating high-grade abnormalities to avoid progression to cervical cancer (DoHA 2011). This program is monitored annually in the AIHW publication *Cervical screening in Australia* against performance indicators that cover participation, rescreening participation, cytology, histology, incidence and mortality. In this report, data are sourced from *Cervical screening in Australia 2009–2010* (AIHW 2012b).

How many women participated in the National Cervical Screening Program?

In the 2-year period 2009–2010, more than 3.6 million (3,635,929) women aged 20–69 participated in the NCSP. This equates to a participation rate of 57% of eligible women (which include only women with an intact cervix).

Participation in the NCSP was steady at 59% of eligible women for all 2-year periods from 2004–2005 to 2008–2009, before a statistically significant decrease to 57% in the latest reporting period, 2009–2010.

Figure 3.1 shows the trend in participation in the NCSP nationally, from 1996–1997, when reporting began, to the most recent national data available in 2009–2010. This figure was adapted from the AIHW publication *Cervical screening in Australia 2009–2010* (AIHW 2012b).



Notes

1. Participants were the number of women aged 20–69 screened in each reporting period. Number of women screened includes all women screened in each jurisdiction, not just those women resident in each jurisdiction, with the exception of Victoria and the Australian Capital Territory, for which only residents of the jurisdiction (and immediate border residents) are included.
2. The participation rates were the number of women aged 20–69 screened in each 2-year reporting period as a percentage of the average of the ABS estimated resident population for women aged 20–69 for the 2 reporting years, adjusted to include only women with an intact cervix using age-specific hysterectomy fractions, age-standardised to the Australian population as at 30 June 2001.
3. Rates from 1996–1997 to 2003–2004 cannot be directly compared with rates from 2004–2005 onwards due to a different source of hysterectomy fractions used to adjust the population. Reporting periods 1996–1997 to 2003–2004 use hysterectomy fractions derived from the 2001 ABS National Health Survey; reporting periods 2004–2005 to 2009–2010 use hysterectomy fractions derived from the AIHW National Hospitals Morbidity Database.
4. The data for this figure are shown in Appendix Table D3.1.

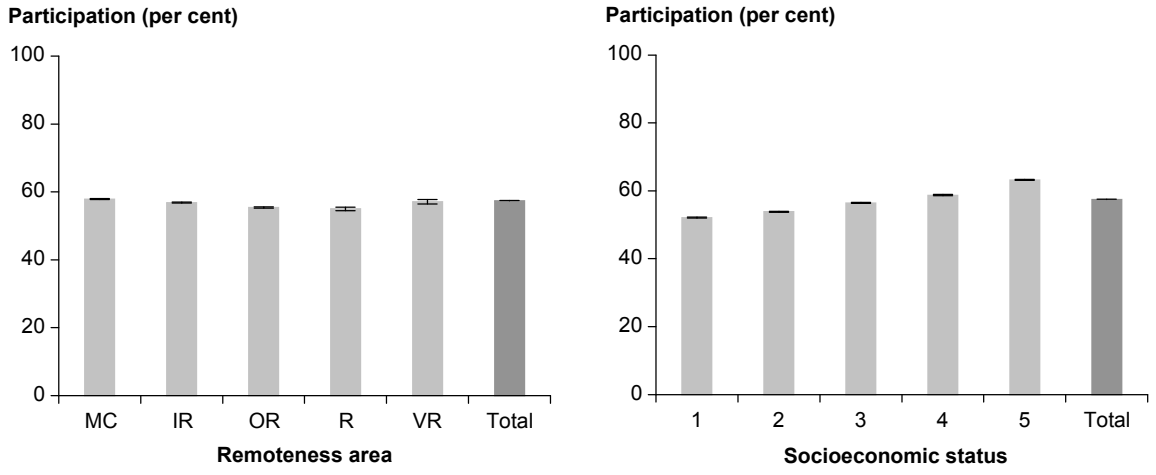
Source: AIHW 2012b.

Figure 3.1: Participation of women aged 20–69 in the National Cervical Screening Program, 1996–1997 to 2009–2010

In the 2-year period 2009–2010, participation in the NCSP was similar across remoteness areas, with the highest participation of 58% in *Major cities* and the lowest of 55% in *Remote* areas.

However, participation in cervical screening showed greater differences across socioeconomic status of area of residence, and a clear trend of increasing participation with improving socioeconomic status, from 52% of women residing in areas of lowest socioeconomic status to 63% of women residing in areas of highest socioeconomic status.

Figure 3.2 shows participation in the NCSP by remoteness area and by socioeconomic status, 2009–2010. This figure was adapted from the AIHW publication *Cervical screening in Australia 2009–2010* (AIHW 2012b).



Notes

1. Remoteness was classified according to the Australian Standard Geographical Classification (ASGC) Remoteness Areas (See Appendix A), showing 'MC' as Major cities, 'IR' as Inner regional, 'OR' as Outer regional, 'R' as Remote and 'VR' as Very remote areas.
2. Socioeconomic status was classified using the ABS index of Relative Socio-economic Disadvantage (See Appendix A), showing '1' as lowest socioeconomic status to '5' as highest socioeconomic status.
3. The participation rates were the number of women aged 20–69 screened in 2009–2010 as a percentage of the average of the ABS estimated resident population for women aged 20–69 for 2009 and 2010, adjusted to include only women with an intact cervix using age-specific hysterectomy fractions, age-standardised to the Australian population as at 30 June 2001.
4. The error bars (symbol) represent 95% confidence intervals.
5. The 'Total' column in each figure includes cases for which information on remoteness area or socioeconomic status was not available.
6. The data for this figure are shown in Appendix Table D3.2–D3.3.

Source: AIHW 2012b.

Figure 3.2: Participation of women aged 20–69 in the National Cervical Screening Program, by remoteness area and by socioeconomic status, 2009–2010

Participation data by Aboriginal and Torres Strait Islander women are not available, although there is evidence that this population group is under-screened (Binns & Condon 2006; Coory et al. 2002).

How many women had a high-grade abnormality detected by histology?

Histology is the primary diagnostic tool of the NCSP for the confirmation of disease before any treatment is initiated. The high-grade abnormality detection rate by histology is an indicator of how well the NCSP detects high-grade abnormalities (see Box 3.1). Since high-grade abnormalities have a greater probability of progressing to invasive cancer than do low-grade abnormalities, one aim of the NCSP is to set a screening interval that detects most high-grade abnormalities before they progress.

Box 3.1: What is a high-grade abnormality?

High-grade abnormalities of the cervix include *Cervical intraepithelial neoplasia (CIN)* that has been graded as moderate (*CIN II*) or severe (*CIN III*), or for which the grade has not been specified, as well as *Endocervical dysplasia* and *Adenocarcinoma in situ*.

In 2010, after age-standardisation, for every 1,000 women screened, 8.5 women had a high-grade abnormality detected by histology, providing an opportunity for treatment to avoid progression to invasive cancer.

Between 2004 and 2010, the age-standardised detection rate of high-grade abnormalities in women aged 20–69 increased from 7.7 to 8.5 per 1,000 women screened. Despite this overall increase, detection in women aged less than 20 fell from 14.5 to 7.8 per 1,000 women screened.

4 Hospitalisations due to gynaecological cancers

Key findings

In the 2009–10 financial year in Australia:

- There were 11,092 hospitalisations due to gynaecological cancers.
- Hospitalisations due to gynaecological cancers accounted for 3% of all cancer-related hospitalisations of females.
- Uterine cancer was the most common principal diagnosis for gynaecological cancer hospitalisations (4,123), followed by ovarian cancer (3,947), cervical cancer (1,802), vulval cancer (714), cancers of other female genital organs and placenta (321) and vaginal cancer (185).
- 86% of hospitalisations due to ovarian cancer and 90% of hospitalisations due to uterine cancer were for patients aged 50 years and over. The corresponding figure for hospitalisations due to cervical cancer was 51%.
- 50% of ovarian cancer, 54% of the uterine cancer and 75% of cervical cancer hospitalisations were in public hospitals.
- *Curettage and evacuation of uterus* and *Examination procedures on uterus* were among the most commonly reported procedure for same-day hospitalisations due to all gynaecological cancers combined (35% and 24% of same-day hospitalisations, respectively).
- *Total abdominal hysterectomy with removal of adnexa* was the most common type of surgical procedure for overnight hospitalisations due to all gynaecological cancers combined (12% of overnight hospitalisations).
- Secondary malignant neoplasm of the respiratory and digestive organs was the most common additional diagnosis for hospitalisations with a principal diagnosis of a gynaecological cancer (27% of all hospitalisations).

Between 2000–01 and 2009–10:

- The total number of hospitalisations due to ovarian cancer increased by 13% (from 3,490 to 3,947 hospitalisations), while the hospitalisation rate fell by 9% (from 3.5 to 3.2 per 10,000).
- The total number of hospitalisations due to uterine cancer rose by 39% (from 2,975 to 4,123 hospitalisations), while the rate of hospitalisations rose by 10% (from 3.0 to 3.3 per 10,000).
- The total number of hospitalisations due to cervical cancer fell by 6% (from 1,925 to 1,802 hospitalisations), while the hospitalisation rate fell by 16% (from 1.9 to 1.6 per 10,000).

About hospitalisations due to gynaecological cancers

Extent of hospitalisation due to gynaecological cancers is an important indicator of the burden of these cancers on the Australian population. The number of hospitalisations due to gynaecological cancers in any one year is related not only to the numbers of females diagnosed with a gynaecological cancer, but also to the numbers of occasions on which they were admitted to hospital. Other factors bearing on this number include availability of alternative health-care services and relative accessibility of hospital care, as well as admission criteria and administrative policies.

This chapter provides details on numbers and characteristics of admitted patient hospitalisations that are related to gynaecological cancers (see Box 4.1 for some definitions). The data were sourced from the National Hospital Morbidity Database (NHMD), which contains data on admitted patient hospitalisations. The most recent data available pertain to the 2009–10 financial year. Note that the data from the NHMD refer to hospitalisations, not individuals. Any person may have multiple hospitalisations during the course of a year but data on the number of different people hospitalised for a particular disease are not available. Further information about the NHMD is in Appendix C and in AIHW's annual *Australian hospital statistics* reports (AIHW 2011c).

There are two distinct types of diagnosis recorded in the NHMD—*Principal diagnosis* and *Additional diagnosis* (see Box 4.1 for definitions). The principal and additional diagnoses are coded using the International Statistical Classification of Diseases and Related Health Problems, tenth revision, Australian modification (ICD-10-AM), 6th edition. The diagnosis can include a disease or a specific treatment for a current condition. Where a treatment is recorded as the principal diagnosis, the disease being treated is usually recorded as an additional diagnosis (NCCH 2008b).

Gynaecological cancer hospitalisations are defined in this report (unless stated otherwise) as admitted patient hospitalisations in which a gynaecological cancer (ICD-10-AM codes of C51–C58) was recorded as the principal diagnosis.

In Appendix D (Tables D4.2 and D4.8), data are also presented for same-day hospitalisations in which gynaecological cancer was recorded as an additional diagnosis where the principal diagnosis was chemotherapy (referred to as 'pharmacotherapy session for neoplasms' in ICD-10-AM). This type of hospitalisations has been considered separately to other hospitalisations where a gynaecological cancer was the principal diagnosis due to differences in admission practices. In public hospitals in New South Wales, South Australia and the Australian Capital Territory, there has been a gradual reclassification of chemotherapy patients from admitted patients to non-admitted patients (outpatients) over the past few years. This change must be taken into account when interpreting numbers and characteristics of admitted patient's hospitalisations for same-day chemotherapy.

In this chapter, information on the number of hospitalisations and the average length of stay (ALOS) due to gynaecological cancers is provided from 2000–01 to 2009–10. In addition, information on hospitalisation and ALOS is provided according to age, hospital sector, remoteness areas, socioeconomic status and Aboriginal and Torres Strait Islander status. To take into account differences in age structures and size of the groups being compared, age-standardised rates and ALOSs are provided for each comparison (see Appendix B for more

detail). Information is also provided on the type of procedures gynaecological cancer patients have undergone in hospitals.

Box 4.1: Summary of terms used in the hospitalisation chapter

Admitted patient: a patient who undergoes a hospital's formal admission process to receive treatment and/or care. This treatment and/or care is provided over a period of time and can occur in hospital and/or in the person's home (for hospital-in-the-home patients).

Hospitalisation: refers to an episode of care for an admitted patient, which can be a total hospital stay (from admission to discharge, transfer or death), or a portion of a hospital stay beginning or ending in a change of type of care (for example, from acute to rehabilitation). A hospitalisation is classified as *same-day* when a patient is admitted and separated (that is, the process by which an admitted patient completes an episode of care either by being discharged, dying, transferring to another hospital or changing type of care) on the same date. A hospitalisation is classified as *overnight* when a patient is admitted to and separated from the hospital on different dates.

Average length of stay (ALOS): is the average number of patient days for admitted patient episodes. Patients admitted and separated on the same day are allocated a length of stay of 1 day.

Principal diagnosis: is the diagnosis established after study to be chiefly responsible for occasioning the patient's episode of admitted care.

Additional diagnosis: is a condition or complaint that either coexists with the principal diagnosis or arises during the episode of care.

Procedure: is a term used to describe a clinical intervention that is surgical in nature, carries a procedural risk, carries an anaesthetic risk, requires specialised training and/or requires special facilities or equipment available only in the acute care setting. Thus, procedures encompass surgical procedures and non-surgical investigations and therapeutic procedures. Client support interventions that are neither investigative nor therapeutic (such as anaesthesia) are also included.

How many hospitalisations occurred due to gynaecological cancers in 2009–10?

In 2009–10, a total of 11,092 hospitalisations occurred with a principal diagnosis of gynaecological cancer (referred to as gynaecological cancer hospitalisations or hospitalisations due to all gynaecological cancers combined in the remainder of this chapter). This accounted for 3% of all cancer-related hospitalisations of females and for 0.2% of all hospitalisations of Australian females. As noted earlier, this figure excludes same-day hospitalisations in which chemotherapy was recorded as the principal diagnosis with gynaecological cancer listed as an additional diagnosis (see appendix tables D4.2 and D4.8 for detailed data on same-day hospitalisations for chemotherapy).

Uterine cancer was the most common principal diagnosis for gynaecological cancer hospitalisations (4,123 hospitalisations), followed by ovarian cancer (3,947), cervical cancer (1,802), vulval cancer (714), cancers of other female genital organs and placenta (321) and vaginal cancer (185).

The hospitalisation rate due to all gynaecological cancers combined was 9.2 episodes per 10,000. The age-standardised hospitalisation rates for the individual gynaecological cancer

types were 3.4 per 10,000 for uterine cancer, 3.2 for ovarian cancers and 1.6 for cervical cancer. The rate was less than 1.0 per 10,000 for the remaining types of gynaecological cancer.

Table 4.1: Hospitalisation due to gynaecological cancers, Australia, 2009–10

Principal diagnosis (ICD-10-AM codes)	Number	ASR[(a)]	95% CI
Ovarian cancer (C56)	3,947	3.2	3.1–3.4
Uterine cancer (C54–C55)	4,123	3.4	3.3–3.5
Cervical cancer (C53)	1,802	1.6	1.5–1.7
Vaginal cancer (C52)	185	0.1	0.1–0.2
Vulval cancer (C51)	714	0.6	0.5–0.6
Other female genital organs & placenta cancer (C57–C58)	321	0.3	0.2–0.3
All gynaecological cancers combined (C51–C58)	11,092	9.2	9.0–9.4
All cancer-related hospitalisations of females[(b)]	417,109	346.4	345.4–347.5
All hospitalisations of females	**4,488,869**	**3,858.2**	**3854.6–3861.8**

(a) The rates were standardised to the Australian population as at 30 June 2001 and expressed per 10,000 females.

(b) Pertain to hospitalisations in which (i) the principal diagnosis is cancer (ICD-10-AM codes C00–C97, D45, D47.1 and D47.3), or (ii) the principal diagnosis is a health service or treatment that may be related to treatment of cancer (see *Cancer in Australia: an overview, 2010* for more detail (AIHW & AACR 2010)).

Source: AIHW National Hospital Morbidity Database.

Average length of stay

In 2009–10, the age-standardised average length of stay for gynaecological cancer hospitalisations that involved an overnight stay was 7.0 days. This was slightly shorter than the corresponding average for all overnight cancer-related hospitalisations of females (7.4 days), but slightly longer than that for all overnight hospitalisations of females in Australia (6.6 days) (Table 4.2).

The age-standardised average length of stay varied for the different types of gynaecological cancer, ranging from 5.7 days for uterine cancer to 9.1 days for vulval cancer.

Table 4.2: Average length of stay for overnight hospitalisations due to gynaecological cancers, Australia, 2009–10

Principal diagnosis (ICD-10-AM codes)	Crude ALOS	Age-standardised ALOS[(a)]
Ovarian cancer (C56)	7.1	7.3
Uterine cancer (C54–C55)	5.8	5.7
Cervical cancer (C53)	7.5	8.5
Vaginal cancer (C52)	8.2	7.8
Vulval cancer (C51)	9.5	9.1
Other female genital organs & placenta cancer (C57–C58)	6.4	7.1
All gynaecological cancers combined (C51–C58)	6.8	7.0
All cancer-related hospitalisations of females[(b)]	7.4	7.4
All hospitalisations of females	**5.8**	**6.6**

(a) Directly age-standardised to the female overnight hospitalisation population in 2009–10 where the principal diagnosis was cancer (ICD-10-AM codes of C00–C97, D45, D47.1 and D47.3).

(b) Pertain to hospitalisations in which (i) the principal diagnosis is cancer (ICD-10-AM codes C00–C97, D45, D47.1 and D47.3), or (ii) the principal diagnosis is a health service or treatment that may be related to treatment of cancer (see *Cancer in Australia: an overview, 2010* for more detail (AIHW & AACR 2010)).

Source: AIHW National Hospital Morbidity Database.

Does hospitalisation differ by age?

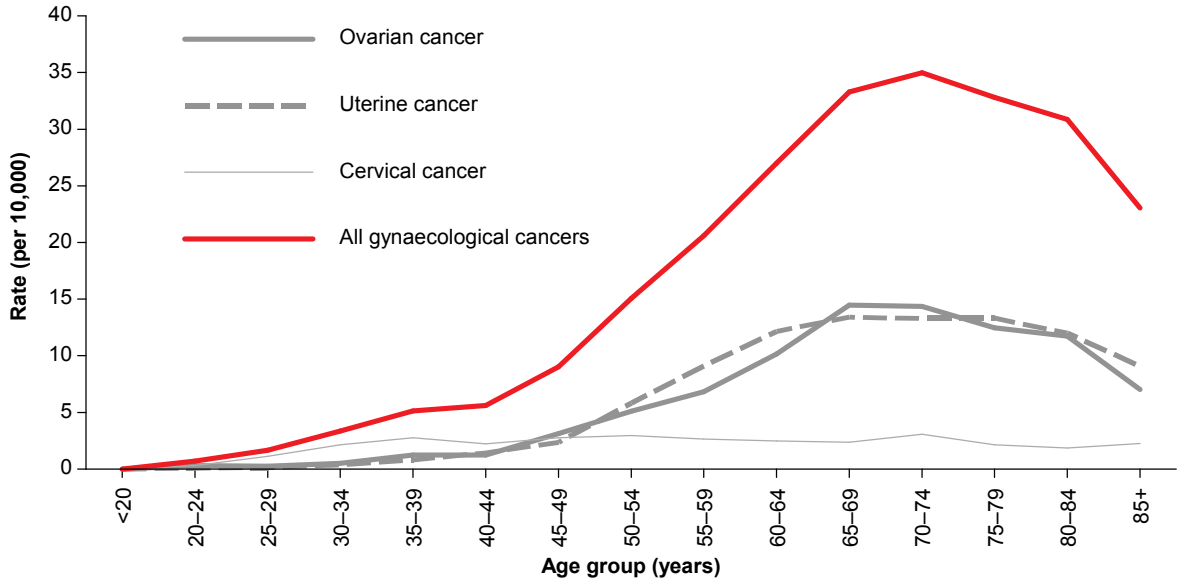
In 2009–10, 86% of ovarian cancer hospitalisations and 90% of uterine cancer hospitalisations were for females aged 50 and over. In comparison, only half (51%) of cervical cancer hospitalisations were for females aged 50 and over. Overall, 82% of all gynaecological cancer hospitalisations were for females aged 50 and over (Appendix Table D4.1).

Differences in the rate of hospitalisations due to ovarian, uterine and cervical cancer, and all gynaecological cancers combined according to age are in Figure 4.1. In 2009–10, the rates of hospitalisations for ovarian and uterine cancer were highest in females aged 65–69 (14.5 and 13.4 per 10,000, respectively). Somewhat lower rates were seen for older females, with the rates for females aged 85 and over significantly lower than the rates for females aged 65–69.

The hospitalisation rates for cervical cancer varied by age. For females under 40 a peak of 2.8 per 10,000 was found in the age group 35–39. The rates for females aged 40 and over were relatively stable, ranging between 1.9 and 3.1 per 10,000.

For hospitalisations due to all gynaecological cancers combined, the rate was less than 6 per 10,000 for females under the age of 45, but rose to a high of 35.0 per 10,000 for those aged 70–74.

Information on differences by age for same-day chemotherapy hospitalisations with an additional diagnosis of gynaecological cancer is in Appendix Table D4.2.



Notes

1. All gynaecological cancers combined pertains to hospitalisations for which the principal diagnosis was coded as C51–C58 in the ICD-10-AM. The relevant ICD-10-AM code(s) was C56 for ovarian cancer, C54–C55 for uterine cancer and C53 for cervical cancer.
2. The rates were age-standardised to the Australian population as at 30 June 2001 and expressed per 10,000 females.
3. The data for this figure are in Appendix Table D4.1.

Source: AIHW National Hospital Morbidity Database.

Figure 4.1: Hospitalisations due to ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by age group, Australia, 2009–10

Average length of stay

The crude average length of stay for ovarian and uterine cancer hospitalisations was highest in females aged 85 and over (10.7 and 8.8 days, respectively). In contrast, the average length of stay for cervical cancer ranged from 2.7 to 6.8 days for females between the ages of less than 20 and 45–49, after which the averages fluctuated considerably with no clear pattern evident by age. For all gynaecological cancers combined, the average length of stay was highest (10.2 days) for females aged 85 and over (Appendix Table D4.3).

Does admitted patient activity differ by hospital sector?

Hospitalisations due to ovarian, uterine and cervical cancer, and all gynaecological cancers combined are presented according to public and private hospitals in Table 4.3. In 2009–10, 50% of ovarian cancer hospitalisations, 54% of the uterine cancer hospitalisations and 75% of cervical cancer hospitalisations occurred in public hospitals. The corresponding figure for all gynaecological cancer hospitalisations was 57%.

The age-standardised hospitalisation rate due to ovarian cancer did not differ significantly by hospital sector. In contrast, the hospitalisation rates due to uterine and cervical cancer, and all gynaecological cancers combined were significantly higher in public than in private hospitals—1.2 times, 3.0 times and 1.3 times private hospitals, respectively.

Table 4.3: Hospitalisations due to ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by hospital sector, Australia, 2009–10

	Public			Private		
Principal diagnosis (ICD-10-AM codes)	**No.**	**ASR[(a)]**	**95% CI**	**No.**	**ASR[(a)]**	**95% CI**
Ovarian cancer (C56)	1,958	1.6	1.5–1.7	1,989	1.6	1.5–1.7
Uterine cancer (C54–C55)	2,232	1.8	1.7–1.9	1,891	1.5	1.4–1.6
Cervical cancer (C53)	1,344	1.2	1.1–1.2	458	0.4	0.4–0.5
All gynaecological cancers combined (C51–C58)	**6,297**	**5.2**	**5.1–5.4**	**4,795**	**3.9**	**3.8–4.1**

(a) The rates were standardised to the Australian population as at 30 June 2001 and expressed per 10,000 females.

Source: AIHW National Hospital Morbidity Database.

Average length of stay

In 2009–10, the age-standardised average length of stay for ovarian and uterine cancer hospitalisations in public hospitals were considerably longer than those in private hospitals (8.9 versus 5.6 days for ovarian cancer and 6.2 versus 5.2 days for uterine cancer) (Table 4.4).

The age-standardised average length of stay for cervical cancer hospitalisations by hospital sector are not compared due to small number of hospitalisations—particularly in the oldest age groups.

For all gynaecological cancers combined, the age-standardised average length of stay for hospitalisations in public hospitals was 7.8 days, which was longer than the corresponding length of stay for private hospitals (5.8 days).

Table 4.4: Average length of stay for overnight hospitalisation due to ovarian, uterine and cervical cancer, and all gynaecological cancers combined, Australia, 2009–10

	Public		Private	
Principal diagnosis (ICD-10-AM codes)	**Crude ALOS**	**Age-standardised ALOS[(a)]**	**Crude ALOS**	**Age-standardised ALOS[(a)]**
Ovarian cancer (C56)	8.6	8.9	5.5	5.6
Uterine cancer (C54–C55)	6.1	6.2	5.3	5.2
Cervical cancer (C53)	7.6	8.0	6.8	10.2[(b)]
All gynaecological cancers combined (C51–C58)	**7.6**	**7.8**	**5.8**	**5.8**

(a) Directly age-standardised to the female overnight hospitalisation population in 2009–10 where the principal diagnosis is cancer (ICD-10-AM codes C00–C97, D45, D47.1 and D47.3).

(b) Note that some patients may stay longer in the hospital than the average, particularly in the older age groups. When the number of hospitalisations of a particular disease is small, it can influence the age-weighted average length of stay. Therefore, the result should be interpreted with caution.

Source: AIHW National Hospital Morbidity Database.

Has hospitalisation due to gynaecological cancers changed over time?

In this section, trends in hospitalisations due to ovarian, uterine and cervical cancer, and all gynaecological cancers combined are presented for the 10-year period from 2000–01 to 2009–10 financial years (Figure 4.2).

The total number of ovarian cancer hospitalisations rose by 13% between 2000–01 (3,490 hospitalisations) and 2009–10 (3,947), with the majority of change pertaining to an increase in the number of same-day hospitalisations. The ovarian cancer hospitalisation rate fluctuated over the period but overall the rate fell by 9% between 2000–01 (3.5 per 10,000) and 2009–10 (3.2 per 10,000). However, the rate of same-day hospitalisations rose between 2000–01 and 2009–10 (from 0.5 to 0.8 per 10,000), while the rate of overnight hospitalisations fell (from 3.0 to 2.4 per 10,000).

The total number of uterine cancer hospitalisations rose by 39% from 2000–01 (2,975 hospitalisations) to 2009–10 (4,123) due to both an increase in same-day and overnight hospitalisations. The rate of hospitalisations for uterine cancer rose significantly by 10% over the same period (from 3.0 to 3.3 per 10,000). Although the rate of hospitalisations tended to increase for both same-day and overnight hospitalisations, the increase between 2000–01 and 2009–10 was only statistically significant for same-day hospitalisations (from 0.8 to 1.0 per 10,000).

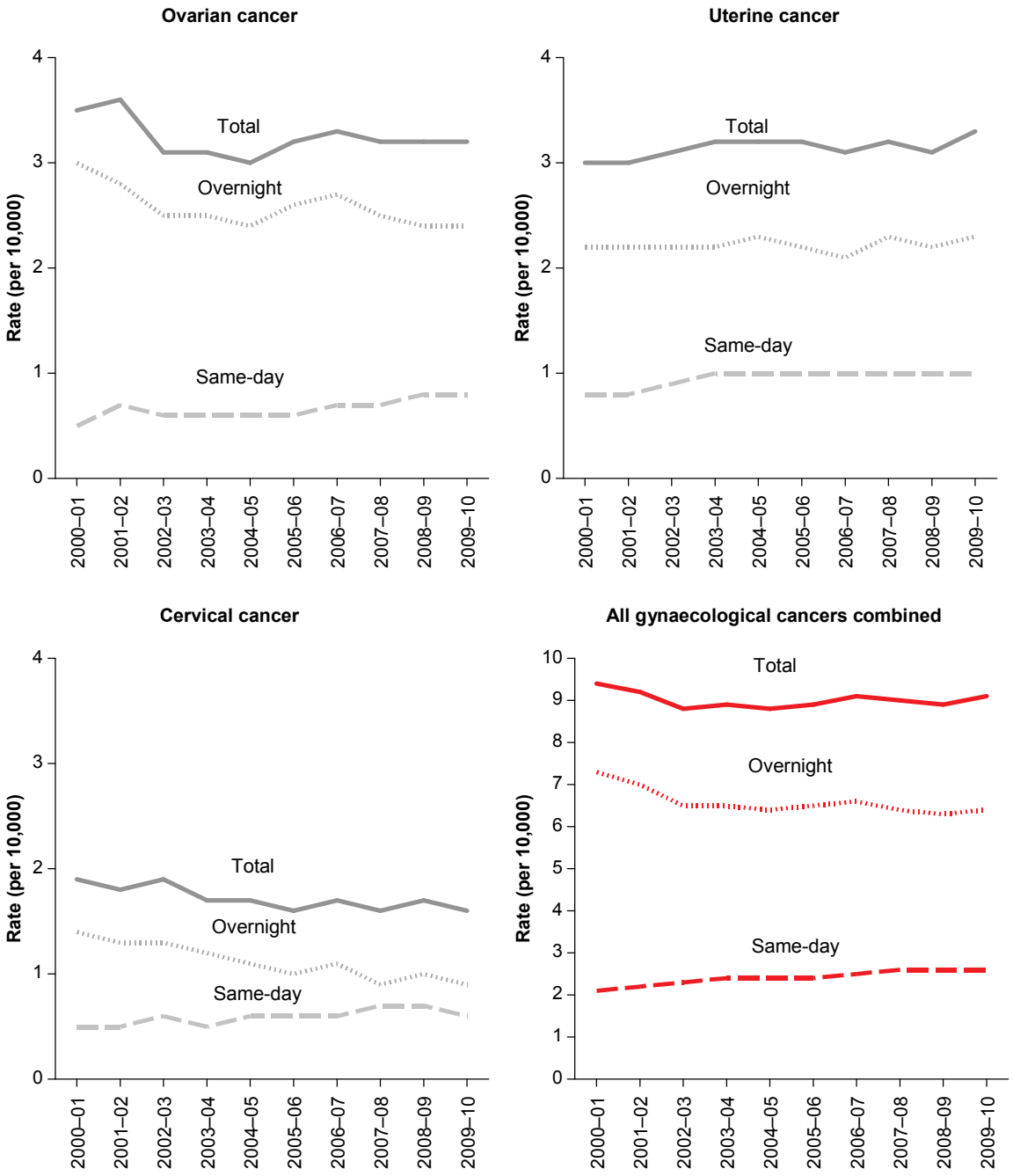
The total number of hospitalisations due to cervical cancer fell by 6% from 2000–01 (1,925 hospitalisations) to 2009–10 (1,802). However, there were contrasting underlying trends in the number of same-day hospitalisations which rose by 40% and the number of overnight hospitalisations which fell by 23% over the same period. This was also reflected in the cervical cancer hospitalisation rates, which fell by 16% overall between 2000–01 (1.9 per 10,000) and 2009–10 (1.6 per 10,000), driven by a significant 36% fall in the rate of overnight hospitalisations, while the rate of same-day hospitalisations remained fairly stable from 2000–01 to 2009–10.

For all gynaecological cancers combined, the number of hospitalisations rose by 18% between 2000–01 (9,402 hospitalisations) and 2009–10 (11,092). This was mainly due to an increase in same-day hospitalisations, which rose by 55%. The overall gynaecological cancer hospitalisation rate for 2000–01 did not differ significantly from that for 2009–10. However, the rate of same-day hospitalisations rose significantly over the period, while the overnight hospitalisation rate fell significantly.

Note that trends in same-day chemotherapy hospitalisations due to gynaecological cancers are in Appendix Table D4.8.

Average length of stay

Between 2000–01 and 2009–10 the age-standardised average length of stay fell from 8.0 to 7.3 days for ovarian cancer hospitalisations and from 7.1 to 5.7 days for uterine cancer hospitalisations, while it rose from 8.0 to 8.5 days for cervical cancer hospitalisations. For all gynaecological cancer hospitalisations the age-standardised average length of stay fell from 7.9 to 7.0 days (Appendix Table D4.9).



Notes

1. All gynaecological cancers combined pertains to hospitalisations for which the principal diagnosis was coded as C51–C58 in the ICD-10-AM. The relevant ICD-10-AM code(s) was C56 for ovarian cancer, C54–C55 for uterine cancer and C53 for cervical cancer.
2. The rates were age-standardised to the Australian population as at 30 June 2001 and expressed per 10,000 females.
3. The scale of the y-axis differs for the individual figures shown.
4. The data for this figure are in Appendix Table D4.4–D4.7.

Source: AIHW National Hospital Morbidity Database.

Figure 4.2: Hospitalisations due to ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by same-day and overnight status, Australia, 2000–01 to 2009–10

Do hospitalisation rates differ across population groups?

In this section, differences in age-standardised hospitalisations rates due to ovarian, uterine and cervical cancer, and all gynaecological cancers combined are presented by remoteness area, socioeconomic status and Aboriginal and Torres Strait Islander status. Note that differences in average length of stay by population groups are in appendix tables D4.11, D4.13 and D4.15.

Do hospitalisation rates differ by remoteness area?

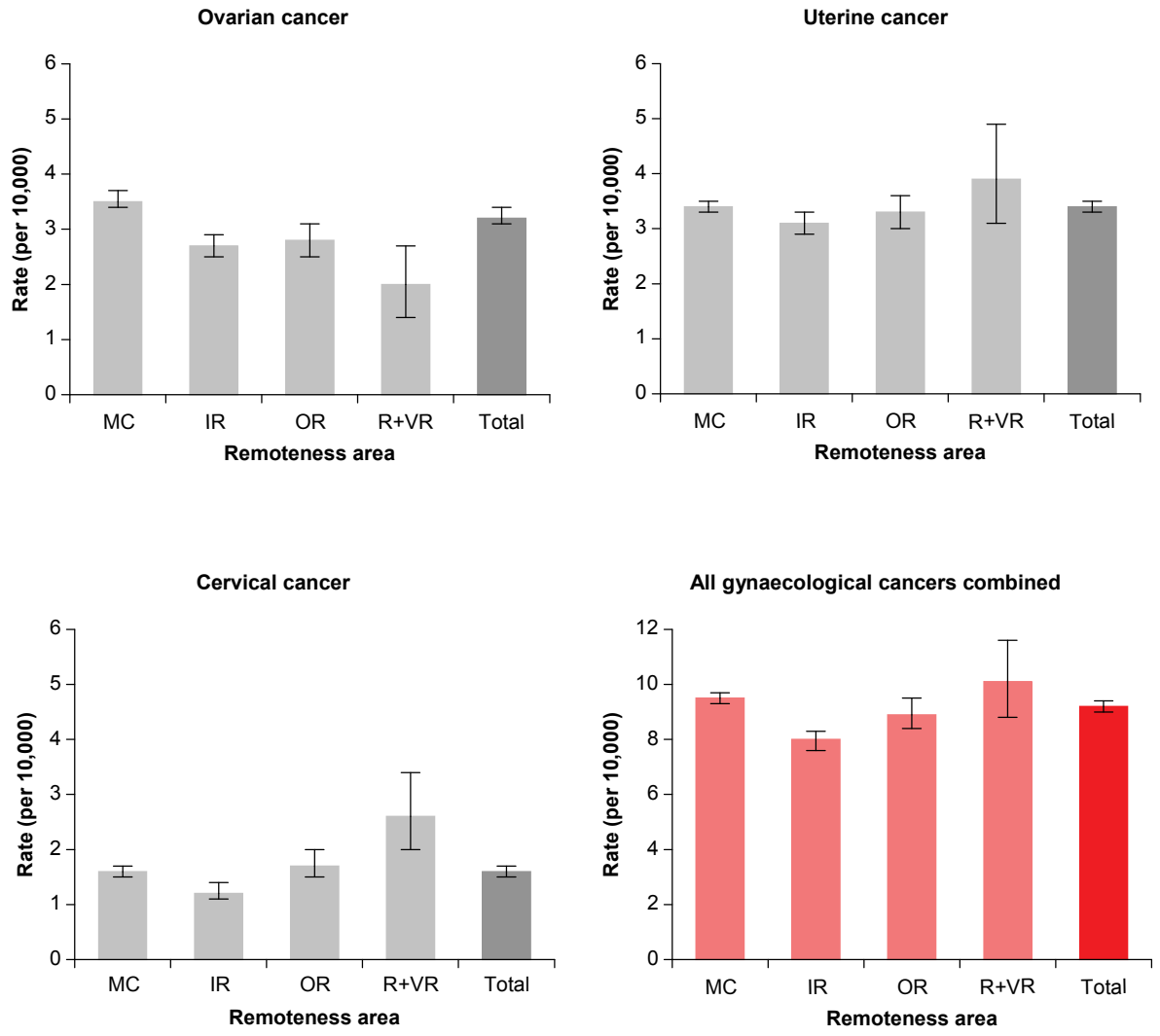
Figure 4.3 shows the hospitalisation rates due to ovarian, uterine and cervical cancer by remoteness of the patient's area of usual residence at time of hospitalisation in 2009–10.

In 2009–10, the hospitalisation rate of ovarian cancer was significantly higher for females living in *Major cities* (3.5 per 10,000) compared with those living in other areas—between 1.3 and 1.8 times that for other areas.

The hospitalisation rate due to uterine cancer was higher in *Remote and very remote* areas (3.9 per 10,000) than in other areas, but the differences were not statistically significant.

Females in *Remote and very remote* areas were more likely to be hospitalised due to cervical cancer (2.6 per 10,000) than their counterparts living in *Major cities* (1.6) and *Inner regional* areas (1.2)—1.6 times *Major cities* and 2.2 times *Inner regional* areas.

The hospitalisation rate due to all gynaecological cancers combined was highest for females in *Remote and very remote* areas (10.1 per 10,000). This rate was significantly higher than that for females in *Inner regional* areas (8.0) for which the lowest rate was observed.



Notes

1. All gynaecological cancers combined pertains to hospitalisations for which the principal diagnosis was coded as C51–C58 in the ICD-10-AM. The relevant ICD-10-AM code(s) was C56 for ovarian cancer, C54–C55 for uterine cancer and C53 for cervical cancer.
2. Remoteness was classified according to the Australian Standard Geographical Classification (ASGC) Remoteness Areas (See Appendix A), showing 'MC' as Major cities, 'IR' as Inner regional, 'OR' as Outer regional and 'R+VR' as Remote and very remote areas.
3. The rates were age-standardised to the Australian population as at 30 June 2001 and expressed per 10,000 females.
4. The error bars (symbol) represent 95% confidence intervals.
5. The scales of the y-axis differ for the individual figures shown.
6. The 'Total' column includes hospitalisations for which information on remoteness area was not available.
7. The data for this figure are in Appendix Table D4.10.

Source: AIHW National Hospital Morbidity Database.

Figure 4.3: Hospitalisations for ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by remoteness area of usual residence, Australia, 2009–10

Do hospitalisation rates differ by socioeconomic status?

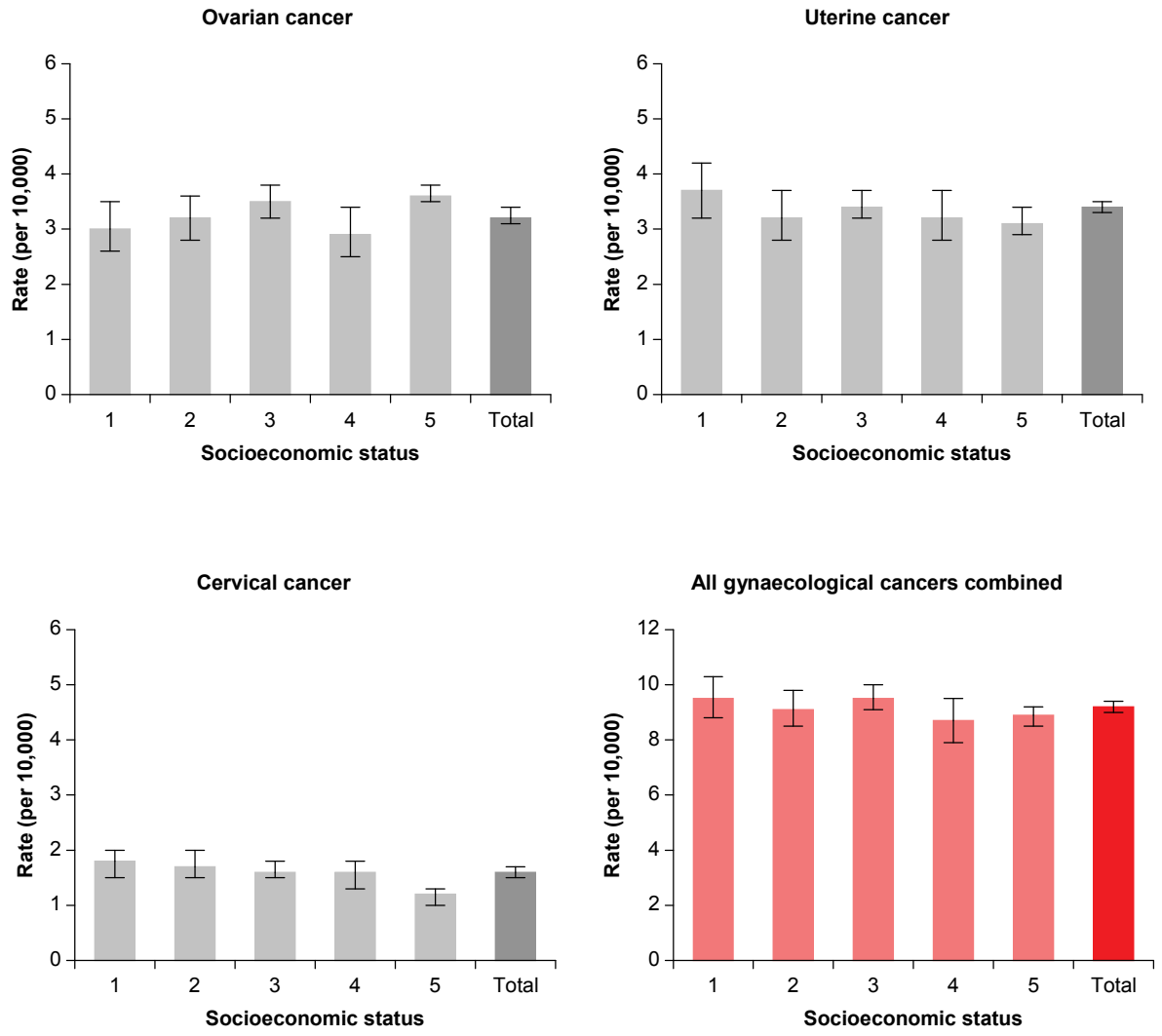
Figure 4.4 shows differences in hospitalisations rates due to ovarian, uterine and cervical cancer, and all gynaecological cancers combined by socioeconomic status of residential area in 2009–10.

The hospitalisation rate due to ovarian cancer was highest in the highest socioeconomic status group (group 5) (3.6 per 10,000), although this rate was only significantly higher than the rate in the second highest socioeconomic status group (group 4) (2.9).

The hospitalisation rate due to uterine cancer was highest in the lowest socioeconomic status group (group 1) (3.7 per 10,000), although this rate was not significantly higher than the rates for other groups.

The hospitalisation rate due to cervical cancer fell slightly with improving socioeconomic status. The rate in the lowest socioeconomic status group (1.8 per 10,000) was 1.5 times that of the highest group (1.2).

For all gynaecological cancers combined, there were no statistically significant differences in the hospitalisations rates by socioeconomic status.



Notes

1. All gynaecological cancers combined pertains to hospitalisations for which the principal diagnosis was coded as C51–C58 in the ICD-10-AM. The relevant ICD-10-AM code(s) was C56 for ovarian cancer, C54–C55 for uterine cancer and C53 for cervical cancer.
2. Socioeconomic status was classified using the ABS index of Relative Socio-economic Disadvantage (See Appendix A), showing '1' as lowest socioeconomic status to '5' as highest socioeconomic status.
3. The rates were age-standardised to the Australian population as at 30 June 2001 and are expressed per 10,000 females.
4. The error bars (symbol) represent 95% confidence intervals.
5. The 'Total' column includes hospitalisations for which information on socioeconomic status was not available.
6. The data for this figure are shown in Appendix Table D4.12.

Source: AIHW National Hospital Morbidity Database.

Figure 4.4: Hospitalisations due to ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by socioeconomic status, Australia, 2009–10

Do hospitalisation rates differ by Aboriginal and Torres Strait Islander status?

The quality of the Aboriginal and Torres Strait Islander status data provided for admitted patients in 2009–10 is considered sufficient for analysis for all hospitals in New South Wales,

Victoria, Queensland, Western Australia, and South Australia, as well as public hospitals in the Northern Territory (see Box 4.2 for further details).

In 2005–06 to 2009–10, Aboriginal and Torres Strait Islander females accounted for 2% (1,023 hospitalisations) of the total number of hospitalisations due to all gynaecological cancers combined.

Figure 4.5 shows that the Aboriginal and Torres Strait Islander females had a significantly lower hospitalisation rate due to ovarian cancer, compared with other Australian females (1.7 and 3.3 per 10,000, respectively). Specifically, the rate for Aboriginal and Torres Strait Islander females was half that for other females.

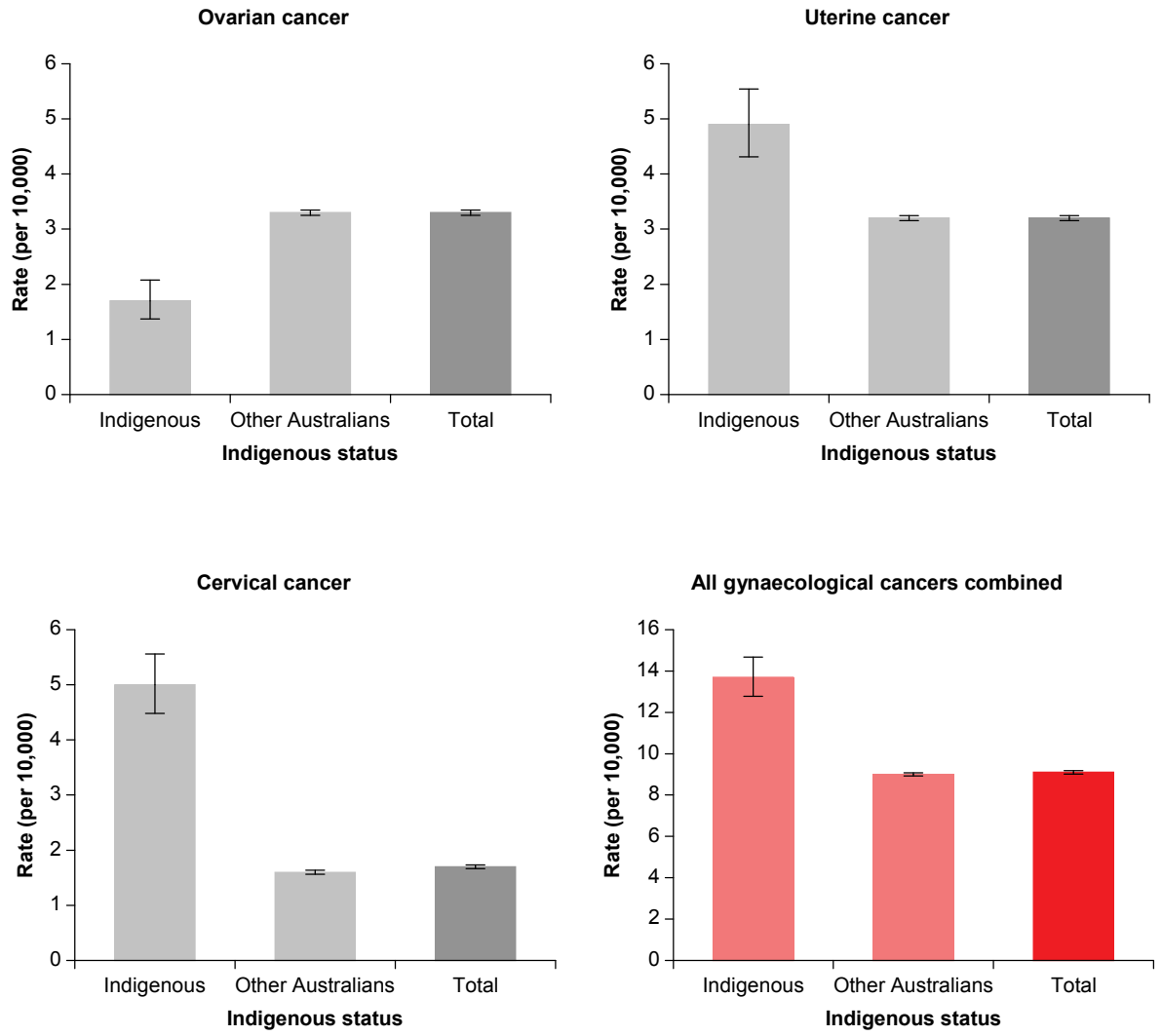
In contrast, the hospitalisation rates due to uterine and cervical cancer, and all gynaecological cancers combined were significantly higher in Aboriginal and Torres Strait Islander females compared with other females—1.5 times (4.9 versus 3.2 per 10,000), 3.1 times (5.0 versus 1.6) and 1.5 times (13.7 versus 9.0) the rate of other females, respectively. The higher hospitalisation rates due to uterine and cervical cancer, and all gynaecological cancers combined probably reflect the higher incidence of these cancers in Aboriginal and Torres Strait Islander females (see Chapter 2).

Box 4.2: Quality of Aboriginal and Torres Strait Islander data

The AIHW report *Indigenous identification in hospital separations data–quality report* (AIHW 2010a) found that the level of Aboriginal and Torres Strait Islander identification was acceptable for analysis purposes (greater than 80%) for New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory (public hospitals only).

The same report found that in Australia about 89% of Aboriginal and Torres Strait Islander Australians were identified correctly in hospital admissions data and the 'true' number of separations for Aboriginal and Torres Strait Islander Australians was about 12% higher than reported.

Caution must be taken when comparing hospitalisations by Aboriginal and Torres Strait Islander status, since observed differences may be influenced by jurisdictional differences in data quality. It should also be noted that data for the six jurisdictions with data of acceptable quality for analysis purposes are not necessarily representative of the jurisdictions excluded (AIHW 2010a).



Notes

1. All gynaecological cancers combined pertains to hospitalisations for which the principal diagnosis was coded as C51–C58 in the ICD-10-AM. The relevant ICD-10-AM code(s) was C56 for ovarian cancer, C54–C55 for uterine cancer and C53 for cervical cancer.
2. The rates were age-standardised to the Australian population as at 30 June 2001 and expressed per 10,000 females.
3. The 'Total' column includes hospitalisations for which information on Aboriginal and Torres Strait Islander status was not available.
4. The error bars (symbol) represent 95% confidence intervals.
5. The scale of the y-axis differs for the individual figures shown.
6. The data for this figure are in Appendix Table D4.14.

Source: AIHW National Hospital Morbidity Database.

Figure 4.5: Hospitalisations due to ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by Aboriginal and Torres Strait Islander status, New South Wales, Victoria, Queensland, Western Australia, South Australia and public hospitals in Northern Territory, 2005–06 to 2009–10

Which procedures were most frequently undertaken during hospitalisations due to gynaecological cancers?

Procedures undertaken in hospitals are a mix of surgical procedures, non-surgical procedures for investigative and therapeutic purposes (such as X-rays and chemotherapy) and client support interventions (for example, anaesthesia). One or more procedures can be reported for each hospitalisation, but because procedures are not undertaken during all hospitalisations, only some hospitalisations include data on procedures. The classification system used to code the 2009–10 data on procedures was the 6th edition of the Australian Classification of Health Interventions (ACHI) (see Appendix A) (NCCH 2008c).

Tables 4.5 and 4.6 show the number of same-day and overnight gynaecological cancer hospitalisations in which the indicated procedure was undertaken at least once during 2009–10. Note that data for the top 20 procedures are presented in Appendix Tables D4.16, D4.17 and D4.18.

In 2009–10, *Cerebral anaesthesia* was the most commonly reported procedure for same-day hospitalisations due to all gynaecological cancers combined (61% of all same-day hospitalisations), reflecting that it is a companion procedure for many surgical procedures. *Curettage and evacuation of uterus* was the next most common procedure (35%), followed by *Examination procedures on uterus* (24%), *Administration of blood and blood products* (22%) and *Excision of lesion of uterus* (11%).

Note that data for same-day hospitalisations for chemotherapy are not considered in this section.

Table 4.5: Most common selected procedures[(a)] for same-day hospitalisations due to all gynaecological cancers combined[(b)], Australia, 2009–10

Procedure description (ACHI[(c)] block code)	No.[(d, e)]	Per cent[(e)]
Cerebral anaesthesia (1910)	1,938	60.6
Curettage and evacuation of uterus (1265)	1,108	34.6
Examination procedures on uterus (1259)	766	23.9
Administration of blood and blood products (1893)	696	21.8
Excision of lesion of uterus (1266)	351	11.0
Total number of same-day hospitalisations due to all gynaecological cancers combined	**3,200**	**100.0**

(a) The selected surgical procedures were determined by Cancer Australia. Appendix Table D4.19 provides a list of the all the procedures considered for analyses.

(b) Pertain to hospitalisations in which the principal diagnosis was coded as C51–C58 in the ICD-10-AM.

(c) Australian Classification of Health Interventions, 6th edition.

(d) Indicates the number of hospitalisations in which the listed procedure was undertaken.

(e) A hospitalisation is counted once for the block if it has at least one procedure reported within the block. The sum of the count for each procedure block does not equal the total number of hospitalisations since no procedures, or multiple procedures, may be undertaken during each hospitalisation. For the same reason, the sum of the percentages does not equal 100.

Source: AIHW National Hospital Morbidity Database.

In 2009–10, for overnight hospitalisations due to all gynaecological cancers combined, the most commonly reported procedures were *Cerebral anaesthesia* and *Generalised allied health interventions (*both procedures undertaken in 57% of hospitalisations), reflecting that these

procedures are commonly provided for patients admitted for medical or surgical care. In addition, 31% of gynaecological cancer hospitalisations involved *Abdominal hysterectomy,* while 18% involved *Administration of pharmacotherapy*, and 15% involved *Postprocedural analgesia*.

Table 4.6: Most common procedures for overnight hospitalisations for all gynaecological cancers combined[a], Australia, 2009–10

Procedure description (ACHI[b] block code)	No.[c, d]	Per cent[d]
Cerebral anaesthesia (1910)	4,488	56.9
Generalised allied health interventions (1916)	4,464	56.6
Abdominal hysterectomy (1268)	2,464	31.2
Administration of pharmacotherapy (1920)	1,419	18.0
Postprocedural analgesia (1912)	1,214	15.4
Total number of overnight hospitalisations due to all gynaecological cancers combined	**7,892**	**100.0**

(a) Pertain to hospitalisations in which the principal diagnosis was coded as C51–C58 in the ICD-10-AM.

(b) Australian Classification of Health Interventions, 6th edition.

(c) Indicates the number of hospitalisations in which the listed procedure was undertaken.

(d) A hospitalisation is counted once for the block if it has at least one procedure reported within the block. The sum of the count for each procedure block does not equal the total number of hospitalisations since no procedures, or multiple procedures, may be undertaken during each hospitalisation. For the same reason, the sum of the percentages does not equal 100.

Source: AIHW National Hospital Morbidity Database.

How many surgical procedures were undertaken due to gynaecological cancers?

Treatment for gynaecological cancers may include surgery, radiotherapy, chemotherapy, hormone therapy and targeted therapies. The treatments used and the order in which they are given vary depending on the stage and type of gynaecological cancer.

In this section, information is provided on the number of overnight hospitalisations of females due to gynaecological cancers in which specific surgical procedures were undertaken in 2009–10. The specific surgical procedures considered in this report were determined by Cancer Australia and are defined as general surgical, colorectal, urological and gynaecological procedures undertaken as part of the treatment of gynaecological cancer. This excludes procedures for diagnosis or pre-invasive lesions of the genital tract and ancillary procedures that may be also done as part of a gynaecological cancer operation. Appendix Table D4.19 provides the full list of surgical procedures considered for this report.

Table 4.7 shows the five most commonly performed surgical procedures for gynaecological cancer hospitalisations. Note that data on the 20 most commonly performed surgical procedures are in Appendix Table D4.20. In 2009–10, 87% of all overnight hospitalisations due to all gynaecological cancers combined had at least one selected surgical procedure reported (6,830 procedures). The most commonly reported surgical procedure was *Total abdominal hysterectomy with removal of adnexa* (12% of overnight hospitalisations), followed by *Division of abdominal adhesions* (10%), *Debulking of lesion of pelvic cavity* (6%), *Radical abdominal hysterectomy* (6%) and *Radical abdominal hysterectomy with excision of pelvic lymph nodes* (5%).

Does the number of surgical procedures vary by hospital sector?

Table 4.7 shows that the proportion of overnight gynaecological cancer hospitalisations with a selected surgical procedure was lower for public than private hospitals. Specifically, 79% of all overnight gynaecological cancer hospitalisations in the public hospital sector had a surgical procedure reported, compared with 98% in the private hospital sector.

In both public and private hospitals, the most commonly reported type of surgical procedure was *Total abdominal hysterectomy with removal of adnexa*, which was undertaken in 15% of all gynaecological cancer hospitalisations in public hospitals and 9% in private hospitals.

Table 4.7: Most common selected surgical procedures[(a)] for overnight hospitalisations due to all gynaecological cancers combined[(b)], Australia, 2009–10

	Public		Private		Total	
Surgical procedure[(c)]	**Number[(d)]**	**Per cent**	**Number[(d)]**	**Per cent**	**Number[(d)]**	**Per cent**
Total abdominal hysterectomy with removal of adnexa	680	14.8	291	8.8	971	12.3
Division of abdominal adhesions	412	9.0	363	11.0	775	9.8
Debulking of lesion of pelvic cavity	191	4.2	288	8.7	479	6.1
Radical abdominal hysterectomy	138	3.0	299	9.1	437	5.5
Radical abdominal hysterectomy with radical excision of pelvic lymph nodes	175	3.8	219	6.6	394	5.0
Total surgical procedures	**3,614**	**78.7**	**3,216**	**97.5**	**6,830**	**86.5**
Total hospitalisations due to all gynaecological cancers combined	**4,595**	**100.0**	**3,297**	**100.0**	**7,892**	**100.0**

(a) The surgical procedures considered in this report were selected by Cancer Australia and are defined as general surgical, colorectal, urological and gynaecological procedures undertaken as part of the treatment of gynaecological cancer. This excludes procedures for diagnosis or pre-invasive lesions of the genital tract and ancillary procedures that may be also done as part of a gynaecological cancer operation. Appendix Table D4.19 provides a list of all surgical procedures considered.

(b) Pertain to hospitalisations for which the principal diagnosis was coded as C51–C58 in the ICD-10-AM.

(c) Australian Classification of Health Interventions, 6th edition.

(d) Indicates the number of hospitalisations in which the listed procedure was undertaken.

Source: AIHW National Hospital Morbidity Database.

Does the number of surgical procedures vary by remoteness?

Table 4.8 shows the number and proportion of surgical procedures for hospitalisations due to all gynaecological cancers combined by remoteness of the patient's area of usual residence at time of hospitalisation. In 2009–10, the proportion of surgical procedures varied by remoteness of the area in which the females lived at time of hospitalisation, with the highest proportion seen in *Inner regional* areas (90%) and the lowest in *Remote and very remote* areas (77%).

For all remoteness areas, *Total abdominal hysterectomy with removal of adnexa* was the most commonly reported type of surgery for gynaecological cancer hospitalisations.

Table 4.8: Most common selected surgical procedures[a] for overnight hospitalisations due to all gynaecological cancers combined[b], by remoteness area of usual residence[c], Australian, 2009–10

Surgical procedure [d]	MC	IR	OR	R+VR	Total[e]
			Number[f]		
Total abdominal hysterectomy with removal of adnexa	635	213	103	17	971
Division of abdominal adhesions	508	181	70	15	775
Debulking of lesion of pelvic cavity	335	95	43	6	479
Radical abdominal hysterectomy	320	75	33	7	437
Radical abdominal hysterectomy with radical excision of pelvic lymph nodes	284	75	27	8	394
Total overnight surgical procedures	**4,629**	**1,408**	**642**	**130**	**6,830**
Total overnight hospitalisations due to all gynaecological cancers combined	**5,374**	**1,562**	**762**	**169**	**7,892**
			Per cent		
Total abdominal hysterectomy with removal of adnexa	11.8	13.6	13.5	10.1	12.3
Division of abdominal adhesions	9.5	11.6	9.2	8.9	9.8
Debulking of lesion of pelvic cavity	6.2	6.1	5.6	3.6	6.1
Radical abdominal hysterectomy	6.0	4.8	4.3	4.1	5.5
Radical abdominal hysterectomy with radical excision of pelvic lymph nodes	5.3	4.8	3.5	4.7	5.0
Total overnight surgical procedures	**86.1**	**90.1**	**84.3**	**76.9**	**86.5**
Total overnight hospitalisations due to all gynaecological cancers combined	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) The surgical procedures considered in this report were selected by Cancer Australia and are defined as general surgical, colorectal, urological and gynaecological procedures undertaken as part of the treatment of gynaecological cancer. This excludes procedures for diagnosis or pre-invasive lesions of the genital tract and ancillary procedures that may be also done as part of a gynaecological cancer operation. Appendix Table D4.19 provides a list of all surgical procedures considered.

(b) Pertain to hospitalisations in which the principal diagnosis was coded as C51–C58 in the ICD-10-AM.

(c) Remoteness was classified according to the Australian Standard Geographical Classification (ASGC) Remoteness Areas (See Appendix A), showing 'MC' as Major cities, 'IR' as Inner regional, 'OR' as Outer regional and 'R+VR' as Remote and very remote areas.

(d) Australian Classification of Health Interventions, 6th edition.

(e) Includes hospitalisations for which remoteness area of the patient was not stated.

(f) Indicates the number of hospitalisations in which the listed procedure was undertaken.

Source: AIHW National Hospital Morbidity Database.

Does the number of surgical procedures vary by socioeconomic status?

The number and proportion of the surgical procedures for gynaecological cancer hospitalisations by socioeconomic status are shown in Table 4.9. In 2009–10, the proportion of gynaecological cancer hospitalisations with a surgical procedure reported varied only slightly by socioeconomic status, with the figures ranging between 85% and 88%.

For all socioeconomic status groups, *Total abdominal hysterectomy with removal of adnexa* was the most commonly reported type of surgery, although the proportion of hospitalisations with this procedure tended to decrease slightly with improving socioeconomic status.

Table 4.9: Most common selected surgical procedures[a] for overnight hospitalisations due to all gynaecological cancers combined[b], by socioeconomic status[c], Australian, 2009–10

Surgical procedure[d]	1 (lowest)	2	3	4	5 (highest)	Total[e]
			Number[f]			
Total abdominal hysterectomy with removal of adnexa	220	237	217	147	147	971
Division of abdominal adhesions	169	171	170	138	126	775
Debulking of lesion of pelvic cavity	86	84	104	81	124	479
Radical abdominal hysterectomy	81	87	70	93	104	437
Radical abdominal hysterectomy with radical excision of pelvic lymph nodes	75	75	64	90	90	394
Total overnight surgical procedures	**1,450**	**1,435**	**1,371**	**1,248**	**1,304**	**6,830**
Total overnight hospitalisations due to all gynaecological cancers combined	**1,679**	**1,697**	**1,563**	**1,413**	**1,514**	**7,892**
			Per cent			
Total abdominal hysterectomy with removal of adnexa	13.1	14.0	13.9	10.4	9.7	12.3
Division of abdominal adhesions	10.1	10.1	10.9	9.8	8.3	9.8
Debulking of lesion of pelvic cavity	5.1	4.9	6.7	5.7	8.2	6.1
Radical abdominal hysterectomy	4.8	5.1	4.5	6.6	6.9	5.5
Radical abdominal hysterectomy with radical excision of pelvic lymph nodes	4.5	4.4	4.1	6.4	5.9	5.0
Total overnight surgical procedures	**86.4**	**84.6**	**87.7**	**88.3**	**86.1**	**86.5**
Total overnight hospitalisations due to all gynaecological cancers combined	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) The surgical procedures considered in this report were selected by Cancer Australia and are defined as general surgical, colorectal, urological and gynaecological procedures undertaken as part of the treatment of gynaecological cancer. This excludes procedures for diagnosis or pre-invasive lesions of the genital tract and ancillary procedures that may be also done as part of a gynaecological cancer operation. Appendix Table D4.19 provides a list of all surgical procedures considered.

(b) Pertain to hospitalisations in which the principal diagnosis was coded as C51–C58 in the ICD-10-AM.

(c) Socioeconomic status was classified using the ABS Index of Relative Socio-economic Disadvantage (see Appendix A).

(d) Australian Classification of Health Interventions, 6th edition.

(e) Includes hospitalisations for which socioeconomic status of the patient was not stated.

(f) Indicates the number of hospitalisations in which the listed procedure was undertaken.

Source: AIHW National Hospital Morbidity Database.

What were the most common additional diagnoses for females with a principal diagnosis of gynaecological cancer?

In this section, comorbidity in relation to hospitalisations of females due to all gynaecological cancers combined is examined by looking at the most common additional diagnoses in females admitted to hospital with a principal diagnosis of gynaecological cancer. Note that a disease or condition is recorded as an additional diagnosis if it is known to affect the treatment of a gynaecological cancer or if it arose during the treatment. Therefore, the additional diagnoses in the hospital morbidity data would not be a complete list of all comorbidities occurring with gynaecological cancers. The data are likely to be indicative, however, of the types of comorbidity experienced by gynaecological cancer patients.

In 2009–10, there were 11,092 hospitalisations reported with a gynaecological cancer as the principal diagnosis (Table 4.10). Around 38% of these had one or more cancer sites (other than gynaecological) recorded as an additional diagnosis, with cancer of *Secondary sites* (C77–C79) being the most common additional diagnosis within this group. This reflects the aggressive nature of gynaecological cancer in spreading to other organ sites. The most common type of secondary cancer was *Respiratory and digestive organs* (27%).

The second most commonly recorded additional diagnosis, where the principal diagnosis was a gynaecological cancer, was *Genitourinary system diseases* (23% of hospitalisations). Within this group, *Non-inflammatory disorders of the female genital tract* were the most common type (10%).

Other common additional diagnoses, where a gynaecological cancer was the principal diagnosis, included *Diseases of the blood and blood forming organs* (14%), *Diseases of the digestive system* (14%) and *Diseases of the circulatory system* (11%).

Table 4.10: Additional diagnosis recorded for hospitalisations due to all gynaecological cancers combined[(a)], Australia, 2009–10

Additional diagnosis (ICD-10-AM codes)	Number[(b, c)]	Per cent
Cancer (C00–C97, D45, D46, D47.1, D47.3) excluding C51–C58	4,200	37.9
Secondary sites (C77–C79)	*4,018*	*36.2*
Secondary malignant neoplasm of respiratory and digestive organs (C78)	*3,011*	*27.1*
Diseases of the genitourinary system (N00–N99)	2,505	22.6
Non-inflammatory disorders of female genital tract (N80–N98)	*1,103*	*9.9*
Disorders of breast (N60–N64)	*819*	*7.4*
Diseases of the blood and blood-forming organs (D50–D89)	1,570	14.2
Diseases of the digestive system (K00–K93)	1,510	13.6
Diseases of the circulatory system (I00–I99)	1,261	11.4
Endocrine, nutritional and metabolic diseases (E00–E89)	1,167	10.5
Certain infectious and parasitic diseases (A00–B99)	783	7.1
Injury, poisoning and other external (S00–T98)	605	5.5
Diseases of the respiratory system (J00–J99)	381	3.4
Mental and behavioural disorders (F00–F99)	357	3.2
Diseases of the skin and subcutaneous tissue (L00–L99)	353	3.2
Diseases of the musculoskeletal system (M00–M99)	279	2.5
Diseases of the nervous system (G00–G99)	245	2.2
Congenital malformations (Q00–Q99)	93	0.8
Diseases of the eye and ear (H00–H95)	55	0.5
Pregnancy, childbirth and the puerperium (O00–O99)	4	0.0
Other diseases and conditions		
Factors influencing health and contact with health services (Z00–Z99)	3,872	34.9
Symptoms, signs and abnormal clinical laboratory findings, not elsewhere classified (R00–R99)	1,842	16.6
Total number of hospitalisations due to gynaecological cancer as the principal diagnosis	**11,092**	**100.0**

(a) Pertain to hospitalisations for which the principal diagnosis was coded as C51–C58 in the ICD-10-AM.

(b) Indicates the number of hospitalisations in which the listed additional diagnosis was recorded. A hospitalisation can have more than one additional diagnosis hence the numbers do not add up to the total.

(c) If more than one additional diagnosis (4-digit level) in each group (3-digit level) is listed to a principal diagnosis of C51–C58 then only one is counted.

Source: AIHW National Hospital Morbidity Database.

5 Expenditure on gynaecological cancers

Key findings

In the 2004–05 financial year in Australia:

- The total expenditure for all gynaecological cancers combined was estimated to be $182 million. Of this total, 57% was spent on cancer screening, 35% on hospital-admitted patient services, 7% on out-of-hospital medical services and 1% on prescription pharmaceuticals.
- The expenditure on hospital-admitted patient services was $25 million for ovarian cancer, $22 million for uterine cancer and $11 million for cervical cancer. For all gynaecological cancers combined, it was estimated to be $63 million.
- Most expenditure for hospital-admitted patient services for ovarian and uterine cancer was spent on females aged 55 to 84, while most expenditure for cervical cancer was spent on females aged 35 to 64.

About expenditure on gynaecological cancers

This chapter focuses on direct health-care costs associated with gynaecological cancer. Specifically, this chapter discusses expenditure on ovarian cancer (ICD-10-AM codes of C56 and C57.0–C57.4), uterine cancer (C54–C55), cervical cancer (C53 and Z12.4) and all gynaecological cancers combined (C51–C58 and Z12.4).

Direct health-care costs include money spent by all levels of government, private health insurers, companies, households and individuals to screen for, diagnose and treat gynaecological cancers. They exclude costs that the health system does not accrue, such as patients' travel costs, costs associated with the social and economic burden on carers and families, and costs relating to lost productivity or quality and length of life. Furthermore, only information on *recurrent* health expenditure (that is, expenditure on health goods, health services, public health activities and other activities that support health systems) and not on capital health expenditure (that is, expenditure on fixed assets such as new buildings and equipment) is shown.

It is not possible to allocate all expenditure on health goods and services to a specific disease. For example, data on cancer research are not available for separate types of cancers. In addition, expenditure on non-admitted patient hospital services, over-the-counter drugs and services by 'other health practitioners' (apart from optometrical services) are not allocated by disease in the Disease Expenditure Database. Thus, the expenditure figures in this chapter provide a minimum estimate of all direct health-care costs for gynaecological cancer. In particular, the exclusion of non-admitted hospital services would lead to an underestimation of expenditure associated with gynaecological cancer as some states and territories provide same-day chemotherapy on a non-admitted patient basis.

The specific sectors of health expenditure covered in this chapter are:

- hospital-admitted patient services—expenditure on services provided to an admitted patient in a hospital, including medical services delivered to privately admitted patients
- out-of-hospital medical expenses—expenditure on medical services funded under the Medicare Benefits Schedule, such as visits to general practitioners and specialists, as well as pathology and imaging services; excludes the Medicare component of cervical screening (this is included in the 'cancer screening' category)
- prescription pharmaceuticals—expenditure on prescriptions subsidised under government schemes (such as the Pharmaceutical Benefits Scheme) and those that are paid for privately; excludes pharmaceuticals dispensed in hospitals (these are included in the 'hospital-admitted patient services' category).

Expenditure for these sectors as well as all cancer screening is considered when comparisons are made between expenditure on all gynaecological cancers combined and expenditure on all cancers and then all diseases.

However, when considering the expenditure for the individual types of gynaecological cancer only one component of such expenditure was considered to be of sufficient quality for publication—namely, hospital-admitted patient services. Note that in the Disease Expenditure Database, the data on hospital expenditure for ovarian and uterine cancer pertain only to those hospitalisations for which the principal diagnosis was 'ovarian cancer' or 'uterine cancer'. In contrast, the data for cervical cancer pertain to those hospitalisations for which the principal diagnosis was 'cervical cancer' or 'special screening examination for neoplasm of cervix'.

The latest data available pertain to the 2004–05 financial year. The data in this chapter were sourced from the Disease Expenditure Database, which is maintained by the AIHW. Further information about the Disease Expenditure Database and how the expenditure estimates were derived can be found in Appendix C and in health expenditure reports produced by the AIHW (AIHW 2005, 2010b).

How much was spent on gynaecological cancers in 2004–05?

In the 2004–05 financial year, the total expenditure for all gynaecological cancers combined was estimated to be $182 million. All gynaecological cancers combined accounted for 13% of the expenditure for all cancers for females, and 0.7% of expenditure for all diseases for females (Table 5.1).

Of the total allocated expenditure on all gynaecological cancer combined for females, 35% ($63 million) was spent on hospital-admitted patient services, 7% ($14 million) was spent on out-of-hospital medical services, 1% ($1.3 million) was spent on prescription pharmaceuticals and 57% ($103.4 million) was spent on cervical screening through the National Cervical Screening Program.

The proportion of health-care expenditure that consisted of hospital-admitted patient services was lower for all gynaecological cancers combined compared with all cancers and all diseases—that is, it equalled 35% of the allocated health-care expenditure for all gynaecological cancers combined compared with 63% for all cancers and 52% for all diseases.

Table 5.1: Expenditure by health-care sector and disease, females, 2004–05

	All gynaecological cancers combined		All cancers[a]		All diseases	
Health-care sector	**$ (million)**	**Per cent**	**$ (million)**	**Per cent**	**$ (million)**	**Per cent**
Hospital-admitted patient services[b]	63.3	34.9	883.6	63.0	12,687.7	52.3
Out-of-hospital medical expenses	13.5	7.4	217.8	15.5	6,921.0	28.5
Prescription pharmaceuticals	1.3	0.7	79.9	5.7	4,443.2	18.3
Cancer screening[c]	103.4	57.0	221.7	15.8	221.7	0.9
Total allocated expenditure[d]	**181.6**	**100.0**	**1,403.0**	**100.0**	**24,273.7**	**100.0**

(a) Includes cancers coded in ICD-10 as C00–C97. Does not include cancers coded as D45, D46, D47.1 and D47.3.

(b) Expenditure for hospital-admitted patient services for all gynaecological cancers combined pertains to those hospitalisations for which the principal diagnosis was coded as C51–C58 or Z12.4 in the ICD-10-AM.

(c) For all gynaecological cancers combined cancer screening pertain to expenditure by the Australian Government and state and territory governments for cervical screening through the National Cervical Screening Program (more information can be found in Box 5.1). For all cancers and all diseases, expenditure for mammographic screening through the BreastScreen Australia Program is also included.

(d) Values may not sum to the total due to rounding.

Source: AIHW Disease Expenditure Database.

Box 5.1 Cervical screening expenditure

Cervical screening expenditure data were supplied by the Department of Health and Ageing and each of the state and territory health authorities. Most of the expenditure was funded by Medicare benefits. Information on the method used to estimate the Medicare component of cervical screening is provided in the AIHW publication *National public health expenditure report 2005-06* (AIHW 2008). The incentive costs associated with the cervical screening program and departmental expenditure in administering the program are also included.

Note that expenditure on cervical examinations for women presenting with symptoms indicative of cancer is not regarded as expenditure on public health, and therefore is not included here.

Expenditure on hospital-admitted patient services for ovarian, uterine and cervical cancer in 2004–05 are in Table 5.2. The expenditure on hospital-admitted patient services was estimated to be $25 million for ovarian cancer, $22 million for uterine cancer and $11 million for cervical cancer.

For all gynaecological cancers combined, the expenditure on hospital-admitted patient services was $63 million. The corresponding value for all cancers for females was $884 million and, for all diseases, it was $12,688 million.

Table 5.2: Hospital-admitted patient services expenditure[(a)] by disease, females, 2004–05

	$ (million)	Percentage of expenditure on all cancers[(b)]	Per cent of expenditure on all diseases
Ovarian cancer	25.3	2.9	0.2
Uterine cancer	22.2	2.5	0.2
Cervical cancer	10.5	1.2	0.1
All gynaecological cancers combined	63.3	7.2	0.5
All cancers[(b)]	883.6	100.0	7.0
All diseases	12,687.7	. .	100.0

. . Not applicable

(a) Expenditure for hospital-admitted patient services for all gynaecological cancers combined pertains to those hospitalisations for which the principal diagnosis was coded as C51–C58 or Z12.4 in the ICD-10-AM. The relevant ICD-10-AM code(s) are C56 and C57.0–C57.4 for ovarian cancer, C54–C55 for uterine cancer and C53 and Z12.4 for cervical cancer.

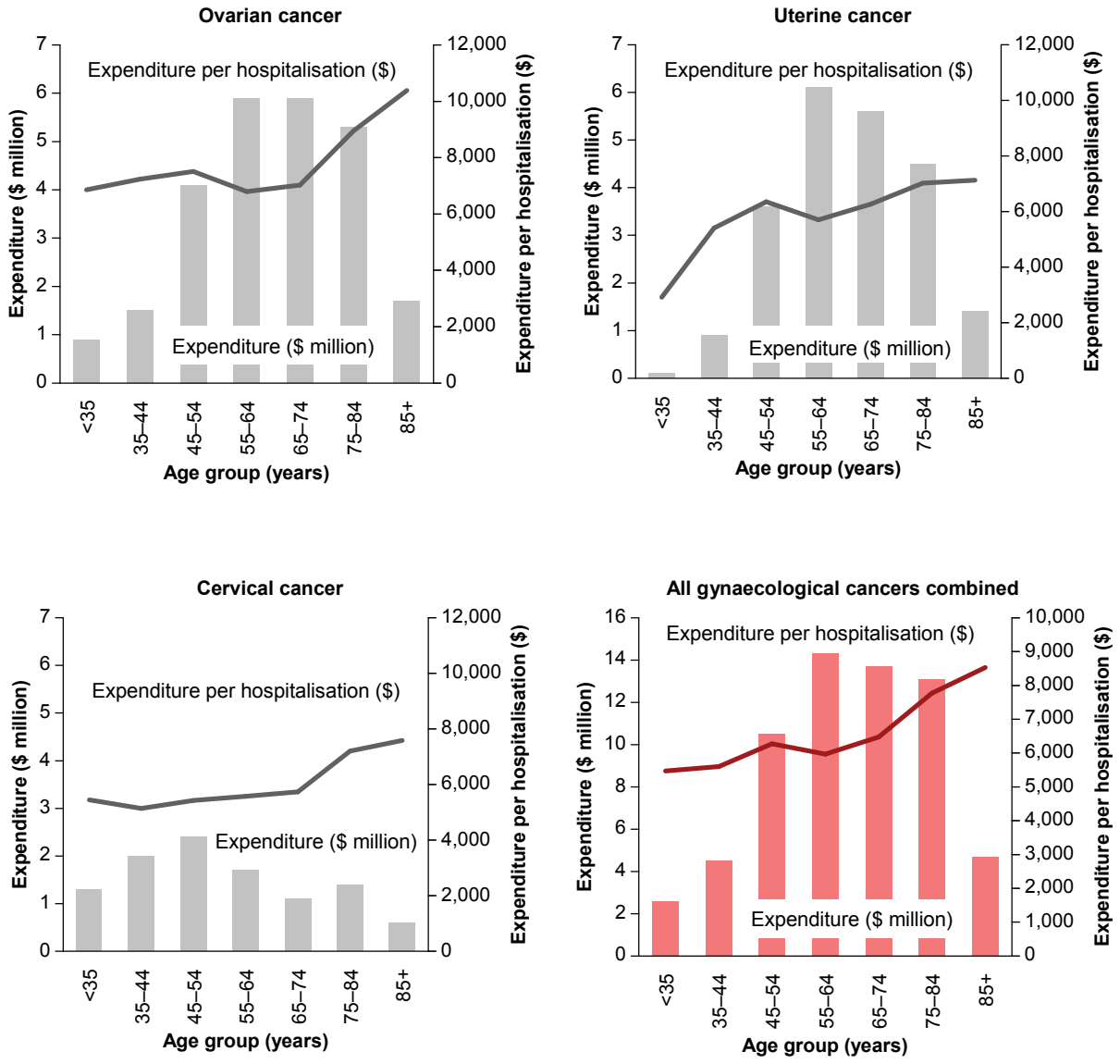
(b) Includes cancers coded ICD-10 as C00–C97. Does not include cancers coded as D45, D46, D47.1 and D47.3.

Source: AIHW Disease Expenditure Database.

Does expenditure differ by age?

Information is available to describe age-related differences in expenditure for hospital-admitted patient services for females with gynaecological cancers (Figure 5.1). In 2004–05, 68% of expenditure on ovarian cancer and 73% of expenditure on uterine cancer was spent on females aged 55–84. In comparison, 58% of expenditure on cervical cancer was spent on females aged 35–64.

The average expenditure per hospitalisation in 2004–05 was highest for females in the older age groups for all types of gynaecological cancer as well as for all gynaecological cancers combined. In particular, the average expenditure for those aged 85 and over was estimated to be $10,379 per hospitalisation for ovarian cancer, $7,128 for uterine cancer and $7,591 for cervical cancer. For all gynaecological cancers combined, the average expenditure was $8,529 for those aged 85 and over.



Notes

1. Expenditure for hospital-admitted patient services for all gynaecological cancers combined pertains to those hospitalisations for which the principal diagnosis was coded as C51–C58 or Z12.4 in the ICD-10-AM. The relevant ICD-10-AM code(s) are C56 and C57.0–C57.4 for ovarian cancer, C54–C55 for uterine cancer and C53 and Z12.4 for cervical cancer.
2. The scale of the y-axis differs for the individual figures shown.
3. The data for this figure are shown in Appendix Table D5.1.

Source: AIHW Disease Expenditure Database.

Figure 5.1: Hospital-admitted patient services expenditure on ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by age group, 2004–05

6 Prevalence of gynaecological cancers

Key findings

As at the end of 2008 in Australia:

- 26,143 females (24.0 per 10,000) were alive following a diagnosis of gynaecological cancer within the previous 10 years, 15,851 females (14.6) within the previous 5 years, and 4,043 females (3.7) within the previous 1 year.
- The 5-year prevalence was 3,630 females for ovarian cancer, 7,944 females for uterine cancer, 2,886 females for cervical cancer, 202 females for vaginal cancer and 1,034 females for vulval cancer.
- The 5-year prevalence rose with increasing age for ovarian, uterine, vaginal and vulval cancer. Meanwhile, the 5-year prevalence of cervical cancer was highest in females aged 30–49 and fell from one age group to the other thereafter.
- The 5-year prevalence for ovarian, uterine and cervical cancer varied according to the state and territory in which the females lived at the time of diagnosis. For all gynaecological cancers combined, the proportion of 5-year prevalence ranged from 11.2 per 10,000 females in the Australian Capital Territory to 15.8 in South Australia.
- The 5-year prevalence for ovarian, uterine and cervical cancer varied according to country of birth. For all gynaecological cancers combined, the proportion of 5-year prevalence was lowest among females born in Southern and Central Asia and North-East Asia (around 8 per 10,000), and highest among those born in Southern and Eastern Europe (28.3).

About prevalence of gynaecological cancers

In this report, limited-duration prevalence is presented, which provides information on the number of females alive who were diagnosed with a gynaecological cancer within a specified time period. Five-year prevalence data, for example, would indicate the number of females alive on 31 December of a specific year who were diagnosed with gynaecological cancer within the previous five years.

Prevalence is a function of incidence and survival. Diseases with high incidence and high survival tend to have high prevalence, whereas diseases with low incidence and low survival tend to have low prevalence. The prevalence of other diseases may represent a balance between conflicting patterns of incidence and survival. Details on incidence of gynaecological cancers and survival after a diagnosis of gynaecological cancer are presented in Chapter 2 and Chapter 8, respectively.

Along with information on incidence, mortality and survival, prevalence is another indicator of the impact of gynaecological cancers in our society, both at the personal or family level, particularly in terms of need for health-care services. The prevalence of a disease may affect hospitalisations and health-care expenditure for this disease and therefore it can be an important measure for workforce planning, resource allocation and service delivery. Details on hospitalisations due to gynaecological cancers and expenditure on gynaecological cancers are presented in Chapter 4 and Chapter 5, respectively.

In this report, limited-duration prevalence is presented using data from the Australian Cancer Database (see Appendix C). Limited-duration prevalence data are presented for 1, 5, 10, 15, 20 and 27 years with an index date of 31 December 2008. Note that 27-year prevalence is the longest duration that can be calculated based on the earliest (1982) and latest (2008) years of incidence data available.

The limited-duration prevalence estimates are presented as an absolute number and as a proportion of the female population, with the proportions calculated based on the total Australian female population as at 31 December 2008. Information is provided on differences in prevalence by age, state and territory, and country of birth.

Unlike the incidence data, which pertain to the number of gynaecological cancers, the prevalence data in this report pertain to the number of *females* who have been diagnosed with gynaecological cancer and are still alive. However, as mentioned in Chapter 2, since it is rare for a female to be diagnosed with more than one primary gynaecological cancer in one year, the number of new gynaecological cancers in a particular year would be very similar to the number of females diagnosed with a gynaecological cancer in that year.

Note that a female who was diagnosed with two separate gynaecological cancers contributed separately to the prevalence of each cancer. However, this female would contribute only once towards prevalence of all gynaecological cancers combined. For this reason, the sum of prevalence for the individual gynaecological cancers does not equal the prevalence of all gynaecological cancers combined.

How prevalent were gynaecological cancers in 2008?

Table 6.1 shows that at the end of 2008, more than 48,300 females were alive who had been diagnosed with a gynaecological cancer in the previous 27 years, which equates to 44.4

per 10,000 females. At the end of 2008, there were 26,143 females (24.0 per 10,000) following a diagnosis of gynaecological cancer within the previous 10 years, 15,851 females (14.6) within the previous 5 years, and 4,043 females (3.7) within the previous 1 year.

Uterine cancer was the most prevalent type of gynaecological cancer regardless of the prevalence duration. For example, of all females alive at the end of 2008, 7,944 had been diagnosed with uterine cancer in the previous five years. The corresponding figure was 3,630 females for ovarian cancer, 2,886 females for cervical cancer, 202 females for vaginal cancer and 1,034 females for vulval cancer.

The higher prevalence of uterine cancer among females compared with other gynaecological cancers is due to a number of factors including:

- the larger number of females diagnosed with uterine cancer each year (see Chapter 3)
- high survival for those diagnosed with uterine cancer compared with other gynaecological cancers; for example, in the period 2006–2010, 5-year relative survival for uterine cancer was 82% compared with 43% for ovarian cancer, 72% for cervical cancer, 45% for vaginal cancer and 72% for vulval cancer (see Chapter 8).

Does prevalence differ by age?

Table 6.2 presents 5-year prevalence by age group. Note that in prevalence statistics, age refers to the age of a female on the index date of 31 December 2008. At the end of 2008, the 5-year prevalence increased with age for ovarian, uterine, vaginal and vulval cancer. When the number of females diagnosed with these cancers is compared with the number in the respective age group, the data indicate that the highest proportion was among those aged 70–79 for ovarian cancer (10.5 per 10,000) and uterine cancer (26.5). For vaginal and vulval cancer, the highest proportion was among those aged 80 and over (1.0 and 5.5, respectively). In contrast, the 5-year prevalence of cervical cancer, as a proportion of the respective female population, was highest among females aged 30–39 (4.5) and 40–49 (4.8) and fell with increasing age thereafter. For all gynaecological cancers combined, the highest 5-year prevalence was for females aged 70–79 (45.2).

Table 6.1: Limited-duration prevalence of gynaecological cancers, Australia, end of 2008

	Ovarian cancer		Uterine cancer		Cervical cancer		Vaginal cancer		Vulval cancer		Other female genital organs & placenta cancer		All gynaecological cancers combined[c]	
Time period	No.[a]	Per 10,000[b]	No.[a]	Per 10,000[b]	No.[a]	Per 10,000[b]	No.[a]	Per 10,000[b]	No.[a]	Per 10,000[b]	No.[a]	Per 10,000[b]	No.[a]	Per 10,000[b]
1-yr prevalence	1,043	1.0	1,913	1.8	710	0.7	55	0.1	262	0.2	103	0.1	4,043	3.7
5-yr prevalence	3,630	3.3	7,944	7.3	2,886	2.7	202	0.2	1,034	1.0	332	0.3	15,851	14.6
10-yr prevalence	5,410	5.0	13,355	12.3	5,287	4.9	307	0.3	1,581	1.5	490	0.5	26,143	24.0
15-yr prevalence	6,771	6.2	17,227	15.8	8,127	7.5	379	0.3	2,028	1.9	566	0.5	34,732	31.9
20-yr prevalence	7,874	7.2	19,754	18.2	10,975	10.1	448	0.4	2,273	2.1	636	0.6	41,507	38.2
27-yr prevalence	8,878	8.2	22,103	20.3	14,190	13.0	498	0.5	2,484	2.3	714	0.7	48,334	44.4

(a) Prevalence refers to number of living females previously diagnosed with cancer, not the number of cancer cases.

(b) Based on the number of females in the Australian population at 31 December 2008.

(c) A female diagnosed with two gynaecological cancers contributed to the prevalence of both cancers but was only counted once towards the prevalence for all gynaecological cancers combined. Thus, the sum of prevalence of the individual gynaecological cancers does not equal the sum for all gynaecological cancers combined.

Source: AIHW Australian Cancer Database 2008.

Table 6.2: Five-year prevalence of gynaecological cancers, by age group, Australia, end of 2008

Age group (years)	Ovarian cancer		Uterine cancer		Cervical cancer		Vaginal cancer		Vulval cancer		Other female genital organs & placenta		All gynaecological cancers combined[c]	
	No.[a]	Per 10,000[b]	No.[a]	Per 10,000[b]	No.[a]	Per 10,000[b]	No.[a]	Per 10,000[b]	No.[a]	Per 10,000[b]	No.[a]	Per 10,000[b]	No.[a]	Per 10,000[b]
<30	151	0.4	22	0.1	155	0.4	5	0.0	8	0.0	15	0.0	355	0.8
30–39	193	1.2	158	1.0	696	4.5	4	0.0	43	0.3	24	0.2	1,111	7.2
40–49	444	2.9	567	3.7	752	4.8	7	0.0	133	0.9	36	0.2	1,906	12.3
50–59	908	6.6	1,862	13.6	529	3.9	53	0.4	195	1.4	62	0.5	3,555	25.9
60–69	901	9.0	2,629	26.2	356	3.5	48	0.5	193	1.9	86	0.9	4,171	41.6
70–79	678	10.5	1,708	26.5	238	3.7	36	0.6	194	3.0	85	1.3	2,913	45.2
80+	355	7.2	998	20.3	160	3.3	49	1.0	268	5.5	24	0.5	1,840	37.4
Total	**3,630**	**3.3**	**7,944**	**7.3**	**2,886**	**2.7**	**202**	**0.2**	**1,034**	**1.0**	**332**	**0.3**	**15,851**	**14.6**

(a) Prevalence refers to number of living females previously diagnosed with cancer, not the number of cancer cases.

(b) Based on the number of females in the Australian population at 31 December 2008.

(c) A female diagnosed with two gynaecological cancers contributed to the prevalence of both cancers but was only counted once towards the prevalence for all gynaecological cancers combined. Thus, the sum of prevalence of the individual gynaecological cancers does not equal the sum for all gynaecological cancers combined.

Source: AIHW Australian Cancer Database 2008.

Does prevalence differ across population groups?

As noted earlier in this chapter, the prevalence of gynaecological cancer is influenced by the incidence of the disease, survival rates and the average age at diagnosis. Since these factors can differ across population groups, prevalence may also differ for these reasons. In this section, prevalence data are presented by state and territory and by country of birth.

Due to low prevalence of vaginal, vulval and other female genital organs and placenta cancer, data on population groups are not presented individually for these cancers.

Does prevalence differ by state and territory?

Table 6.3 presents 5-year prevalence data for the end of 2008 according to the state and territory in which the female lived at the time of diagnosis. Since it is unknown whether a female lived in the same state and territory in 2008 as they did at the time of diagnosis, these data should be used with caution.

For ovarian cancer, the 5-year prevalence as a proportion of the respective female population was highest in Victoria (3.6 per 10,000) and lowest in the Northern Territory (2.1).

The highest 5-year prevalence of uterine cancer as proportion of the respective female population was in South Australia (9.0 per 10,000), while the lowest was in the Northern Territory (4.8).

The proportion of females alive who had been diagnosed with cervical cancer in the previous 5 years was highest in the Northern Territory (3.3 per 10,000) and lowest in the Australian Capital Territory (2.1).

For all gynaecological cancers combined, the highest 5-year prevalence as a proportion of the respective female population was in South Australia (15.8 per 10,000) and the lowest in the Australian Capital Territory (11.2).

Table 6.3: Five-year prevalence of ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by state and territory of diagnosis, Australia, end of 2008

State or territory	Ovarian cancer		Uterine cancer		Cervical cancer		All gynaecological cancers combined[(c)]	
	No.[(a)]	Per 10,000[(b)]	No.[(a)]	Per 10,000[(b)]	No.[(a)]	Per 10,000[(b)]	No.[(a)]	Per 10,000[(b)]
New South Wales	1,214	3.4	2,512	7.1	922	2.6	5,145	14.5
Victoria	974	3.6	2,179	8.0	650	2.4	4,149	15.3
Queensland	661	3.0	1,562	7.2	639	2.9	3,110	14.3
Western Australia	372	3.4	650	6.0	331	3.0	1,474	13.6
South Australia	263	3.2	733	9.0	197	2.4	1,288	15.8
Tasmania	77	3.0	169	6.7	75	3.0	361	14.2
Australian Capital Territory	47	2.7	88	5.0	37	2.1	197	11.2
Northern Territory	22	2.1	51	4.8	35	3.3	127	11.9
Total	**3,630**	**3.3**	**7,944**	**7.3**	**2,886**	**2.7**	**15,851**	**14.6**

(a) Prevalence refers to number of living females previously diagnosed with cancer, not the number of cancer cases.

(b) Based on the number of females in the respective state and territory populations at 31 December 2008.

(c) A female diagnosed with two gynaecological cancers contributed to the prevalence of both cancers but was only counted once towards the prevalence for all gynaecological cancers combined. Thus, the sum of prevalence of the individual gynaecological cancers does not equal the sum for all gynaecological cancers combined.

Source: AIHW Australian Cancer Database 2008.

Does prevalence differ by country of birth?

Prevalence data for the end of 2008 according to country or region of birth are in Table 6.4. The 5-year prevalence of ovarian cancer, as a proportion of the respective female population, was highest among females born in North-West Europe excluding the United Kingdom and Ireland (6.1 per 10,000) and Southern and Eastern Europe (5.9). This compares with a figure of 2.7 per 10,000 for females born in Australia. The lowest proportion of females alive who had been diagnosed with ovarian cancer in the previous 5 years was for females born in North-East Asia (2.0 per 10,000).

For uterine cancer, the 5-year prevalence, as a proportion of the respective female population, was highest among females born in Southern and Eastern Europe (17.0 per 10,000) and lowest among those born in Southern and Central Asia, North-East Asia and the Americas excluding USA and Canada (around 4 for these regions). In comparison, the figure was 6.1 for females born in Australia.

The proportion of females alive who had been diagnosed with cervical cancer within the previous 5 years was highest among females born in Oceania and Antarctic excluding Australia and New Zealand (6.4 per 10,000). By comparison, the figure was 2.2 per 10,000 females for those born in Australia. Relatively lower proportions of 5-year prevalence were observed among those born in Southern and Central Asia, and North Africa and the Middle East (1.1 and 1.4, respectively).

For all gynaecological cancers combined, the proportion of 5-year prevalence was highest among females born in Southern and Eastern Europe (28.3 per 10,000). By comparison, the figure was 12.1 for those born in Australia. The lowest proportions of 5-year prevalence were among those born in Southern and Central Asia, and North-East Asia (around 8 per 10,000 for each region).

Table 6.4: Five-year prevalence of ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by country/region of birth, Australia, end of 2008

Country/region of birth[a]	Ovarian cancer		Uterine cancer		Cervical cancer		All gynaecological cancers combined[d]	
	No.[b]	Per 10,000[c]	No.[b]	Per 10,000[c]	No.[b]	Per 10,000[c]	No.[b]	Per 10,000[c]
Southern and Eastern Europe	248	5.9	712	17.0	135	3.2	1,187	28.3
Oceania and Antarctica excl. Australia and NZ	31	4.4	85	12.2	45	6.4	168	24.1
North-West Europe, excl. UK and Ireland	98	6.1	213	13.2	45	2.8	377	23.3
United Kingdom (UK) and Ireland	336	5.5	620	10.1	229	3.7	1,288	21.0
North Africa and the Middle East	60	4.0	123	8.1	21	1.4	219	14.5
United States of America (USA) and Canada	24	3.9	39	6.3	9	1.5	79	12.9
New Zealand (NZ)	80	3.2	118	4.7	93	3.7	321	12.8
Australia	**2,191**	**2.7**	**4,917**	**6.1**	**1,749**	**2.2**	**9,790**	**12.1**
South-East Asia	125	3.0	228	5.5	119	2.9	497	12.1
Americas, excl. USA and Canada	26	4.4	25	4.2	18	3.0	70	11.8
Sub-Saharan Africa	48	3.6	66	4.9	20	1.5	143	10.7
North-East Asia	66	2.0	135	4.2	56	1.7	270	8.4
Southern and Central Asia	56	2.8	77	3.8	23	1.1	166	8.3
Inadequately described, not stated or unknown	241	. .	586	. .	324	. .	1,276	. .
Total	**3,630**	**3.3**	**7,944**	**7.3**	**2,886**	**2.6**	**15,851**	**14.5**

. . Not applicable

(a) Classified according to the Standard Australian Classification of Countries, second edition (see Appendix A).

(b) Prevalence refers to number of living females previously diagnosed with cancer, not the number of cancer cases.

(c) Based on the number of females in the Australian population at 31 December 2008.

(d) A female diagnosed with two gynaecological cancers contributed to the prevalence of both cancers but was only counted once towards the prevalence for all gynaecological cancers combined. Thus, the sum of prevalence of the individual gynaecological cancers does not equal the sum for all gynaecological cancers combined.

Source: AIHW Australian Cancer Database 2008.

7 Burden of disease due to gynaecological cancers

Key findings

In 2012 in Australia:

- The burden of disease due to ovarian cancer is estimated to be 13,200 disability-adjusted life years (DALYs), while that due to uterine cancer is estimated to be 5,300 DALYs and cervical cancer to be 4,100 DALYs.
- Ovarian cancer is estimated to be the 28th leading contributor to burden of disease among females, while uterine cancer is estimated to be 62nd and cervical cancer 74th.
- 92% of DALYs for ovarian cancer, 70% of DALYs for uterine cancer and 83% of DALYs for cervical cancer is expected to be due to premature death.
- The estimated burden of disease due to ovarian and uterine cancer is concentrated in females aged 45–79, while the burden of cervical cancer is estimated to be concentrated in females aged 30–79.

About burden of disease

The effect of cancer on the health of Australians can be summarised by using a variety of different measures that combine information on both fatal and non-fatal health outcomes into a single number. Such measures can be used for a range of purposes, including:

- comparing the burden associated with different cancers
- comparing the effect of a particular cancer on different population groups or over time
- setting priorities for health planning and public health programs, as well as research and development (Murray et al. 1999).

Of the available summary measures, one of the most commonly used is the 'disability-adjusted life year' (DALY), also commonly referred to as 'burden of disease'. The DALY combines information on the extent of:

- premature death—measured by the years of life lost (YLL) due to disease or injury, and
- non-fatal health outcomes—measured by years of 'healthy' life lost due to disease, disability or injury—years lost due to disability (YLD).

In order to combine these two health measures into a summary measure, the DALY uses time as a common currency. Hence, the DALY is a measure of the years of life lost due to premature death (YLL) *and* years of healthy life lost due to disease, disability or injury (YLD), or a combination of the two. The more DALYs associated with a particular disease, the greater the burden. Further information about DALYs can be found in Box 7.1 and Appendix C.

In this chapter, the estimated burdens of disease in 2012 due to ovarian, uterine and cervical cancers are presented, along with comparisons with other diseases that are major contributors to the overall burden of disease in females. These estimations are derived from projections of the burden of disease assessed for 2003. It is important to note that the projections are not intended to function as exact forecasts, but to give an indication of what might be expected if the stated assumptions were to apply over the projected time frame. Information about the method used to estimate the burden of disease in 2012 can be found in the AIHW report by Begg et al. (2007) and in Appendix C of this report.

The data source for this chapter was the AIHW Burden of Disease Database. In this source ovarian cancer pertains to the ICD-10 codes of C56 and C57.0–57.4 and uterine cancer to the ICD-10 code of C54. Thus, ovarian and uterine cancers pertain to a different subset of ICD-10 codes than generally considered in this report. Cervical cancer is defined to include the ICD-10 code of C53—as in other chapters of this report.

Box 7.1: What is a 'DALY'?

One disability-adjusted life year or 'DALY' is one year of 'healthy life' lost due to a disease or injury. To illustrate the basic concept, a person who has been healthy all his life but who suddenly dies of a heart attack 20 years early than expected has lost 20 years of healthy life—20 DALYs. For a person who lives to a normal old age but has been only 'half-well' for 30 years, there are 15 DALYs. Using information about the duration and severity of diseases and injuries in individuals, and the pattern of these conditions among the community, DALYs can be added up for each problem (for example, gynaecological cancer) and also combined to give a grand total for a specific disease group, such as cancer (AIHW 2010e).

Estimated burden of disease in 2012

In 2012, the burden of disease and injury for females in Australia is estimated to be more than 1.4 million DALYs, while the burden due to cancer is estimated to be more than 250,000 DALYs.

Table 7.1 presents the estimated leading contributors to the burden of disease for females in 2012, along with selected cancers including ovarian, uterine and cervical cancer. Ovarian cancer is expected to account for 13,200 DALYs (5.1% of all female burden due to cancer) in 2012, while uterine cancer is expected to account for 5,300 DALYs (2.1%) and cervical cancer for 4,100 DALYs (1.6%).

In terms of the leading contributors to burden of disease for females in 2012, ovarian cancer is expected to rank twenty-eighth, uterine cancer sixty-second and cervical cancer seventy-fourth.

Table 7.1: Estimated[(a)] leading contributors to the burden of disease, including leading cancers, females, Australia, 2012

Cause	Disability-adjusted life years (DALYs)	Per cent of total DALYs	Per cent of DALYs due to cancer	Rank
Anxiety and depression	135,700	9.6	. .	1
Ischaemic heart disease	107,100	7.6	. .	2
Type 2 diabetes	88,000	6.2	. .	3
Dementia	81,500	5.8	. .	4
Sense organ disorders	63,400	4.5	. .	5
Stroke	62,800	4.4	. .	6
Chronic obstructive pulmonary disease (COPD)	40,800	2.9	. .	9
All cancers	*256,900*	*18.2*	*100.0*	. .
Breast cancer	61,300	4.3	23.9	7
Lung cancer	43,400	3.1	16.9	8
Bowel cancer	30,700	2.2	12.0	11
Ovarian cancer	13,200	0.9	5.1	28
Uterine cancer	5,300	0.4	2.1	62
Cervical cancer	4,100	0.3	1.6	74
Total for all causes	**1,413,000**	**100.0**	**. .**	**. .**

. . Not applicable

(a) The estimates are projected from a 2003 baseline. See Appendix C for further details.

Source: AIHW Burden of Disease database.

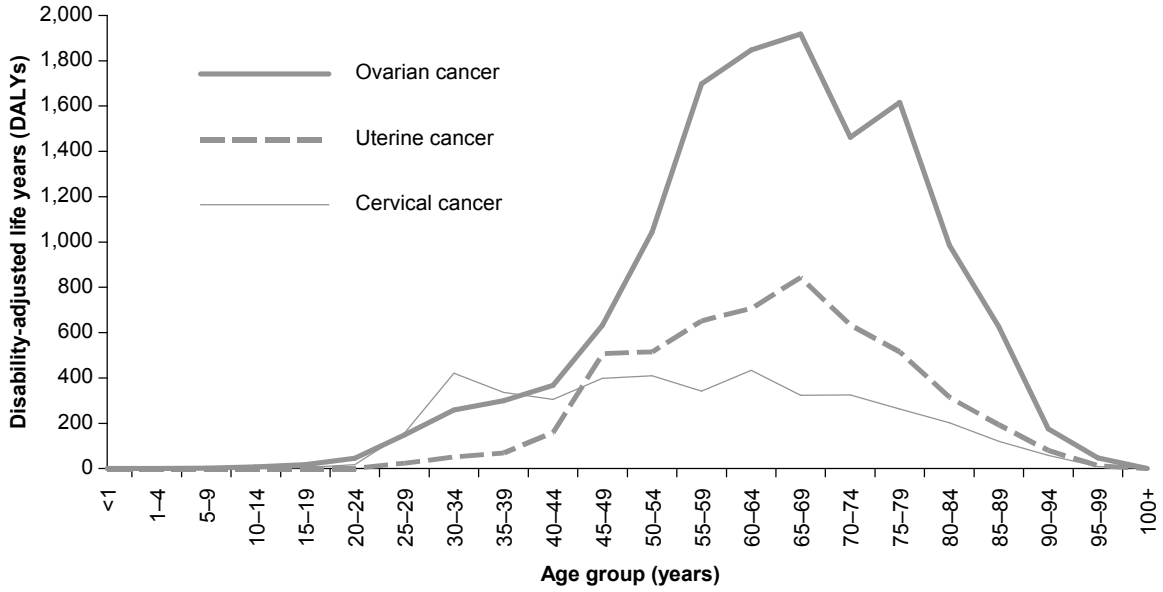
Table 7.2 shows the extent of the estimated burden of disease associated with the leading causes for females in 2012 that were due separately to premature death (YLL), and disease, disability or injury (YLD). For cancer, causes of years of healthy life lost to disability include side effects during and after treatment (for example, during and after radiotherapy or chemotherapy), and the psychosocial effects of having gone through treatment.

Due to the relatively poor prognosis from many cancers compared with the majority of other diseases, most cancers contribute more years of life lost (YLL) than years of healthy life lost to disability (YLD). This is also the case for ovarian, uterine and cervical cancer, although the proportion of DALYs due to premature mortality is expected to vary considerably for these three cancers. In 2012, 92% of DALYs for ovarian cancer is expected to be due to premature death; the corresponding proportions for uterine and cervical cancer are 70% and 83%, respectively. These figures compare with an average of 83% for all cancers combined.

In terms of the leading causes of the female mortality burden, ovarian, uterine and cervical cancers are expected to rank twelfth, forty-seventh and fiftieth, respectively. These cancers are expected to rank eighty-seventh, seventy-fifth, and 103rd respectively in terms of causes of disability burden.

Differences by age at diagnosis

In 2012, it is expected that the burden of ovarian and uterine cancers will be concentrated in females aged 45–79, with the burden for both of these cancers peaking in those aged 65–69. The distribution of the burden of cervical cancer is expected to be flatter than that of ovarian and uterine cancer, with the burden concentrated in females aged 30–79 (Figure 7.1).



Notes

1. The estimates are projected from a 2003 baseline. See Appendix C for further details.
2. The data for this figure are in Appendix Table D7.1.

Source: AIHW Burden of Disease database

Figure 7.1: Estimated burden of disease due to ovarian, uterine and cervical cancer, by age group, females, 2012

Table 7.2: Estimated leading causes of burden of disease, including leading cancers, by fatal (YLL) and non-fatal (YLD) components, females, 2012[a]

	Fatal component			Non-fatal component			Total[c]		
Cause	**Years of life lost (YLL)**	**Percentage of total YLL**	**Rank**	**Years of healthy life lost (YLD)**	**Percentage of total YLD**	**Rank**	**Disability-adjusted life years (DALYs)**	**% of DALYs due to YLL**	**% of DALYs due to YLD**
Anxiety and depression	300	0.0	103	135,400	16.8	1	135,700	0.2	99.8
Ischaemic heart disease	82,600	13.6	1	24,500	3.0	8	107,100	77.1	22.9
Type 2 diabetes	13,400	2.2	10	74,500	9.2	2	88,000	15.2	84.7
Dementia	22,500	3.7	7	59,000	7.3	5	81,500	27.6	72.4
Sense organ disorders	0	0.0	162	63,400	7.9	3	63,400	0.0	100.0
Stroke	44,900	7.4	2	17,900	2.2	12	62,800	71.5	28.5
Chronic obstructive pulmonary disease	24,200	4.0	6	16,600	2.1	14	40,800	59.3	40.7
All cancers[b]	*212,200*	*35.0*	. .	*44,700*	*5.5*	. .	*256,900*	*82.6*	*17.4*
Breast cancer	40,800	6.7	3	20,500	2.5	9	61,300	66.6	33.4
Lung cancer	40,500	6.7	4	2,900	0.4	53	43,400	93.3	6.7
Bowel cancer	25,300	4.2	5	5,300	0.7	35	30,700	82.4	17.3
Ovarian cancer	12,100	2.0	12	1,100	0.1	87	13,200	91.7	8.3
Uterine cancer	3,700	0.6	47	1,600	0.2	75	5,300	69.8	30.2
Cervical cancer	3,400	0.6	50	700	0.1	103	4,100	82.9	17.1
Total for all causes	**605,500**	**100.0**	. .	**807,500**	**100.0**	. .	**1,413,000**	**42.9**	**57.1**

(a) The estimates are projected from a 2003 baseline. See Appendix C for further details.

(b) Includes cancers coded in ICD-10 as C00–C96.

(c) The estimates may not add up to the total due to rounding.

Source: AIHW Burden of Disease database.

8 Survival after a diagnosis of gynaecological cancer

Key findings

In the period 2006–2010 in Australia the 5-year relative survival:

- was 43% for ovarian cancer, 82% for uterine cancer, 72% for cervical cancer and 67% for all gynaecological cancers combined
- fell markedly with increasing age for ovarian cancer (from 87% for those aged less than 30 to 16% for those aged 80 and over) and cervical cancer (from 90% to 30%). For uterine cancer, the 5-year relative survival ranged between 86% and 91% for those under the age of 60, decreasing significantly to 59% for those aged 80 and over
- varied by remoteness area for ovarian and cervical cancer, while there was only limited variation by remoteness for uterine cancer
- varied by socioeconomic status for cervical cancer. However, there was no significant variation by socioeconomic status for ovarian and uterine cancer.

During the period 2000–2010:

- 5-year crude survival for ovarian and uterine cancer, and all gynaecological cancers combined did not differ significantly by Aboriginal and Torres Strait Islander status. However, Aboriginal and Torres Strait Islander females diagnosed with cervical cancer had significantly lower 5-year crude survival (51%) than their non-Indigenous counterparts (66%).

Between periods 1982–1987 and 2006–2010, the 5-year relative survival for:

- ovarian cancer rose significantly from 32% to 43%
- uterine cancer rose significantly from 75% to 82%
- cervical cancer rose significantly from 68% in 1982–1987 to 71% in 1988–1993, but did not change significantly in the time periods thereafter.

The mortality-to-incidence ratios calculated using 2008 GLOBOCAN data for Australian females diagnosed with:

- ovarian cancer was relatively low at 0.6, which suggests better survival prospects than their counterparts in many other countries and regions
- uterine cancer was low at 0.1, which suggests better survival prospects than their counterparts in many other countries and regions
- cervical cancer was low at 0.3, which suggests better survival prospects than their counterparts in many other countries and regions.

About survival after a diagnosis of gynaecological cancer

Information on the survival of females diagnosed with a gynaecological cancer provides not only an indication of the prognosis of the cancer but also the success of control programs and treatments available. It refers to the probability of being alive for a given amount of time after diagnosis and reflects the impact of the cancer diagnosis.

Survival is influenced by a range of factors, including the characteristics of those diagnosed with cancer (for instance, age, additional illness and lifestyle); the nature of the tumours (for instance, stage at diagnosis, grade and histology type); and the health-care system (for instance, availability of screening, diagnostic and treatment facilities, and follow-up services) (Black et al. 1998; WCRF & AICR 2007).

Since survival estimates are based on cancer outcomes of a group of females with diverse mix of gynaecological cancer and other characteristics, they provide an indication of the *average* survival experience. They do not reflect an *individual's* chance of surviving since this is affected by specific characteristics of the individual and the cancer they have. In this report, 'relative survival' statistics are used to examine survival from a gynaecological cancer. These estimates are derived by comparing the survival of females diagnosed with a gynaecological cancer (that is, observed survival) with that experienced by females in the general population, matched for age, in the same calendar year and where applicable, matched for remoteness area and socioeconomic status (that is, expected survival). An estimate of less than 100% suggests that those with a gynaecological cancer had a lower chance of survival than the general population. For example, 5-year relative survival of 50% for females diagnosed with a particular type of gynaecological cancer means that these females had half the chance of surviving at least 5 years after diagnosis relative to comparable females in the general population.

The period method developed by Brenner and Gefeller (1996) was used to calculate relative survival estimates. The period method examines the survival experience of females at risk of dying from cancer in a given period (see Box 8.1 and Appendix B for further information).

Box 8.1: Period survival

In this report, relative survival (see Box 8.2 for definition) was calculated using the period method (Brenner & Gefeller 1996). This method calculates survival using a given follow-up or at-risk period. Survival estimates are based on the survival experience of people who were diagnosed before or during this period, and who were at risk of dying during this period.

The period method is an alternative to the traditional cohort method, which focuses on a group of people diagnosed with cancer in a past time period, and follows these people over time. By its nature the period method is likely to produce more up-to-date estimates of survival than the cohort method. More information about the period method is in Appendix B.

In this chapter, 1-year survival is shown along with longer-term survival proportions such as 5- and 10-year survival, after a diagnosis of invasive gynaecological cancer. Comparisons in survival are made over time, by age group and by histological type. Differences in relative survival by remoteness of usual residence and socioeconomic status are also presented, with

the data sourced from the AIHW publication '*Cancer survival and prevalence in Australia, period estimates from 1982 to 2010*' (AIHW 2012c). Relative survival proportions cannot be calculated according to Aboriginal and Torres Strait Islander status due to data limitations and the lack of necessary life tables. However, *crude* survival (that is, observed survival, see Box 8.2 for definition) estimates can be calculated according to Aboriginal and Torres Strait Islander status for females in four Australian states and territories. The results from these calculations are included in this chapter. In addition, international data on survival are provided.

The survival estimates in this chapter are based on the analysis of records of gynaecological cancers diagnosed between 1982 and 2008 as held in the Australian Cancer Database 2008 (ACD). Data from the National Death Index (NDI) on deaths (from any cause) that occurred up to 31 December 2010 were used to determine which females with a gynaecological cancer had died and when this death occurred.

Box 8.2: Survival terminology in this report

Survival: a general term indicating the probability of being alive for a given amount of time after a diagnosis of cancer.

Observed survival: the proportion of people who remain alive for a given period of time following a diagnosis of cancer. Observed survival estimates are crude estimates calculated from population-based cancer data.

Expected survival: the proportion of people in the general population who remain alive for a given period of time. Expected survival estimates are crude estimates calculated from life tables of the general population and made comparable by weighting by age, sex, calendar year and where applicable, remoteness area and socioeconomic status, to the cancer cohort.

Relative survival: the ratio of observed survival to expected survival. Relative survival describes the survival of individuals with cancer, allowing for underlying mortality normally experienced by comparable sections of the general population.

What was the prospect of survival for females with a gynaecological cancer?

Table 8.1 shows 1-, 5- and 10-year relative survival estimates for the period 2006–2010 for females diagnosed with a gynaecological cancer.

In the period 2006–2010, the 1-year relative survival for females diagnosed with ovarian cancer was 76%. The corresponding 5- and 10-year relative survival estimates were considerably lower at 43% and 34%, respectively. Note that survival from ovarian cancer tended to be lower than that from other types of gynaecological cancer, with the exception of vaginal cancer. The reasons for the poor survival outcomes for ovarian cancer include the relatively high proportion of cases diagnosed at an advanced stage (Tracey et al. 2009b).

The 1-year relative survival estimate for females diagnosed with uterine cancer was 93%, while 5-year relative survival was 82% and 10-year survival was 78%. The survival estimate for uterine cancer was significantly higher than the estimates for the other types of gynaecological cancer regardless of the survival duration considered.

For females diagnosed with cervical cancer, 1-year relative survival was 87%, 5-year survival was 72% and 10-year survival was 68%. While the 1-year survival estimate for cervical cancer

was similar to the estimate for all gynaecological cancers combined, the 5- and 10-year survival estimates were significantly higher.

The 1-year relative survival rate for females diagnosed with vaginal cancer was 72% in the period 2006–2010. The corresponding 5- and 10-year survival estimates were much lower at 45% and 38%, respectively. The survival estimates for vaginal cancer were significantly lower than those for all other types of gynaecological cancer, with the exception of ovarian cancer.

In the period 2006–2010, the 1-year relative survival estimate for vulval cancer was 87%, with the corresponding 5- and 10-year relative survival estimates equalling 71% and 61%, respectively. While the 1- and 10-year relative survival estimates were not significantly different from the estimates for all gynaecological cancers combined, the 5-year relative survival estimate was somewhat higher and significantly so.

For females diagnosed with cancer of other female genital organs and placenta, the 1-, 5- and 10-year relative survival estimates were 83%, 55% and 48%, respectively. The 5- and 10-year relative survival estimates were significantly lower than the estimates for all gynaecological cancers combined.

In the period 2006–2010, 1-year relative survival for all gynaecological cancers combined was 86%, 5-year survival was 67% and 10-year survival was 61%.

Table 8.1: Relative survival for gynaecological cancers, Australia, 2006–2010

	1-year relative survival		5-year relative survival		10-year relative survival	
Site/type of cancer	**RS (%)**	**95% CI**	**RS (%)**	**95% CI**	**RS (%)**	**95% CI**
Ovary (C56)	76.0	74.6–77.3	42.8	41.4–44.2	33.5	32.1–34.9
Uterus (C54–C55)	92.7	92.0–93.4	81.7	80.6–82.7	78.1	76.8–79.4
Cervix (C53)	86.6	85.2–88.0	71.7	70.0–73.4	68.0	66.2–69.8
Vagina (C52)	71.5	65.1–77.0	44.9	38.6–51.1	37.7	31.3–44.2
Vulva (C51)	87.3	84.7–89.5	71.3	68.0–74.5	61.4	57.4–65.4
Other female genital organs & placenta (C57–C58)	83.3	78.7–87.1	55.2	49.8–60.3	47.7	42.9–53.3
All gynaecological cancers combined (C51–C58)	**86.1**	**85.5–86.7**	**67.0**	**66.3–67.8**	**61.3**	**60.4–62.1**

Note: Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.

Source: AIHW Australian Cancer Database 2008.

Does survival differ by age?

Differences in relative survival estimates by age at diagnosis are in Figure 8.1 for ovarian, uterine and cervical cancer, and all gynaecological cancers combined for the period 2006–2010.

For ovarian cancer, the 1-year relative survival was highest for females aged less than 30 (94%) but this estimate was not significantly higher than the estimates for females aged 30–39 through to 50–59. However, for all age groups from 60–69 onwards, there was a significant decrease in the relative survival from one age group to the next, with those aged 80 and over having the lowest survival (38%). The 5-year relative survival estimates were not significantly different for those aged less than 30 (87%) and those aged 30–39 (76%) but from

that age onwards the estimates fell significantly between successive age groups, reaching 16% for those aged 80 and over. The 10-year survival fell significantly between successive age groups, ranging from 84% in those aged less than 30 to 11% in those aged 80 and over.

For uterine cancer, the 1-, 5- and 10-year relative survival estimates were high for young and middle-aged females, while they were significantly lower for older females. That is, the 1-year relative survival ranged between 95% and 97% for females under the age of 70, decreasing significantly to 91% for females aged 70–79 and to 80% for females aged 80 and over. The 5-year relative survival ranged between 86% and 91% for those under the age of 60, decreasing significantly to 59% for those aged 80 and over. The 10-year relative survival ranged between 85% and 90% for those under the age of 60, decreasing significantly to 55% for females 80 and over. Note that the estimates for females under the age of 30 are not discussed due to the small number of females in that age group.

For cervical cancer, the 1-, 5- and 10-year relative survival estimates tended to decrease continuously and markedly with increasing age (although in most cases the difference from one age group to the next was not statistically significant). The 1-year relative survival was highest for females aged 30–39 (96%), decreasing to 60% for females aged 80 and over. The 5- and 10-year relative survival was highest for females under the age of 30 (both at 90%) and fell by two-thirds to 30% and 34% respectively for females aged 80 and over.

For all gynaecological cancers combined, 1-year relative survival was above 90% for females aged less than 70, while it was significantly lower for females aged 70–79 (81%) and 80 and over (62%). The 5- and 10-year relative survival estimates decreased significantly between most age groups, with the 5-year relative survival ranging from 88% in those aged less than 30 to 39% in those aged 80 and over and the 10-year relative survival ranging from 87% in those aged less than 30 to 36% for those aged 80 and over.

Has survival from gynaecological cancers changed over time?

Survivals for ovarian, uterine and cervical cancer, and all gynaecological cancers combined are in Figure 8.2 for five time periods from 1982–1987 to 2006–2010. Note that by using the period method, relative survival estimates for 1 to 6 years can be calculated for the earliest period and for 1 to 29 years for the latest period. More information about the period method is in Box 8.1 and Appendix B.

Regardless of time period, the relative survival estimates fell most sharply during the first years following diagnosis for each of the selected cancers. This indicates that the relative risk of dying from these selected gynaecological cancers was highest during the initial years after diagnosis. In contrast, from about 5 to 8 years after diagnosis onwards, the relative survival estimates were virtually stable, suggesting that the additional risk of dying from these selected gynaecological cancers was small for females who survived for 5 to 8 years or more after their diagnosis.

The data indicate that increases in survival for ovarian cancer have occurred. When comparing between the periods 1982–1987 and 2006–2010, 1-year relative survival increased significantly from 63% to 77%, and 5-year relative survival increased significantly from 32% to 43%.

Similarly, survival for uterine cancer increased between the earliest and latest time periods. Specifically, 1-year relative survival increased significantly from 88% in 1982–1987 to 93% in

2006–2010, while 5-year relative survival increased significantly from 75% to 82%. Note that no significant change in 1- and 5-year survival for uterine cancer was seen between the two most recent time periods.

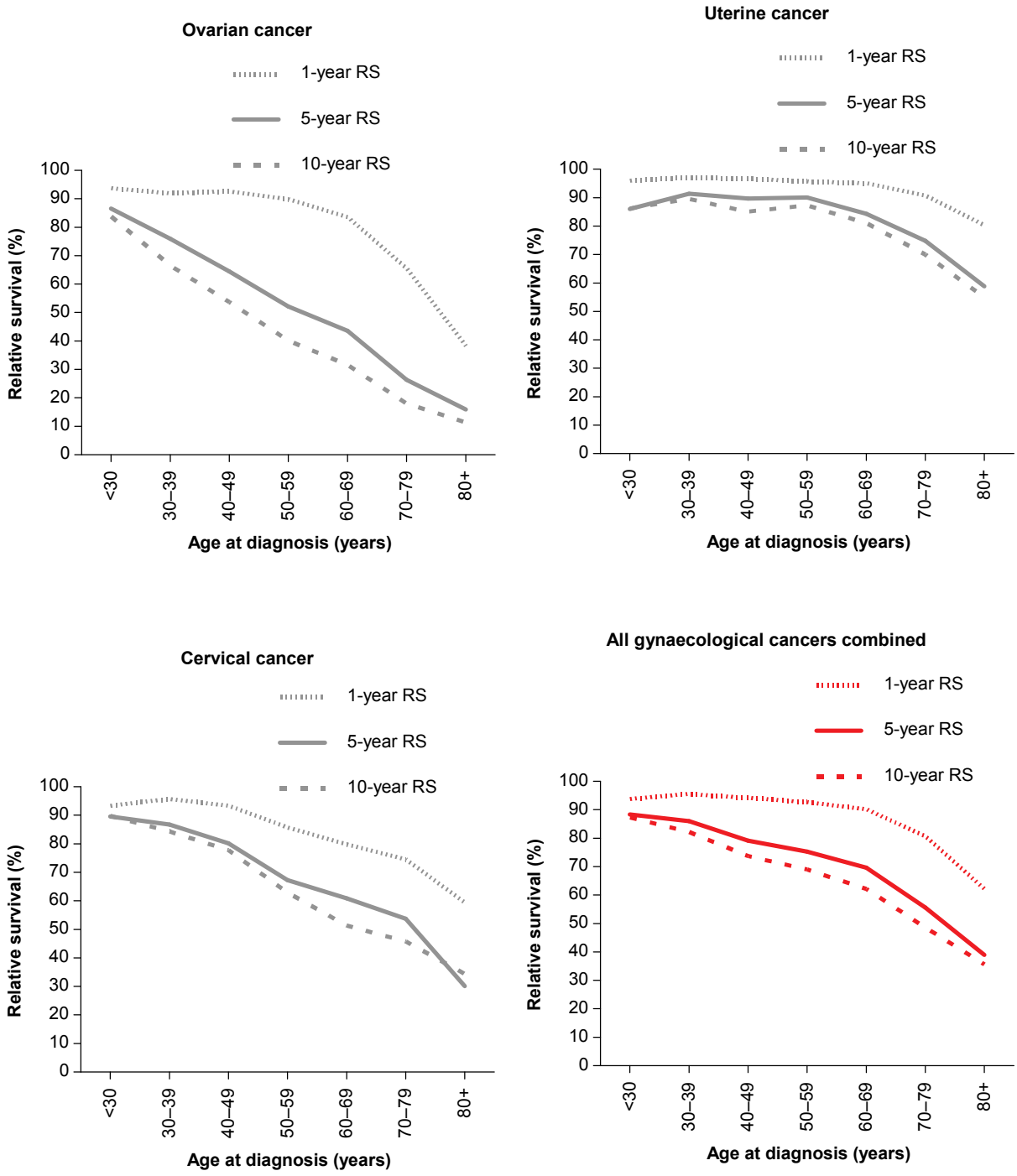
For cervical cancer, there was no statistically significant change in 1-year relative survival between any of the five time periods. While 5-year relative survival increased significantly from 68% in 1982–1987 to 71% in 1988–1993, there was no significant change seen between the more recent time periods.

For all gynaecological cancers combined, increases in survival from 1982–1987 to 2006–2010 are evident, with 1-year relative survival increasing significantly from 81% to 87%, and 5-year relative survival increasing significantly from 60% to 67%.

Box 8.3: Explaining trends in survival

Possible reasons for the overall increases in survival from ovarian cancer, uterine cancer, and all gynaecological cancers combined over time include the following: more effective investigation and staging of disease; improvements in the speed and appropriateness of referral; increasing subspecialisation in gynaecological oncology and the establishment of multidisciplinary teams; advances in the effectiveness of treatment and more widespread availability of treatment (ACN & NBCC 2004; AIHW 2012c; Tracey et al. 2009b; Trovik et al. 2012).

The lack of continued increase in survival from cervical cancer (following that associated with the introduction of cervical screening) has been observed in other countries (Brenner & Hakulinen 2002; Quinn et al. 2008) and may be artificial and related to a selection effect from population-level cervical screening. One suggestion is that cervical screening has led to a shift in the age at diagnosis to older ages, which is associated with poorer survival (Brenner & Hakulinen 2002). It has also been suggested that cancers which occur despite the effects of cervical screening may be more aggressive and rapidly growing, leading to poorer survival despite lower incidence and mortality overall (de Vries et al. 2010).

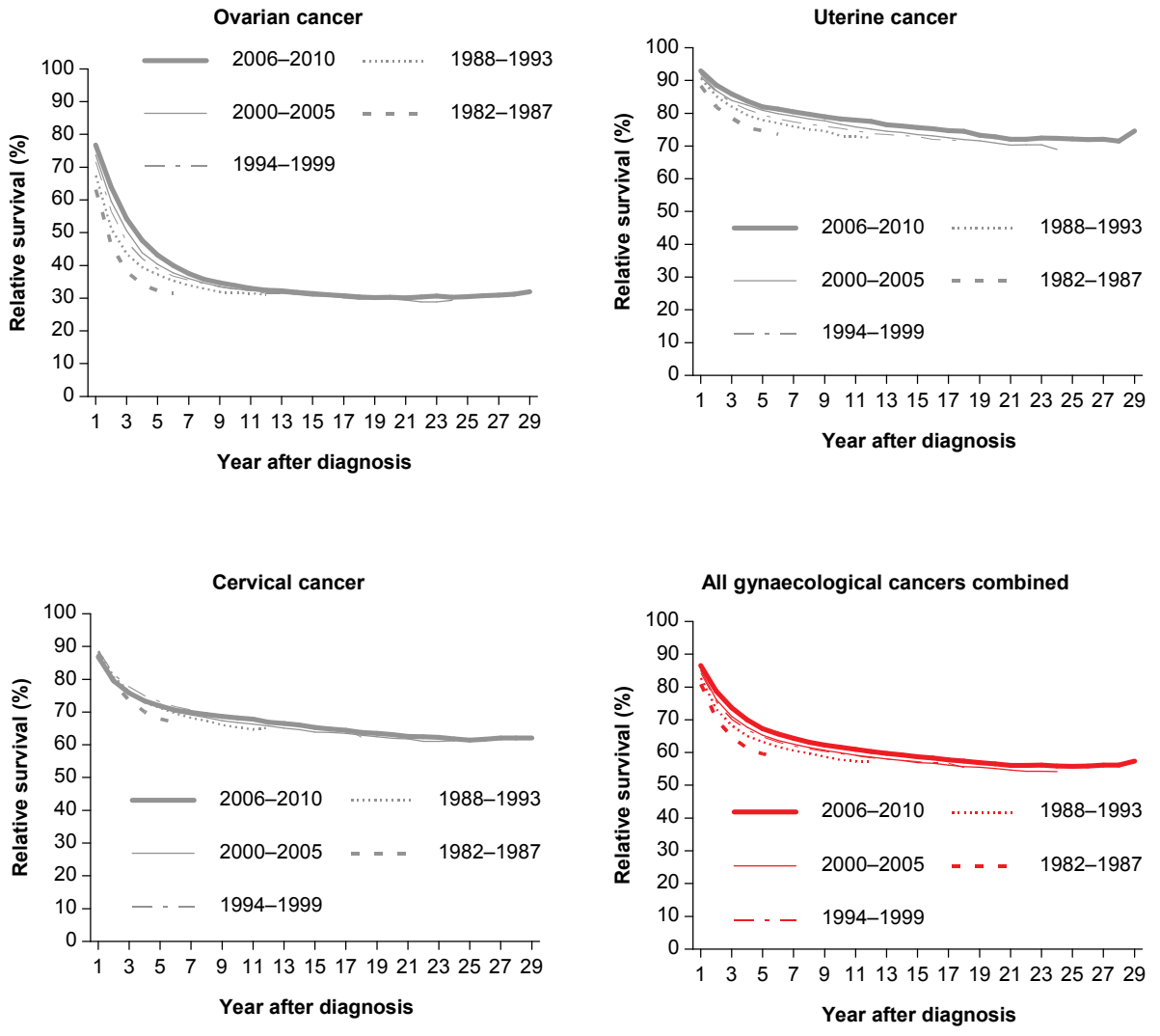


Notes

1. Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.
2. The data for this figure are shown in Appendix Table D8.1.

Source: AIHW Australian Cancer Database 2008.

Figure 8.1: Relative survival for ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by age at diagnosis, Australia, 2006–2010



Notes

1. Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.
2. The data for this figure are shown in Appendix Tables D8.2–D8.5.

Source: AIHW Australian Cancer Database 2008.

Figure 8.2: Relative survival for ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by time period, Australia, 1982–1987 to 2006–2010

Is the change in survival over time evident in all age groups?

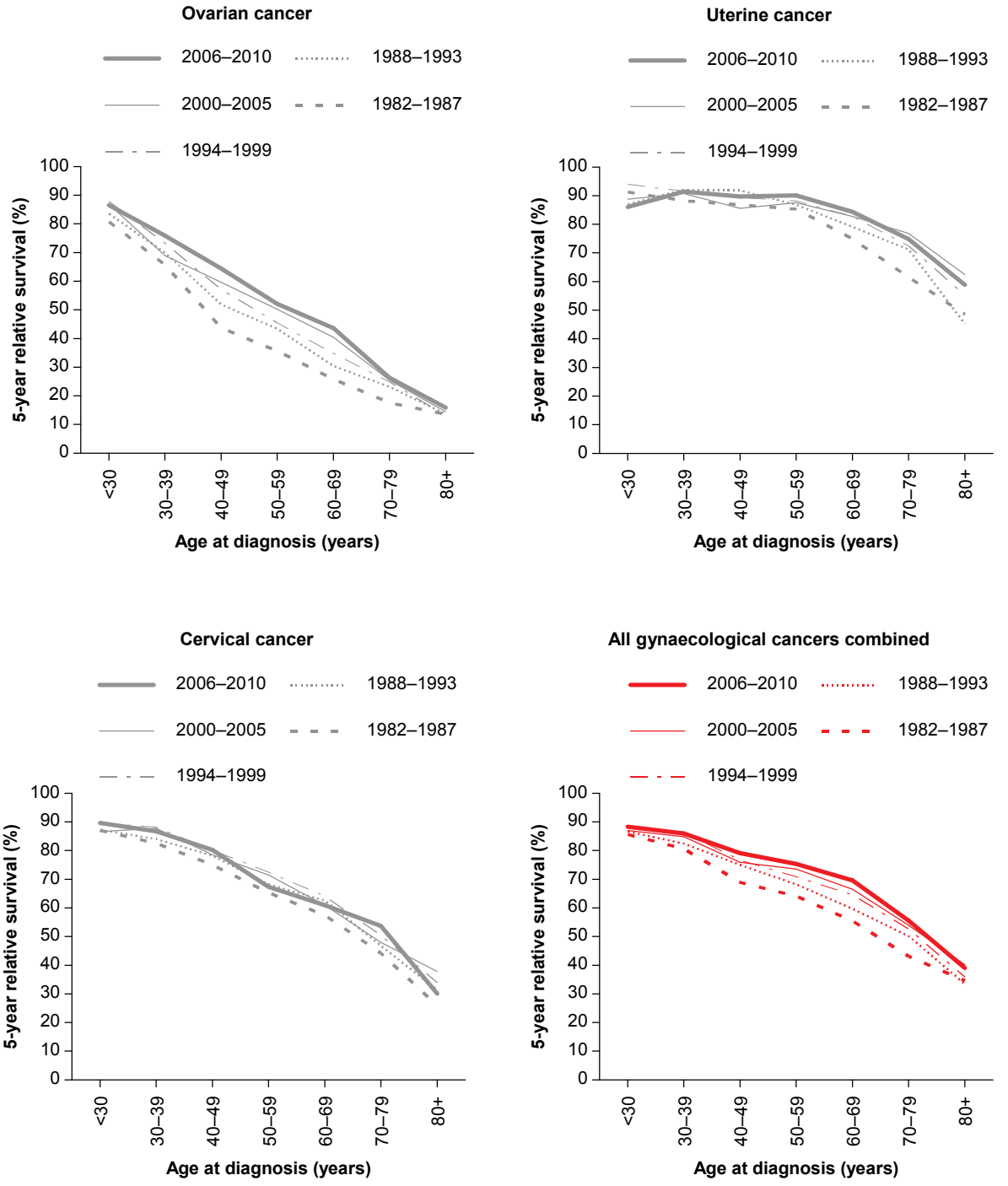
Figure 8.3 shows 5-year relative survival curves by age at diagnosis for the periods 1982–1987 to 2006–2010 for ovarian, uterine and cervical cancer, and all gynaecological cancers combined.

For ovarian cancer, improvements in survival over time were concentrated among females aged 40–49 through to 60–69, with 5-year relative survival increasing significantly between 1982–1987 and 2006–2010 for these age groups. While there were some improvements between the first and the last of the five time periods for other age groups, the differences were not statistically significant.

For uterine cancer, there was a statistically significant improvement in survival between 1982–1987 and 2006–2010 for females aged 50–59 through to 70–79. The 5-year relative survival estimates for the first and last of the five time periods for the age groups under 50 and those aged 80 and over did not differ significantly.

For cervical cancer, there were some improvements over the five time periods for all age groups but the differences were not statistically significant.

For all gynaecological cancers combined, significant improvements in survival over time were observed for females aged 30 to 79 at diagnosis. While there were some improvements between the first and last of the five time periods for those aged less than 30 and those aged 80 and over, the differences were not statistically significant.



Notes

1. Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.
2. The data for this figure are shown in Appendix Table D8.6–D8.9.

Source: AIHW Australian Cancer Database 2008.

Figure 8.3: Five-year relative survival for ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by age at diagnosis, Australia, 1982–1987 to 2006–2010

Does survival from gynaecological cancers differ across population groups?

In this section of the report, differences in 5-year relative survival are discussed in relation to remoteness area and socioeconomic status. The source for this information was *Cancer survival and prevalence in Australia, period estimates from 1982 to 2010* (AIHW 2012c). Differences in 5-year crude survival are also discussed in relation to Aboriginal and Torres Strait Islander status.

Note that the method used to calculate the survival estimates does not include an adjustment for age; thus, differences in survival between groups may be affected by differing age structures.

Does survival differ by remoteness?

Five-year relative survival for ovarian, uterine and cervical cancer, and all gynaecological cancers combined in the period of 2006–2010 were analysed according to level of remoteness of the area in which females lived at diagnosis (Figure 8.4). The Australian Standard Geographical Classification (ABS 2001) was used to categorise areas of Australia. Further information about this classification is provided in Appendix A.

Cancer survival outcomes may vary across regions due to differences in the age at diagnosis, the extent of disease at diagnosis and cancer histology and subtypes associated with different geographical areas.

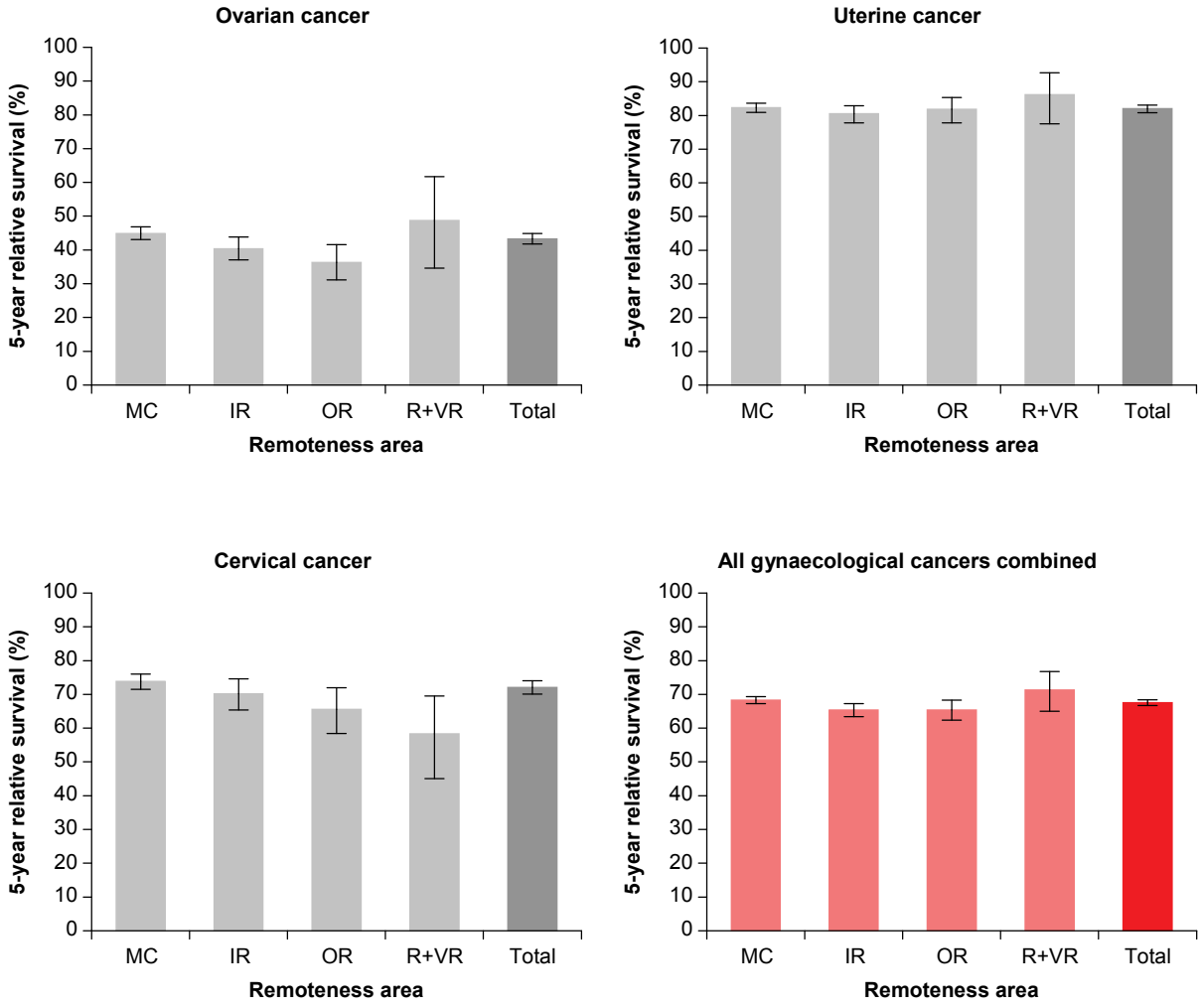
In addition, differences in relative survival across regions might be influenced by the population composition in these regions. For example, Aboriginal and Torres Strait Islander females are more likely than other Australian females to live in *Remote and very remote* areas. Given the higher proportion of Aboriginal and Torres Strait Islander females in more remote areas, relative survival for cancer is more strongly affected by the health status of Aboriginal and Torres Strait Islander females in these areas than in more urban centres.

In 2006–2010, the 5-year relative survival estimate from ovarian cancer for females living in *Outer regional* areas was 36%, which was significantly lower than that for females living in *Major cities* (45%). However, the 5-year ovarian cancer survival estimates for females living in *Inner regional* and *Remote and very remote* areas were not significantly different from those of their city counterparts.

The 5-year relative survival estimates for females diagnosed with uterine cancer did not differ significantly by remoteness.

The 5-year relative survival for cervical cancer tended to decrease with remoteness, and the estimate for females living in *Remote and very remote* areas (58%) was significantly lower than that for their counterparts in *Major cities* (74%).

For all gynaecological cancers combined, the 5-year relative survival estimates did not differ significantly by remoteness.



Notes

1. Remoteness was classified according to the Australian Standard Geographical Classification (ASGC) Remoteness Areas (see Appendix A), showing 'MC' as Major cities, 'IR' as Inner regional, 'OR' as Outer regional, 'R+VR' as Remote and very remote areas.
2. Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.
3. The error bars (symbol) represent 95% confidence intervals.
4. The data for this figure are shown in Appendix Table D8.10.

Source: AIHW Australian Cancer Database 2007.

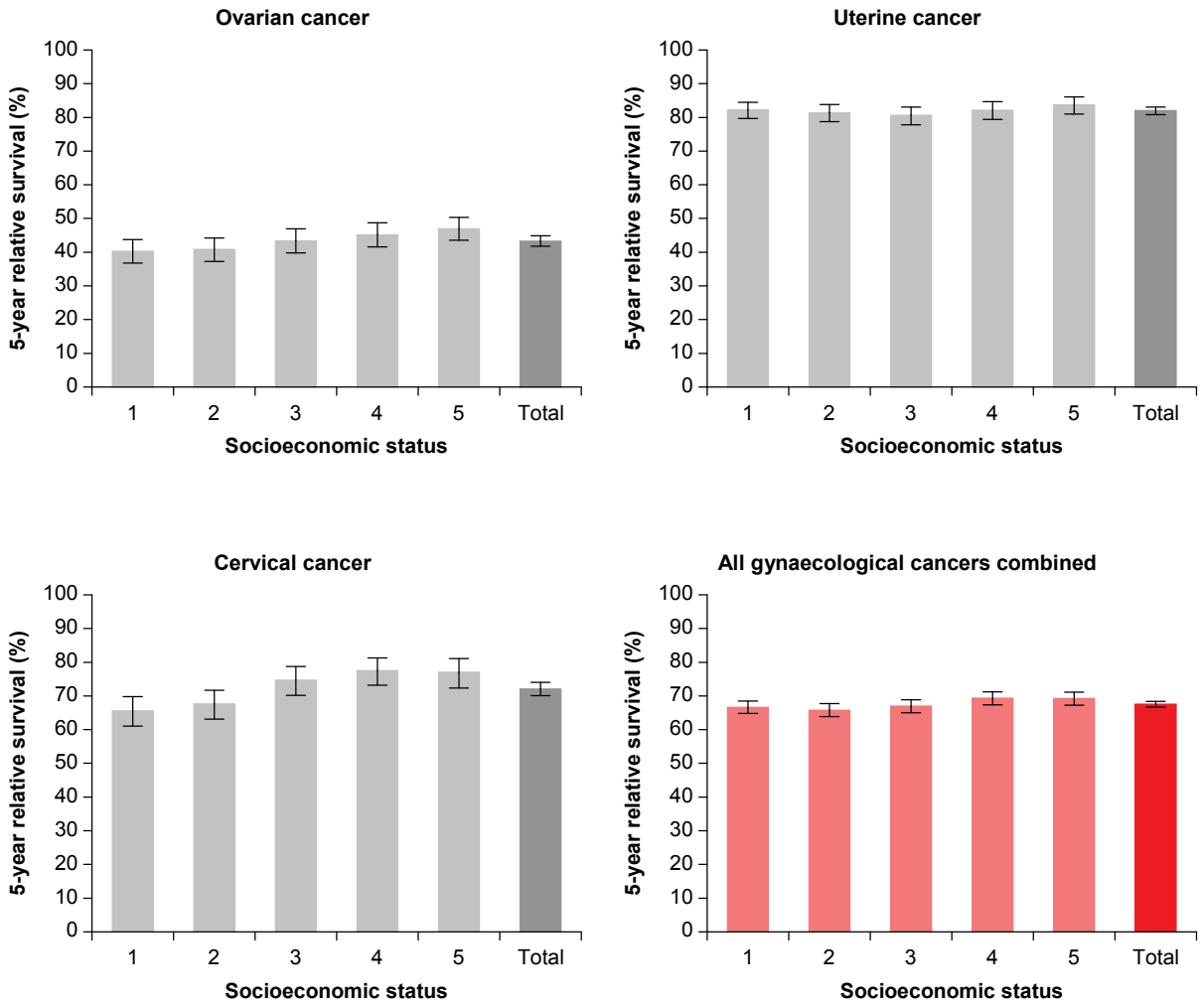
Figure 8.4: Five-year relative survival for ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by remoteness area, Australia, 2006–2010

Does survival differ by socioeconomic status?

Five-year relative survival for selected gynaecological cancers in the period 2006–2010 were analysed according to level of socioeconomic disadvantage of the area in which females lived at diagnosis. The Index of Relative Socio-economic Disadvantage (IRSD) (ABS 2008b) was used to classify areas of Australia. This measure of socioeconomic status pertains to the characteristics of people in the area in which females lived, rather than to the characteristics of the individual. Further information about this classification is provided in Appendix A.

Figure 8.5 shows that in 2006–2010, the 5-year relative survival for ovarian and uterine cancer, and all gynaecological cancers combined did not differ significantly by

socioeconomic status. However, for cervical cancer, the 5-year relative survival estimates in the two highest socioeconomic status groups (group 4 and 5)(78% and 77%, respectively) were significantly higher than those in the two lowest groups (group 1 and 2) (66% and 68%, respectively).



Notes

1. Socioeconomic status was classified using the ABS Index of Relative Socio-economic Disadvantage (see Appendix A), showing '1' as lowest socioeconomic status to '5' as highest socioeconomic status.
2. Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.
3. The error bars (symbol) represent 95% confidence intervals.
4. The data for this figure are shown in Appendix Table D8.11.

Source: AIHW Australian Cancer Database (2007).

Figure 8.5: Five-year relative survival for ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by socioeconomic status, Australia, 2006–2010

Does survival differ by Aboriginal and Torres Strait Islander status?

National, relative survival estimates cannot be calculated for Aboriginal and Torres Strait Islander females, firstly because of the paucity of Indigenous cancer incidence data in some areas. Secondly, Indigenous life tables are currently unavailable, which prevents the

calculation of expected survival for the general Indigenous population (which serves as the denominator for relative survival estimates).

However, 5-year *crude* survival estimates can be derived based on data from New South Wales, Queensland, Western Australia and the Northern Territory. As discussed earlier, crude survival estimates are simply observed survival estimates and are not adjusted for the underlying mortality of the general Indigenous population. Like relative survival, crude survival estimates do not take into account the cause of death. Past research has shown that the life expectancy of Aboriginal and Torres Strait Islander females is shorter than that of non-Indigenous females (ABS 2004, 2009c). At the same time, the mean age at which females were diagnosed with all types of gynaecological cancers differs by Aboriginal and Torres Strait Islander status. Specifically, Aboriginal and Torres Strait Islander females were diagnosed at a younger age than non-Indigenous females for each type of gynaecological cancer as well as for all gynaecological cancers combined (see Chapter 2).

Given the small number of most common types of gynaecological cancer cases reported among Aboriginal and Torres Strait Islander females, an 11-year time period, 2000–2010, is considered in these analyses.

As shown in Table 8.2, the crude 5-year survival estimates for ovarian and uterine cancer, and all gynaecological cancers combined for Aboriginal and Torres Strait Islander females were somewhat lower than those for non-Indigenous females; however, these differences were not statistically significant.

For cervical cancer, the crude 5-year survival estimate for Aboriginal and Torres Strait Islander females was 51%, which was significantly lower than that for non-Indigenous females at 66%.

Table 8.2: Five-year crude survival, by Aboriginal and Torres Strait Islander status, ovarian, uterine and cervical cancer, and all gynaecological cancers combined, New South Wales, Queensland, Western Australia and the Northern Territory, 2000–2010

Indigenous status	Ovarian cancer		Uterine cancer		Cervical cancer		All gynaecological cancers combined	
	CS (%)	95% CI	CS (%)	95% CI	CS (%)	95% CI	CS (%)	95% CI
Indigenous	34.9	26.3–43.7	67.4	60.4–73.4	50.8	44.3–57.0	54.8	50.6–58.8
Non-Indigenous	38.1	37.0–39.2	71.7	70.8–72.6	66.3	64.8–67.6	59.1	58.4–59.7
Not stated[(a)]	84.1	79.2–87.8	95.7	94.2–96.9	98.2	96.7–99.0	93.5	92.1–94.6
Total	**40.1**	**39.0–41.2**	**73.9**	**73.0–74.7**	**68.8**	**67.6–70.1**	**61.2**	**60.6–61.8**

(a) Cancer cases which actually belong to the 'Indigenous' and 'Non-Indigenous' groups were included in the 'Not stated' group as their Indigenous status cannot be identified. Cancer deaths in the 'Not stated' group were often re-allocated to the first two groups after Indigenous status being identified from death certificates. Therefore the survival estimates in this group often artificially overstate, and so should be interpreted with caution.

Note: Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.

Source: AIHW Australian Cancer Database 2008.

How does Australia compare internationally?

In addition to the methodological challenges associated with comparing cancer statistics from different countries (as discussed in Chapter 1), additional uncertainties arise when

comparing relative survival estimates. In particular, there tends to be wide variation across countries in:

- years to which the relative survival estimates apply
- length of the follow-up period considered (for example 1-, 5-, 10-year and so forth)
- methods and age groups used to calculate the relative survival estimates.

For these reasons, relative survival estimates for different countries are not compared in this report.

Although more rudimentary than relative survival estimates, the mortality-to-incidence ratio (MIR) is used in this report to make international comparisons. This ratio describes how many deaths there were in a particular year due to a particular disease, relative to the number of new cases diagnosed that year (using age-standardised data). For example, an MIR of 0.60 for ovarian cancer would indicate that there were 60 deaths for every 100 new cases diagnosed in that year (though the deaths need not relate to the same females as the cases). If survival tends to be lower in a particular country relative to others, then the MIR for that country generally would be expected to be higher (that is, closer to 1.00). In contrast, if survival is higher, the ratio generally would be closer to zero. Appendix B provides further information about interpreting MIRs.

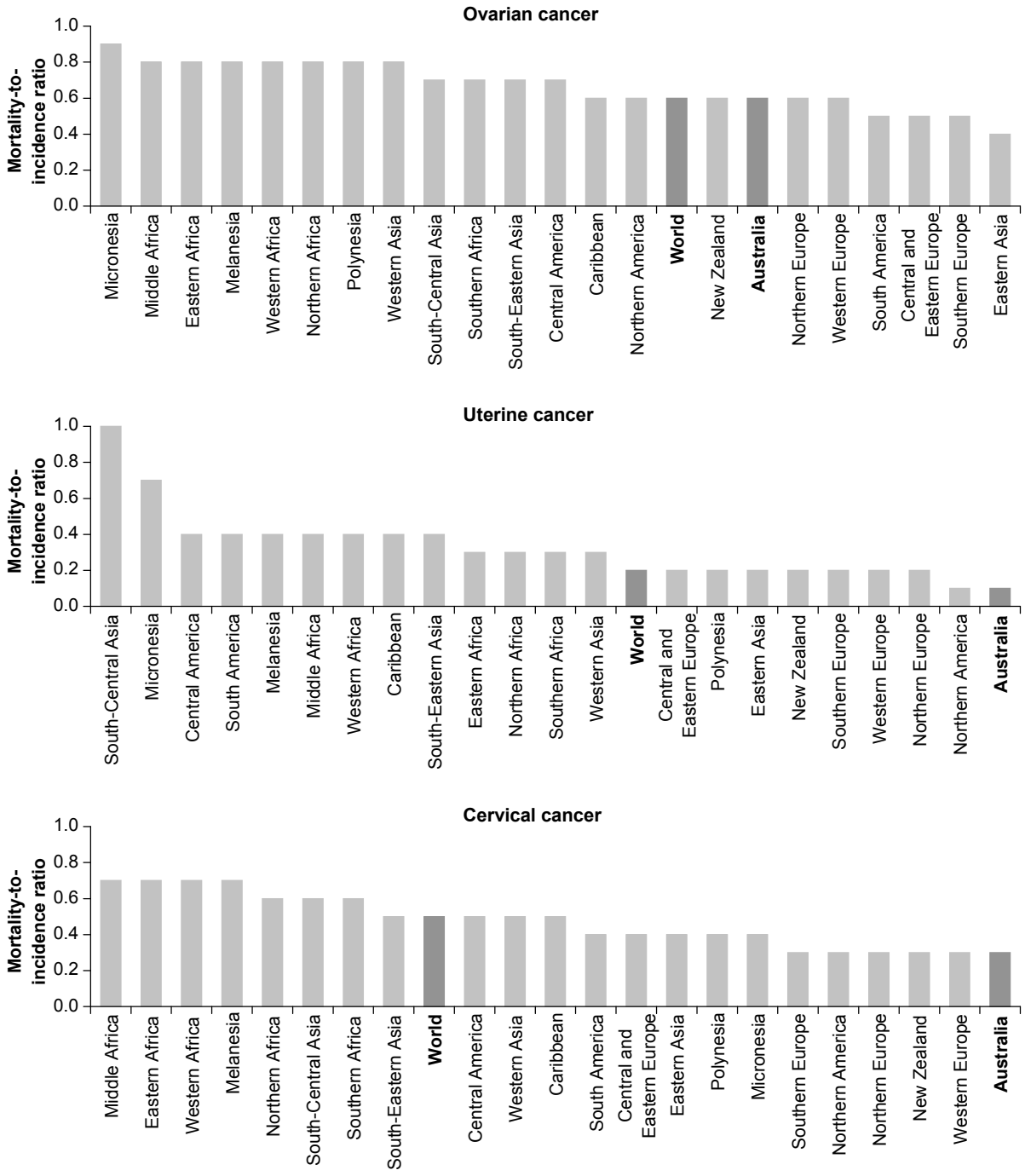
For this report, MIRs for ovarian, uterine and cervical cancer were calculated using data from the GLOBOCAN database (Ferlay et al. 2010a). The fact that the GLOBOCAN data were estimates for 2008 (that is, not observed 2008 data) should be taken into account when interpreting the results in Figure 8.6.

Note that, as mentioned in Chapter 2, the ICD-10 code for uterine cancer in the GLOBOCAN database was C54 only, which was different from that generally considered in this report (C54 and C55).

The GLOBOCAN data suggest that the MIRs for ovarian cancer varied between different countries and regions. Survival was lowest among females in Micronesia (MIR of 0.9), and highest among females in Eastern Asia (MIR of 0.4). The MIR of females in Australia was relatively low at 0.6, which suggests that Australian females who were diagnosed with ovarian cancer had better survival prospects than their counterparts in many other countries and regions.

The MIRs for uterine cancer varied between different countries and regions. The lowest survival was among females in South-Central Asia (MIR of 1.0), compared with the highest survival among females in Australia and Northern America (MIRs of 0.1). The MIRs suggest that Australian females who were diagnosed with uterine cancer had better survival prospects than their counterparts in many other countries and regions.

Similarly, the MIRs for cervical cancer varied between different countries and regions. The lowest survival was among females in Middle Africa, Eastern Africa, Western Africa, and Melanesia (MIRs of 0.7), and highest among females in Australia, Western Europe, New Zealand, Northern Europe, Northern America and Southern Europe (MIRs of 0.3). The MIRs suggest Australia females who were diagnosed with cervical cancer had better survival prospects than their counterparts in many other countries and regions.



Notes

1. The ratios were based on estimates for 2008 and are based on data from about 3 to 5 years earlier. The rates were age-standardised by the IARC using the Doll et al. (1966) World Standard Population. The mortality-to-incidence ratio equals the age-standardised mortality rate divided by the age-standardised incidence rate.

2. The data for this figure are in Appendix Table D8.12.

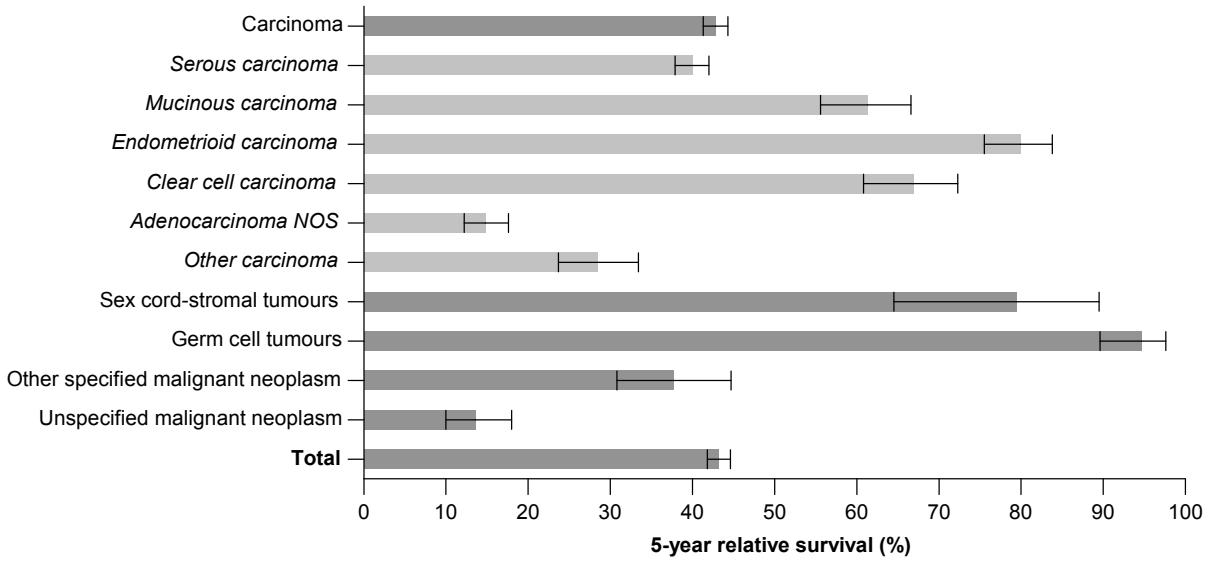
Source: Ferlay et al. 2010a.

Figure 8.6: International comparison of mortality-to-incidence ratios for ovarian, uterine and cervical cancer, 2008

Does survival differ by histological type of gynaecological cancer?

In this section, 5-year relative survival estimates by histological type are presented for ovarian, uterine and cervical cancer for the period 2006–2010. Data for vulval and vaginal cancer can be found in Appendix Tables D8.16 and D8.17. See also Appendix Tables D8.13–D8.15 where 5-year relative survival for ovarian, uterine and cervical cancer in 2006–2010 is shown by age group for each of the histological types.

Figure 8.7 shows 5-year relative survival for ovarian cancer by histological type in 2006–2010. Females diagnosed with *Germ cell tumours* had the highest 5-year relative survival (95%), which was significantly higher than those with other histological types of ovarian cancer. Females diagnosed with *Unspecified malignant neoplasm* had the lowest 5-year relative survival (14%), with this estimate significantly lower than those from other major histological groups. It has been suggested that females diagnosed with ovarian cancers whose type is not specified have poor survival prospects because they usually present with advanced disease or other factors that make them unsuitable for surgical treatment (Cancer Council Victoria 2007). The 5-year relative survival for females diagnosed with *Carcinoma* was 43%. Within the group of *Carcinoma*, 5-year relative survival ranged from 80% for *Endometrioid carcinoma* to 15% for *Adenocarcinoma not otherwise specified*.



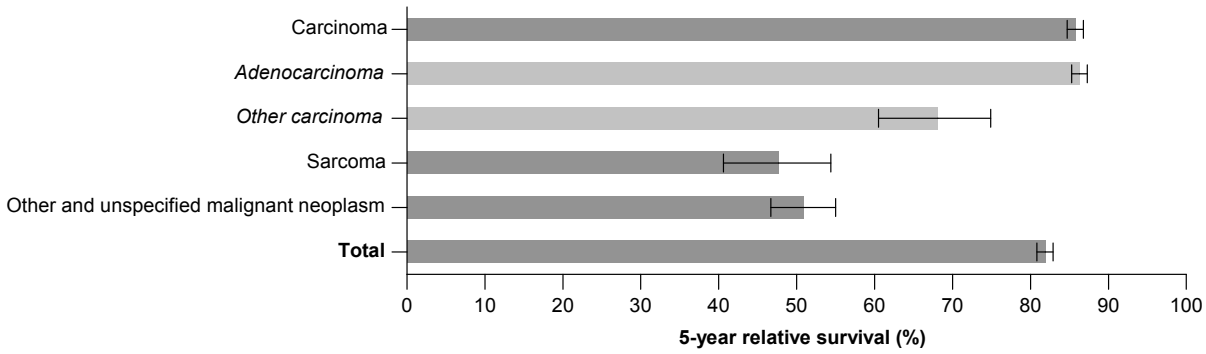
Notes

1. All cases were coded as primary site, invasive ovarian cancers.
2. Appendix Table D2.14 provides a list of the histological types included in each group.
3. Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.
4. The error bars (symbol) represent 95% confidence intervals.
5. The data for this figure are in Table 8.3.

Source: AIHW Australian Cancer Database 2008.

Figure 8.7: Five-year relative survival by type of ovarian cancer, Australia, 2006–2010

Figure 8.8 shows 5-year relative survival for uterine cancer by histological type in 2006–2010. Females diagnosed with *Adenocarcinoma* (the most common type of uterine cancer) had the highest 5-year relative survival (86%), with this estimate significantly higher than those from other histological groups. The 5-year relative survival was relatively low for females diagnosed with *Sarcoma* and *Other and unspecified malignant neoplasm*—48% and 51%, respectively.



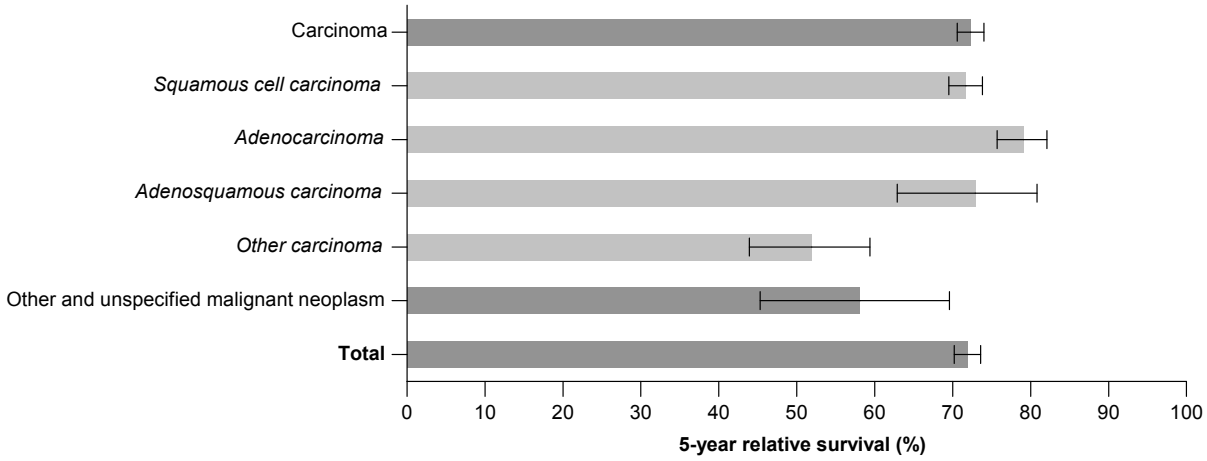
Notes

1. All cases were coded as primary site, invasive uterine cancers.
2. Appendix Table D2.15 provides a list of the histological types included in each group.
3. Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.
4. The error bars (symbol) represent 95% confidence intervals.
5. The data for this figure are in Table 8.4.

Source: AIHW Australian Cancer Database 2008.

Figure 8.8: Five-year relative survival by type of uterine cancer, Australia, 2006–2010

Figure 8.9 shows 5-year relative survival for cervical cancer by histological type in 2006–2010. Note that an estimate for females diagnosed with *Sarcoma* is not presented due to the small number of females with cervical cancers of this histological group. Five-year relative survival for females diagnosed with *Carcinoma* (the most commonly diagnosed type of cervical cancer) was 72%, with this estimate significantly higher than that for females diagnosed with *Other and unspecified malignant neoplasm* (58%). Within the group of *Carcinoma*, 5-year relative survival for *Squamous cell carcinoma* (72%) was significantly lower than that for *Adenocarcinoma* (79%).



Notes

1. All cases were coded as primary site, invasive cervical cancers.
2. Appendix Table D2.16 provides a list of the histological types included in each group.
3. Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.
4. The error bars (symbol) represent 95% confidence intervals.
5. The data for this figure are in Table 8.5.

Source: AIHW Australian Cancer Database 2008.

Figure 8.9: Five-year relative survival by type of cervical cancer, Australia, 2006–2010

How has survival for the most common histological types of gynaecological cancers changed over time?

Table 8.3 shows 5-year relative survival for ovarian cancer by histological type for the five periods from 1982–1987 to 2006–2010. Between the first and last period, there was a significant improvement in survival estimates for *Carcinoma*—from 31% to 43%. Within the group of ovarian *Carcinoma*, between the first and last period, a significant improvement in 5-year relative survival was found for *Serous carcinoma* (from 29% to 40%), *Endometrioid carcinoma* (from 45% to 80%), and *Clear cell carcinoma* (from 44% to 67%), whereas the survival for *Mucinous carcinoma, Adenocarcinoma not otherwise specified* and O*ther carcinoma* did not change significantly over the five time periods.

The five-year relative survival estimate for *Germ cell tumours* increased significantly from 81% in 1982–1987 to 95% in 2006–2010. The survival from *Sex cord-stromal tumours* had a significant improvement between 1982–1987 (52%) and 1988–1993 (78%), while it did not change significantly in the time periods thereafter. The survival estimates from *Other specified malignant neoplasm* and *unspecified malignant neoplasm* did not change significantly between any of the time periods.

Table 8.4 shows 5-year relative survival for uterine cancer by histological type for the five periods from 1982–1987 to 2006–2010. Between the first and last period, there was a significant improvement in survival estimates for *Carcinoma* – from 78% to 86%. Within the group of *Carcinoma*, 5-year relative survival for *Adenocarcinoma* increased significantly from 79% in 1982–1987 to 86% in 2006–2010, while the survival from *Other carcinoma* did not change significantly over time. For uterine *Sarcoma* and *Other and unspecified malignant*

neoplasm, there was no statistically significant change in 5-year relative survival over the five time periods.

Table 8.5 shows 5-year relative survival for cervical cancer by histological type for the five periods from 1982–1987 to 2006–2010. Between the first and last period there was a small but significant improvement in survival estimates for *Carcinoma*—from 68% to 72%. Within the group of *Carcinoma*, 5-year relative survival for *Adenocarcinoma* increased significantly from 67% in 1982–1987 to 79% in 2006–2010, while the survival from *Squamous cell carcinoma* and *Adenosquamous carcinoma* did not change significantly over time and the survival from *Other Carcinoma* decreased significantly from 70% in 1982–1987 to 52% in 2006–2010. The survival from *Other and unspecified malignant neoplasm* did not change significantly over the five time periods.

Table 8.3: Five-year relative survival by type of ovarian cancer, Australia, 1982–1987 to 2006–2010

	1982–1987		1988–1993		1994–1999		2000–2005		2006–2010	
Type of ovarian cancer	**RS (%)**	**95% CI**	**RS (%)**	**95% CI**	**RS (%)**	**95% CI**	**RS (%)**	**95% CI**	**RS (%)**	**95% CI**
Carcinoma	31.2	29.3–33.1	35.5	34.1–37.0	38.1	36.8–39.5	39.8	38.5–41.1	42.8	41.3–44.3
Serous carcinoma	28.6	24.7–32.6	34.1	31.8–36.5	35.4	33.4–37.5	36.9	35.1–38.8	40.0	37.9–42.0
Mucinous carcinoma	52.1	46.3–57.6	53.8	49.6–57.8	59.3	55.1–63.3	59.7	55.1–64.0	61.3	55.6–66.6
Endometrioid carcinoma	44.6	38.6–50.6	56.1	51.2–60.7	67.8	63.3–71.9	77.3	73.2–81.0	79.9	75.5–83.8
Clear cell carcinoma	43.5	34.0–52.7	51.5	44.9–57.8	59.2	53.3–64.8	64.6	59.0–69.7	66.9	60.8–72.3
Adenocarcinoma not otherwise specified	18.5	15.8–21.3	16.7	14.6–19.0	14.7	12.7–16.9	15.6	13.4–18.0	14.8	12.2–17.6
Other carcinoma	27.4	22.8–32.2	25.5	21.6–29.7	22.2	18.5–26.2	21.1	17.6–24.8	28.4	23.7–33.4
Sex cord-stromal tumours	52.0	35.0–67.1	78.4	67.3–86.9	89.5	78.5–96.5	83.2	70.4–91.8	79.5	64.5–89.5
Germ cell tumours	80.5	72.0–86.7	86.9	80.7–91.4	89.3	83.6–93.2	93.5	88.8–96.4	94.7	89.6–97.6
Other specified malignant neoplasm	n.p.	n.p.	29.9	22.6–37.7	29.2	23.2–35.5	33.8	27.6–40.1	37.7	30.8–44.7
Unspecified malignant neoplasm	n.p.	n.p.	17.2	12.1–23.1	12.0	8.3–16.5	14.0	10.6–17.9	13.6	10.0–18.0
Total	**32.3**	**30.6–34.1**	**37.2**	**35.9–38.6**	**39.0**	**37.7–40.3**	**40.3**	**39.1–41.6**	**43.2**	**41.8–44.6**

n.p. Not published (due to small number of cases)

Notes

1. All cases were coded as primary site, invasive ovarian cancer. Appendix Table D2.14 provides a list of the histological types included in each group.
2. Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.

Source: AIHW Australian Cancer Database 2008.

Table 8.4: Five-year relative survival by type of uterine cancer, Australia, 1982–1987 to 2006–2010

	1982–1987		1988–1993		1994–1999		2000–2005		2006–2010	
Type of uterine cancer	**RS (%)**	**95% CI**	**RS (%)**	**95% CI**	**RS (%)**	**95% CI**	**RS (%)**	**95% CI**	**RS (%)**	**95% CI**
Carcinoma	78.3	76.4–80.1	81.4	80.1–82.6	82.9	81.8–84.0	85.0	84.0–86.0	85.8	84.7–86.8
Adenocarcinoma	79.3	77.4–81.1	82.1	80.8–83.3	83.7	82.5–84.8	86.1	85.0–87.0	86.3	85.3–87.3
Other carcinoma	61.8	53.1–69.8	62.5	55.0–69.5	57.2	49.1–64.8	57.7	51.1–64.0	68.1	60.5–74.9
Sarcoma	40.6	32.1–49.1	51.0	43.7–58.0	46.6	39.6–53.3	46.1	40.2–51.8	47.7	40.6–54.4
Other and unspecified malignant neoplasm	44.6	37.2–51.9	49.2	44.1–54.1	52.3	47.7–56.7	51.1	47.2–54.9	50.9	46.7–55.0
Total	**74.7**	**72.9–76.4**	**78.0**	**76.8–79.2**	**79.6**	**78.5–80.7**	**80.9**	**79.9–81.8**	**81.9**	**80.8–82.9**

Notes

1. All cases were coded as primary site, invasive uterine cancer. Appendix Table D2.15 provides a list of the histological types included in each group.
2. Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.

Source: AIHW Australian Cancer Database 2008.

Table 8.5: Five-year relative survival by type of cervical cancer, Australia, 1982–1987 to 2006–2010

	1982–1987		1988–1993		1994–1999		2000–2005		2006–2010	
Type of cervical cancer	**RS (%)**	**95% CI**	**RS (%)**	**95% CI**	**RS (%)**	**95% CI**	**RS (%)**	**95% CI**	**RS (%)**	**95% CI**
Carcinoma	68.0	66.2–69.7	71.5	70.3–72.7	73.6	72.3–74.8	71.8	70.3–73.2	72.3	70.6–74.0
Squamous cell carcinoma	67.9	65.9–69.8	71.6	70.1–72.9	73.4	71.9–74.9	72.1	70.4–73.7	71.7	69.5–73.8
Adenocarcinoma	67.1	61.4–72.4	73.5	70.3–76.4	78.2	75.4–80.7	76.0	72.8–78.8	79.1	75.7–82.1
Adenosquamous carcinoma	69.3	60.4–76.7	68.8	62.8–74.1	64.2	58.0–69.8	61.4	53.6–68.4	72.9	62.9–80.8
Other carcinoma	69.9	63.0–75.9	67.6	61.9–72.7	67.0	61.0–72.4	58.8	51.5–65.5	51.9	43.9–59.4
Sarcoma	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Other and unspecified malignant neoplasm	69.7	59.0–78.4	58.3	46.7–68.7	47.9	35.4–59.8	58.2	46.6–68.5	58.1	45.3–69.6
Total	**68.0**	**66.3–69.7**	**71.3**	**70.1–72.5**	**73.2**	**71.9–74.4**	**71.4**	**70.0–72.8**	**71.9**	**70.2–73.6**

n.p. Not published (due to small number of cases)

Notes

1. All cases were coded as primary site, invasive cervical cancer. Appendix Table D2.16 provides a list of the histological types included in each group.
2. Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.

Source: AIHW Australian Cancer Database 2008.

Does survival differ by stage?

Research has shown that stage at diagnosis of gynaecological cancers is closely related to survival prospects, with advanced stage associated with poorer survival (Tracey et al. 2009b; Yang et al. 2008). Since national data are not available on stage at diagnosis in Australia, national relative survival estimates for gynaecological cancers by stage at diagnosis cannot be calculated. However, to illustrate the trends, data from the United States of America (USA) based on the SEER summary stage system are shown. Additional information about the SEER summary system is in Box 8.4.

Table 8.6 shows that the 5-year relative survival estimates for Australia and the USA were similar for the three types of gynaecological cancer for which data were available. Further, there was a clear gradient in the survival estimates in the USA data according to stage at diagnosis. For example, for ovarian cancer, the 5-year relative survival was 93% for females diagnosed with localised cancer but only 27% for those diagnosed with distant cancer. There was a similar drop in survival estimates by stage at diagnosis for uterine cancer and cervical cancer.

Table 8.6: Five-year relative survival for ovarian, uterine and cervical cancer, by stage at diagnosis, Australia, 2006–2010 and the United States of America, 2001–2007

	Australia	United States of America				
Cancer site/type	Total	Total	Localised	Regional	Distant	Unknown
Ovarian cancer	42.8	43.8	92.5	72.0	26.9	22.4
Uterine cancer	81.7	81.8	95.8	67.0	15.9	50.1
Cervical cancer	71.7	68.6	90.9	56.9	16.5	53.7

Note: Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.

Source: AIHW Australian Cancer Database 2008;

Box 8.4: Summary staging system—extent of disease at diagnosis

In the SEER Summary Stage system, tumours are allocated to one of three categories, as well as an 'unknown' category (Young et al. 2001):

Local: the tumour is confined to the organ of origin.

Regional: the tumour has spread to surrounding tissue or nearby lymph nodes.

Distant: the tumour has spread to distant organs and has begun to grow at the new location.

Unknown: there is not sufficient evidence available to adequately assign a stage.

9 Mortality from gynaecological cancers

Key findings

In 2007 in Australia:

- 1,502 females died from a gynaecological cancer.
- Ovarian cancer was the most common cause of gynaecological cancer death (848 deaths), followed by uterine cancer (338) and cervical cancer (208).
- Ovarian cancer ranked seventh, uterine cancer fourteenth and cervical cancer eighteenth in terms of all causes of cancer death among females.
- 77% of deaths due to ovarian cancer, 84% of deaths due to uterine cancer and 57% of deaths due to cervical cancer occurred among females aged 60 and over.
- The risk of a female in the general population dying from ovarian cancer before the age of 85 was 1 in 106. The corresponding risk for uterine cancer was 1 in 275, for cervical cancer it was 1 in 502 and for all gynaecological cancers combined it was 1 in 63.

Between 1982 and 2007:

- The mortality rates for ovarian cancer fell by 21% (from 8.8 to 7.0 per 100,000).
- The mortality rate for uterine cancer was relatively stable, ranging between 2.5 and 3.9 deaths per 100,000.
- The mortality rate for cervical cancer fell by 62% between 1982 (5.2 per 100,000) and 2002 (2.0 per 100,000), after which it was relatively stable.

In the 5 years from 2003 to 2007:

- The age-standardised mortality rates for ovarian, uterine and cervical cancer varied by state and territory.
- There was no statistically significant association between the mortality rate for ovarian cancer and remoteness area. However, both the uterine cancer and cervical cancer mortality rates tended to rise with remoteness.
- There were no statistical significant differences between ovarian and uterine cancer mortality rates and socioeconomic status. However, for cervical cancer, the mortality rate tended to fall with improving socioeconomic status.
- The mortality rate for ovarian cancer did not vary significantly by Aboriginal and Torres Strait Islander status. For uterine and cervical cancer, the mortality rates were significantly higher for Aboriginal and Torres Strait Islander females (6.6 and 9.0 per 100,000, respectively) than for non-Indigenous females (2.8 and 1.9 per 100,000, respectively).

About mortality from gynaecological cancers

The number of deaths from gynaecological cancers in a given period is a result of the incidence of gynaecological cancers, as well as factors that affect the likelihood of death from the disease such as the characteristics of the cancer diagnosed (for example, the cancer histological type and stage at diagnosis), and the nature and quality of treatments received.

The gynaecological cancer that led to the death of the person may have been diagnosed many years previously, in the same year in which the person died or, in some cases, after death (for example, at autopsy). Information on the underlying cause of death is derived from the medical certificate of cause of death, which is issued by a certified medical practitioner.

The main data source used in this chapter was the National Mortality Database (NMD) (see Appendix C for further information).

Analyses are based on the year of death, except for 2007 (the latest year for which mortality data are available), which is based on the year of registration of death. Note that about 5% of deaths are not registered until the year following the death (ABS 2007).

The most recent mortality data for Australia are readily available in tabulated format (ABS 2011). However, unit-record-level data which contain information about each individual death are required for mortality analyses. Due to changes in the process for releasing unit-record mortality data to users (including the AIHW), the most recent unit-record-level data available at the time of writing were for deaths reported in 2007.

In this chapter, information on the number of deaths attributed to gynaecological cancer from 1982 to 2007 is presented. In addition, differences in mortality rates according to age, sex, state and territory, remoteness area, socioeconomic status, Aboriginal and Torres Strait Islander status and country of birth are provided. The mortality rates for Australia are also compared with those of other countries and regions.

Detailed information is presented for ovarian, uterine and cervical cancer. Due to small number of deaths from vaginal cancer, vulval cancer and cancer of other female genital organs and placenta, limited data are presented for these cancers.

How many females died from a gynaecological cancer in 2007?

In 2007, a total of 1,502 females died from a gynaecological cancer in Australia (Table 9.1). This means that, on average, four females in Australia died from a gynaecological cancer every day. Furthermore, gynaecological cancer accounted for 2% of all deaths in females in 2007 and 9% of all cancer deaths.

Ovarian cancer was the most common cause of gynaecological cancer death in 2007, representing over half of such deaths (848 deaths and 57% of all gynaecological cancer deaths). Uterine cancer (338 deaths) was the second most common cause of gynaecological cancer death, followed by cervical cancer (208), vulval cancer (65), vaginal cancer (26) and cancers of other female organs and placenta (17).

In terms of all causes of cancer death among females in 2007, ovarian cancer ranked seventh, uterine cancer ranked fourteenth, cervical cancer ranked eighteenth, vaginal cancer ranked twenty-fifth and vulval cancer ranked thirty-sixth.

The age-standardised mortality rate for all gynaecological cancers combined in 2007 was 12.2 per 100,000 females, with the corresponding rates being 7.0 per 100,000 for ovarian cancer, 2.7 per 100,000 for uterine cancer and 1.8 per 100,000 for cervical cancer. For vaginal and vulval cancer the age-standardised mortality rate was less than 1 per 100,000.

Table 9.1: The most common causes of death from cancer, including gynaecological cancer deaths, females, Australia, 2007

Site	No. of deaths	Percentage of all gynaecological cancer deaths	Percentage of all cancer deaths in females	ASR[a]	CI (95%)
Lung (C33–C34)	2,911	. .	16.8	24.0	23.1–24.9
Breast (C50)	2,680	. .	15.5	22.1	21.2–22.9
Bowel (C18–C20)	1,856	. .	10.7	14.6	13.9–15.3
All gynaecological cancers combined (C51–C58)	**1,502**	**100.0**	**8.7**	**12.2**	**11.6–12.9**
Ovary (C56)	*848*	*56.5*	*4.9*	*7.0*	*6.5–7.5*
Uterus(C54–C55)	*338*	*22.5*	*2.0*	*2.7*	*2.4–3.0*
Cervix (C53)	*208*	*13.8*	*1.2*	*1.8*	*1.5–2.0*
Vulva (C51)	*65*	*4.3*	*0.4*	*0.5*	*0.4–0.6*
Vagina (C52)	*26*	*1.7*	*0.2*	*0.2*	*0.1–0.3*
Other female genital organs & placenta (C57–C58)	*17*	*1.1*	*0.1*	*0.1*	*0.1–0.2*
Lymphoid cancers (C81–C85, C88, C90, C91)[b]	1,129	. .	6.5	8.8	8.3–9.3
Unknown primary (C77–C80)	1,097	. .	6.3	8.5	8.0–9.1
All cancers[c]	**17,322**	**. .**	**100.0**	**139.1**	**137.0–141.2**

. . Not applicable

(a) Rates were age-standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.

(b) Lymphoid cancers are cancers that start in lymphocytes of the immune system. The most common types are lymphomas, lymphoid leukaemias and myeloma.

(c) Includes cancers coded in ICD-10 as C00–C97, D45, D46, D47.1 and D47.3.

Source: AIHW National Mortality Database.

What is the average age at death?

In 2008, the average age at death varied for the different types of gynaecological cancer (Table 9.2). The average age at death was lowest for cervical cancer (63 years) and highest for vulval cancer (81 years). For all gynaecological cancers combined, the average age at death was 70 years.

Table 9.2: Average and median age at death for selected gynaecological cancers, Australia, 2007

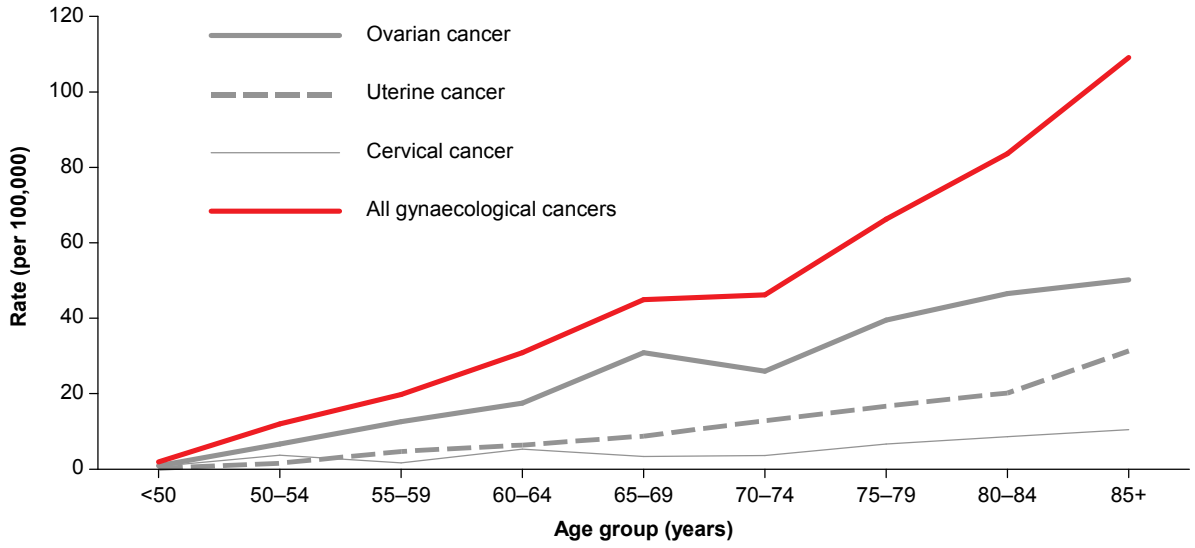
Type of cancer	Mean age at death	Median age at death
Ovarian cancer	69.4	70
Uterine cancer	73.3	75
Cervical cancer	62.6	63
Vaginal cancer	71.4	73
Vulval cancer	81.4	84
All gynaecological cancers combined	**70.0**	**71**

Source: AIHW National Mortality Database.

Does mortality differ by age?

In 2007, 77% of deaths due to ovarian cancer, 84% of deaths due to uterine cancer and 57% of deaths due to cervical cancer occurred among females aged 60 and over. The corresponding figure for all gynaecological cancers combined was 77% (see Appendix Table D9.1).

Figure 9.1 shows that the mortality rates for ovarian, uterine and cervical cancer, and all gynaecological cancers combined increased between most age groups (although the difference from one age group to the next was not always statistically significant). For these cancers, the highest mortality rate was for those aged 85 and over, at 50.2 per 100,000 for ovarian cancer, 31.4 for uterine cancer, 10.5 for cervical cancer and 109.1 for all gynaecological cancers combined.



Notes

1. The rates shown are age-specific rates.
2. The data for this figure are shown in Appendix Table D9.1.

Source: AIHW National Mortality Database.

Figure 9.1: Mortality from ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by age at death, 2007

Have mortality rates changed over time?

Long-term mortality trends

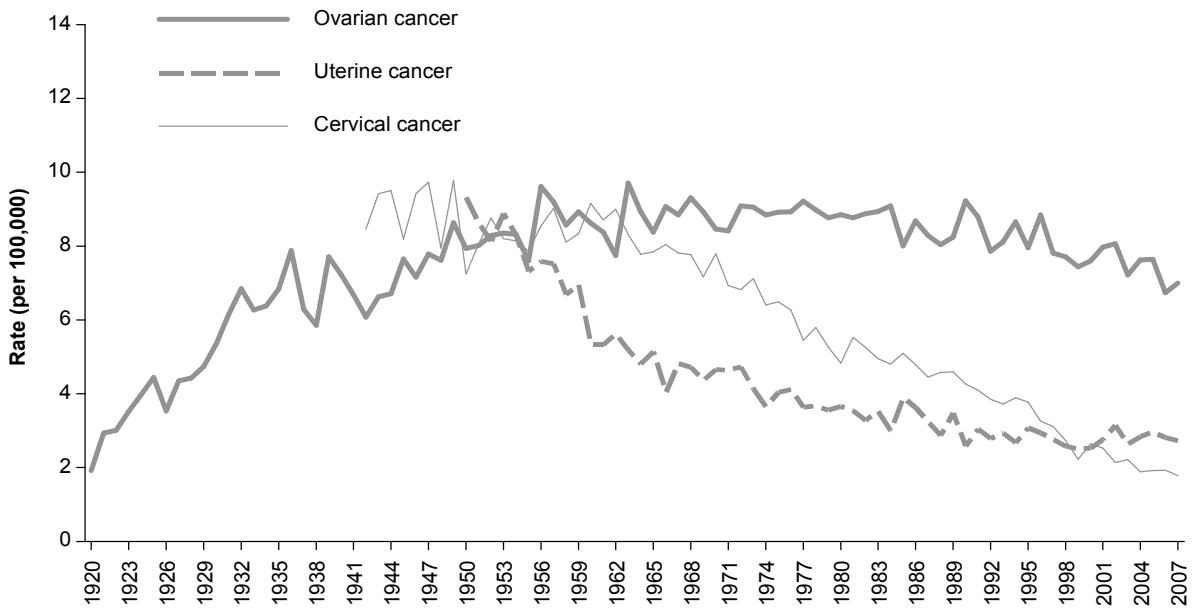
In Figure 9.2, long-term age-standardised mortality rates due to ovarian, uterine and cervical cancer are shown according to year of *registration* of death, with the data sourced from the General Record of Incidence of Mortality (GRIM) Books. While mortality data according to year of death are generally shown in this chapter, year of registration data are shown here because such long-term trend data are not available for cancer mortality by year of death. As a result, the data in this figure are slightly different from the mortality data presented elsewhere in this report, but the overall trends are the same.

Note that in this section, ovarian cancer is defined to include the ICD-10 codes of 'C56 and C57.0–C57.4'.

Numerous year-to-year fluctuations in the mortality rates are seen in the data for all three types of gynaecological cancer. Nonetheless, the mortality rates for ovarian cancer rose steadily until the early 1960s. After this time, the rates remained relatively stable until the 1980s when the rates began to level off.

The mortality rates for uterine cancer fell sharply between 1950 and 1990, after which the rates became relatively stable.

For cervical cancer, the mortality rates were relatively stable until the 1960s. This was followed by a sharp decline in rates until the early 2000s when the rates became fairly stable.



Notes

1. The rates were age-standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.
2. The data for this figure are based on year of registration of death rather than year of death. Independent data for cervical and uterine cancers were not available before 1950.
3. Ovarian cancer includes the ICD-10 codes of 'C56 and C57.0–C57.4', while uterine cancer includes the codes of C54–C55, and cervical cancer the code of C53.
4. The data for this figure are shown in Appendix Table D9.2.

Source: AIHW unpublished data.

Figure 9.2: Mortality from ovarian, uterine and cervical cancers, by year of death registration, Australia, 1920 to 2007

Recent trends in mortality rates, 1982 to 2007

Information on mortality of females from ovarian, uterine and cervical cancer, and all gynaecological cancers combined for the 26-year period from 1982 to 2007 are in Figure 9.3.

Between 1982 and 2007, the number of deaths from ovarian cancer rose by 45% (from 587 to 848 deaths). When changes in age structure and the size of the population are taken into account, the trend data indicate that the age-standardised mortality rate for ovarian cancer fell by 21% over the same period (from 8.8 to 7.0 per 100,000).

The number of deaths from uterine cancer also rose over time. In 1982, 222 females died from uterine cancer compared with 338 in 2007, indicating an overall increase of 52%. In contrast,

the age-standardised mortality rate for uterine cancer was relatively stable from 1982 to 2007, ranging between 2.5 and 3.9 deaths per 100,000.

The number of cervical cancer deaths declined by 40% over the 26-year period from 1982 (346 deaths) to 2007 (208 deaths). Meanwhile, the age-standardised mortality rate for cervical cancer fell by 62% between 1982 (5.2 per 100,000) and 2002 (2.0), after which the rate has been relatively stable.

Between 1982 and 2007, the number of deaths from all gynaecological cancers combined rose by 22% (from 1,235 to 1,502 deaths), while the age-standardised mortality rate fell steadily by 34% (from 18.5 to 12.2 per 100,000).

Box 9.1: Explaining trends in mortality rates

Possible explanations for the decline in the mortality rate for ovarian cancer over the past two decades include: a fall in the incidence rate in the past decade (as discussed in Chapter 2), improvements in access to and quality of treatments (Kjærbye-Thygesen et al. 2005; Oriel et al. 1999; Tracey et al. 2009b) and change over time in the histological types and stage distribution of ovarian cancers occurring among women (as discussed in Chapter 2, the prognosis is better for some types of ovarian cancers than others).

The pronounced decrease in the mortality rates for cervical cancer since the 1960s is due, at least in part, to prevention and early detection of pre-cancerous lesions as well as cervical cancer through screening programs. Opportunistic cervical cancer screening has occurred in Australia since the 1960s, with the National Cervical Screening Program introduced in 1991 (AIHW 2012b). The declines in mortality could reflect a number of influences, including changes in hysterectomy rate and use of combined oral contraceptives (Mant & Vessey 1994).

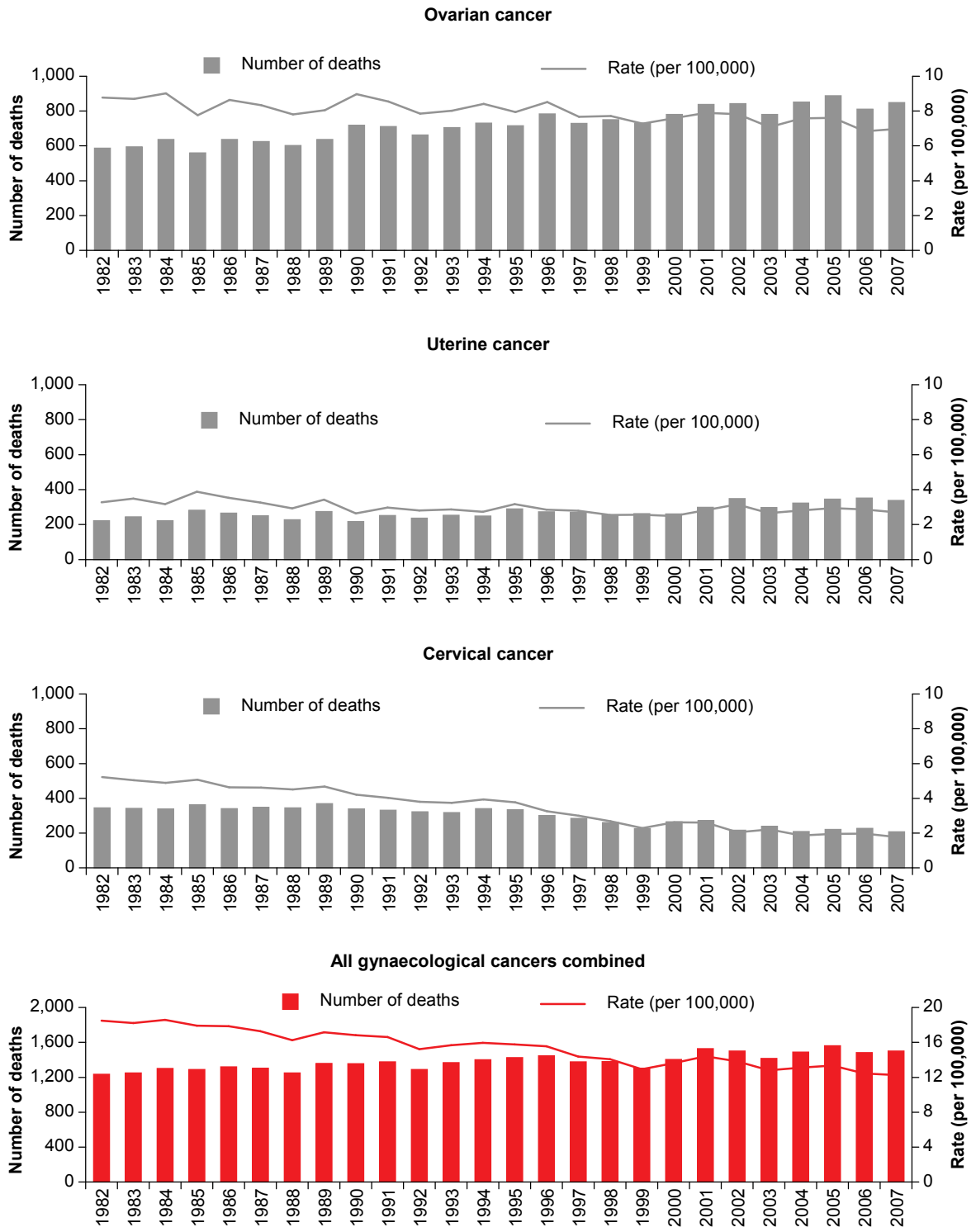
Do trends in mortality differ by age at death?

Figure 9.4 shows trends in age-standardised mortality rates for ovarian, uterine and cervical cancer, and all gynaecological cancers by age at death. Between 1982 and 2007, the mortality rates due to ovarian cancer fell slightly and significantly for females under the age of 50; from 1.7 to 0.9 per 100,000. The rates also fell significantly for females aged 50–69, with a fall in rates of 29% from 1982 (21.1 per 100,000) to 2007 (14.9). However, for females aged 70 and over at death, the mortality rates fluctuated considerably over the period and the mortality rate in 2007 (37.5 per 100,000) was at the same level as the rate in 1982 (37.3).

The mortality rates due to uterine cancer remained fairly stable from 1982 to 2007 for females under the age of 50 (around 0.1 to 0.3 per 100,000). For females aged 50–69 and 70 and over, the mortality rates fell somewhat from 1982 to 2007 (from 6.7 to 4.7 per 100,000 for females aged 50–69 and from 20.4 to 18.2 for females aged 70 and over), but these decreases were not statistically significant.

For cervical cancer, the mortality rates fell markedly and significantly for all age groups between 1982 and 2007. Specifically, the mortality rates fell by 61% for females under 50 (from 1.8 to 0.7 per 100,000), by 69% for females aged 50–69 (from 11.2 to 3.5) and by 66% for females aged 70 and over (from 19.1 to 6.5).

For all gynaecological cancers combined, the mortality rates fell significantly for each age group between 1982 and 2007—by 50% for females under 50 (from 3.8 to 1.9 per 100,000), by 42% for females aged 50 to 69 (from 41.0 to 24.0) and by 20% for females aged 70 and over (from 85.6 to 68.7).

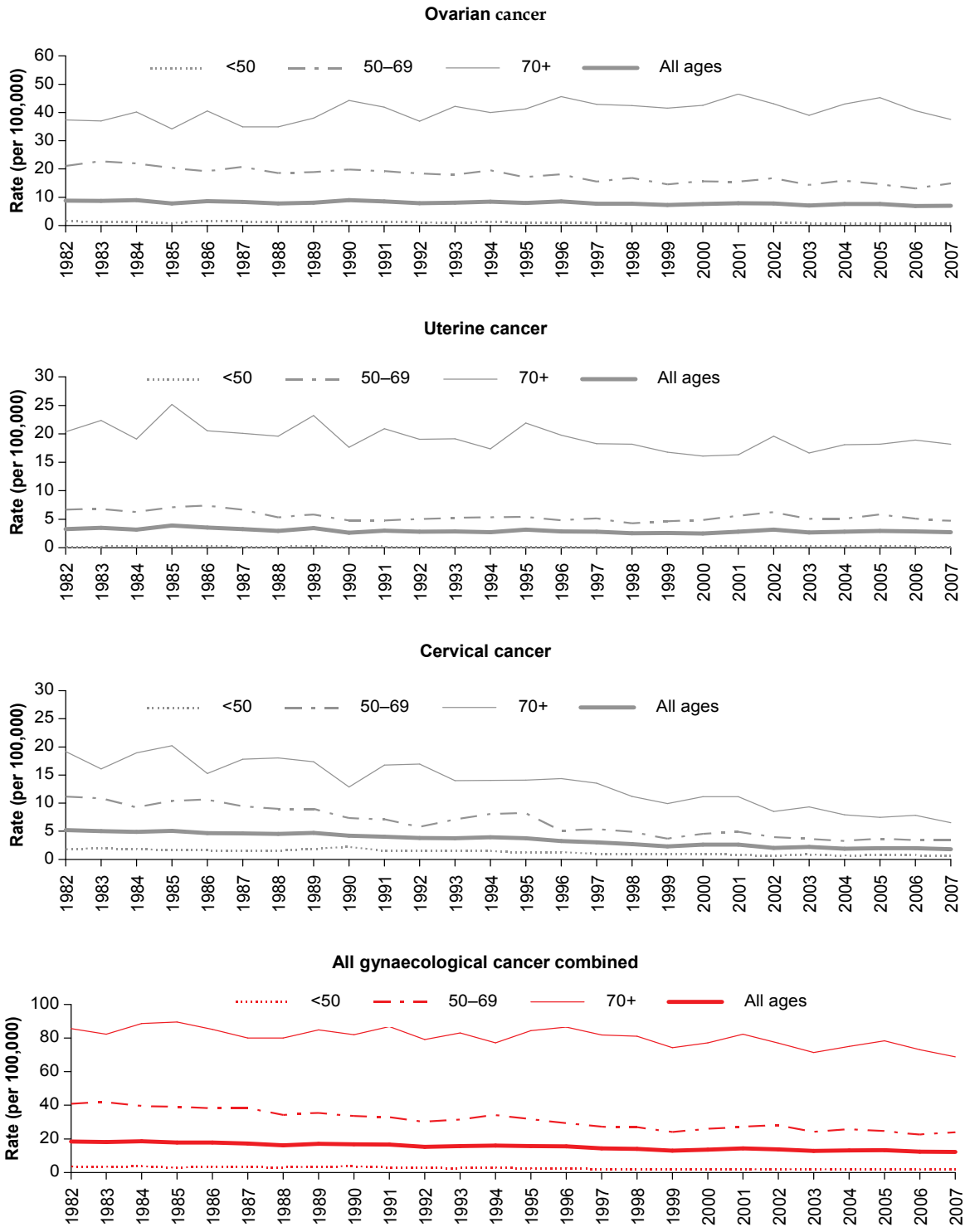


Notes

1. The rates were age-standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.
2. The scale of the y-axis differs for the individual figures shown.
3. The data for this figure are in shown Appendix Table D9.3.

Source: AIHW National Mortality Database.

Figure 9.3: Mortality from ovarian, uterine and cervical cancer, and all gynaecological cancers combined, Australia, 1982 to 2007



Notes

1. The rates were age-standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.
2. The scale of the y-axis differs for the individual figures shown.
3. The data for this figure are shown in Appendix Table D9.4–D9.7.

Source: AIHW National Mortality Database.

Figure 9.4: Mortality from ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by age at death, Australia, 1982 to 2007

What is the risk of death from gynaecological cancers?

The risk of death decreased for all types of gynaecological cancer between 1982 and 2007 (Table 9.3). The risk of dying from ovarian cancer by the age of 85 was 1 in 87 in 1982, compared with 1 in 106 in 2007. The corresponding values were 1 in 225 to 1 in 275 for uterine cancer and 1 in 165 to 1 in 502 for cervical cancer.

Table 9.3: Risk of death from ovarian, uterine and cervical cancer before the age of 85, Australia, 1982 to 2007

Year	Ovarian cancer	Uterine cancer	Cervical cancer	All gynaecological cancers combined
1982	1 in 87	1 in 225	1 in 165	1 in 43
1983	1 in 93	1 in 200	1 in 180	1 in 45
1984	1 in 88	1 in 242	1 in 172	1 in 44
1985	1 in 99	1 in 194	1 in 174	1 in 45
1986	1 in 92	1 in 221	1 in 190	1 in 45
1987	1 in 97	1 in 243	1 in 183	1 in 47
1988	1 in 98	1 in 252	1 in 179	1 in 48
1989	1 in 98	1 in 219	1 in 189	1 in 47
1990	1 in 86	1 in 269	1 in 234	1 in 48
1991	1 in 90	1 in 237	1 in 223	1 in 48
1992	1 in 99	1 in 279	1 in 218	1 in 52
1993	1 in 92	1 in 255	1 in 240	1 in 50
1994	1 in 90	1 in 282	1 in 225	1 in 50
1995	1 in 95	1 in 233	1 in 226	1 in 50
1996	1 in 88	1 in 239	1 in 258	1 in 49
1997	1 in 95	1 in 265	1 in 284	1 in 52
1998	1 in 95	1 in 280	1 in 327	1 in 54
1999	1 in 102	1 in 279	1 in 371	1 in 58
2000	1 in 100	1 in 285	1 in 325	1 in 57
2001	1 in 94	1 in 273	1 in 319	1 in 53
2002	1 in 93	1 in 239	1 in 416	1 in 55
2003	1 in 104	1 in 289	1 in 387	1 in 60
2004	1 in 94	1 in 264	1 in 496	1 in 57
2005	1 in 97	1 in 263	1 in 451	1 in 57
2006	1 in 107	1 in 255	1 in 443	1 in 60
2007	1 in 106	1 in 275	1 in 502	1 in 63

Source: AIHW National Mortality Database.

How many females are expected to die from a gynaecological cancer in 2020?

In this section, longer-term national projections of ovarian, uterine and cervical cancer mortality from 2011 to 2020 are presented (Figure 9.5). These projections are mathematical extrapolations of past trends, assuming that the same trend will continue into the future, and are intended to illustrate future changes that might reasonably be expected to occur if the

stated assumptions were to apply over the projection period. The projections are not forecasts and do not attempt to allow changes in cancer risk factors or for non-demographic factors (such as major government policy decisions and significant improvements in treatment) beyond the base years of the model that may affect future cancer incidence rates.

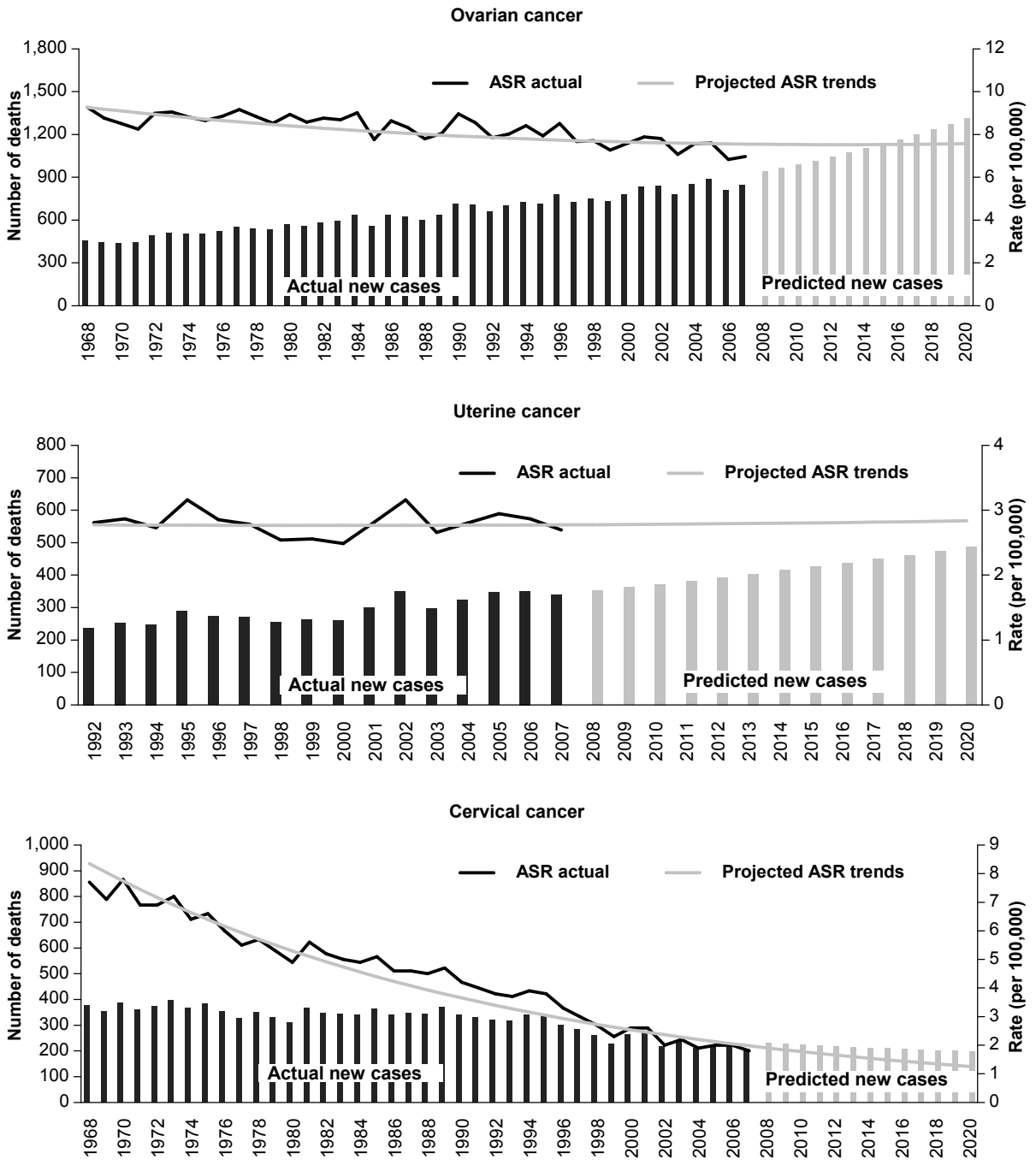
The nature of the projection method use and inherent fluctuations in both cancer mortality trends and population dynamics mean that care should be taken when using and interpreting the projections results in this report. No liability will be accepted by the AIHW for any damages arising from decisions or actions based upon these cancer mortality projections.

The mortality projections were calculated in a similar manner to the incidence projections presented in Chapter 2. Further information about the projection methodology can be found in the AIHW report titled *Cancer incidence projections: Australia, 2011 to 2020* (AIHW 2012a). Note that the projections for ovarian and cervical cancers were based on national mortality data from 1968 to 2007, whereas the projections for uterine cancer were based on data from 1982 to 2007.

The number of deaths from ovarian cancer is expected to continue to rise in the future. In 2012, the number of deaths is expected to be 1,050; in 2020, this number is expected to have increased to 1,310. When expected changes in the age structure and size of the population are taken into account, the results suggest that the age-standardised mortality rate will remain fairly constant at around 7.5 per 100,000 until 2020.

Due to continued ageing and growth of the population, the number of deaths from uterine cancers is expected to rise in the future, with an estimated 395 deaths in 2012 increasing to 485 in 2020. The results also indicate that the age-standardised incidence rate of uterine cancer will remain constant at 2.8 per 100,000 from 2012 to 2020.

In contrast to ovarian and uterine cancer, the number of deaths from cervical cancer is expected to fall slightly until 2020. The projections suggest that there will be 220 deaths from cervical cancer in 2012 and by 2020 this number will have fallen to 195 deaths. The age-standardised mortality rate for cervical cancer is expected to fall slightly, from 1.7 per 100,000 in 2012 to 1.3 in 2020.



Notes

1. The rates were age-standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.
2. The scale of the x- and y-axis differs for the individual figures shown.
3. These projections do not include adjustment for anticipated changes in trend (for example, as would be expected to emerge for cervical cancer in young women, due to effects of HPV vaccination).
4. The data for this figure are in Appendix Table D9.8.

Source: AIHW National Mortality Database.

Figure 9.5: Mortality from ovarian, uterine and cervical cancer, observed for 1982 to 2007 and projected to 2020, Australia

Do mortality rates differ across population groups?

In this section, differences in mortality rates for ovarian, uterine and cervical cancer, and all gynaecological cancers combined are presented according to state and territory, remoteness area, socioeconomic status, Aboriginal and Torres Strait Islander status and country of birth. Any observed differences among the groups compared may be due to a number of reasons, including:

- differences in incidence rates of gynaecological cancers
- the characteristics of the cancers diagnosed (for example, stage at diagnosis and type of tumour)
- access to, and quality of, treatment.

The mortality rates are presented for the 5 years from 2003 to 2007 rather than for just one year, since presenting data for multiple years reduces random variation in rates. However, some rates have been based on less than 20 deaths and these should be interpreted and compared with caution.

In this section, the age-standardised rates are compared by calculating rate ratios. More information about rate ratios is in Appendix B.

Do mortality rates differ by state and territory?

Between 2003 and 2007, the highest number of deaths from gynaecological cancers occurred in New South Wales (2,504 deaths), with 1,391 from ovarian cancer, 554 from uterine cancer and 391 from cervical cancer. The lowest number of deaths from gynaecological cancers was in the Northern Territory (31 deaths), with 8 from ovarian cancer, 8 from uterine cancer and 11 from cervical cancer (Appendix Table D9.8).

Figure 9.6 presents mortality rates according to states and territories for 2003 to 2007. The lowest age-standardised mortality rate due to ovarian cancer was for the Northern Territory (2.5 per 100,000). This rate was significantly lower than that for other states and territories. The highest rates from ovarian cancer were for the Australian Capital Territory (8.4) and Victoria (8.0). While the rate for the Australian Capital Territory did not differ significantly from that of other states and territories, the rate for Victoria was significantly higher than the rates for New South Wales (7.0), Queensland (6.6) and South Australia (6.4).

For uterine cancer, the mortality rates across states and territories ranged between 2.4 per 100,000 (in Tasmania) and 3.6 (in the Northern Territory) but there were no statistically significant differences in the age-standardised rates between any of the jurisdictions.

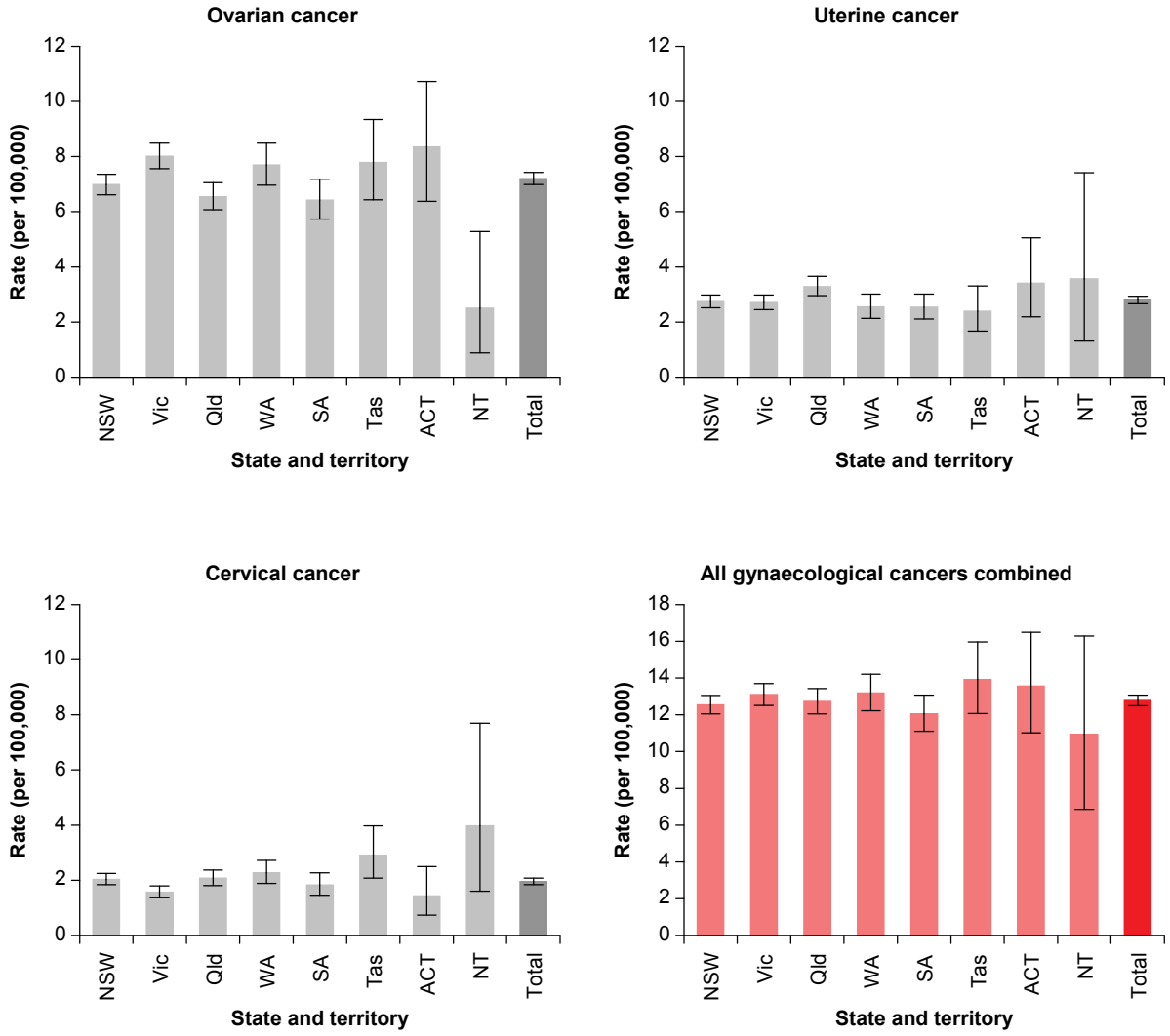
For cervical cancer, the age-standardised mortality rates were lowest in the Australian Capital Territory (1.4 per 100,000) and Victoria (1.6). The rate for the Australian Capital Territory did not differ significantly from that of other states and territories but the rate for Victoria was significantly lower than the rate for Western Australia (2.3) and Tasmania (2.9). The highest rate was for the Northern Territory (4.0) but this rate did not differ significantly from that of other jurisdictions.

For all gynaecological cancers combined, there were no statistically significant differences in the age-standardised rates between any of the jurisdictions.

Box 9.2: Mortality data differences

The state and territory data on mortality due to gynaecological cancer in this report may not be comparable with data published by individual state and territory cancer registries for a number of reasons, including (Cancer Council Queensland 2009; Tracey et al. 2009a):

- The data in this report refer to the place of a person's residence at the time of *death*. In contrast, the state and territory cancer registries generally present mortality information based on a person's place of residence at the time of *diagnosis*. In these latter data, the deaths may or may not have occurred in the state or territory indicated.
- Different approaches were used to assign cause of death. In this report, data on mortality for each jurisdiction were derived from the National Mortality Database (NMD) (see Appendix C). Information on cause of death in the NMD is sourced from the Australian Bureau of Statistics (ABS) that makes use of death certificate information to assign cause of death. In contrast, the state and territory cancer registries may make use of information from a number of different sources, including pathology reports and other notifications, to assign a cause of death.



Notes

1. The rates were age-standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females. The rates are based on the total number of deaths over the 5-year period from 2003–2007.
2. The error bars (symbol) represent 95% confidence intervals.
3. The scale of the y-axis differs for the individual figures shown.
4. The data for this figure are shown in Appendix Table D9.9.

Source: AIHW National Mortality Database.

Figure 9.6: Mortality from ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by state and territory, Australia, 2003–2007

Do mortality rates differ by remoteness area?

In Figure 9.7, the age-standardised mortality rates for females living in different remoteness areas are presented for ovarian, uterine and cervical cancer, and all gynaecological cancers combined.

Between 2003 and 2007, there was no statistically significant association between the ovarian cancer mortality rate and the remoteness area.

The uterine cancer mortality rate tended to increase with remoteness from 2003 to 2007 but a statistically significant difference was observed only between the rate in *Major cities* (2.7 per 100,000) and the rate in *Outer regional* areas (3.4 per 100,000). Specifically, females in *Outer regional* areas were 1.3 times as likely to die from uterine cancer as their counterparts in *Major cities.*

For cervical cancer, the mortality rates were similar in *Major cities* and *Inner regional* areas (1.8 per 100,000 for each area); however, these rates were significantly lower than the rates in *Outer regional* (2.8) and *Remote and very remote* areas (4.0)—0.6 times *Outer regional* areas and 0.5 times *Remote and very remote* areas.

The mortality rate for all gynaecological cancers combined was highest in *Remote and very remote* areas (17.2 per 100,000), with this rate being significantly higher than the rate in *Major cities* (12.4) and *Inner regional* areas (13.1)—1.4 times *Major cities* and 1.3 times *Inner regional* areas.

The higher mortality rates of uterine and cervical cancer, and all gynaecological cancers combined in more remote areas of Australia may be explained by the large population of Aboriginal and Torres Strait Islander females living in these areas and the Aboriginal and Torres Strait Islander population's higher rates of mortality from gynaecological cancers. It is also possible, however, that the difference could be attributed to access to diagnostic and other health services in remote areas (AIHW & AACR 2010).

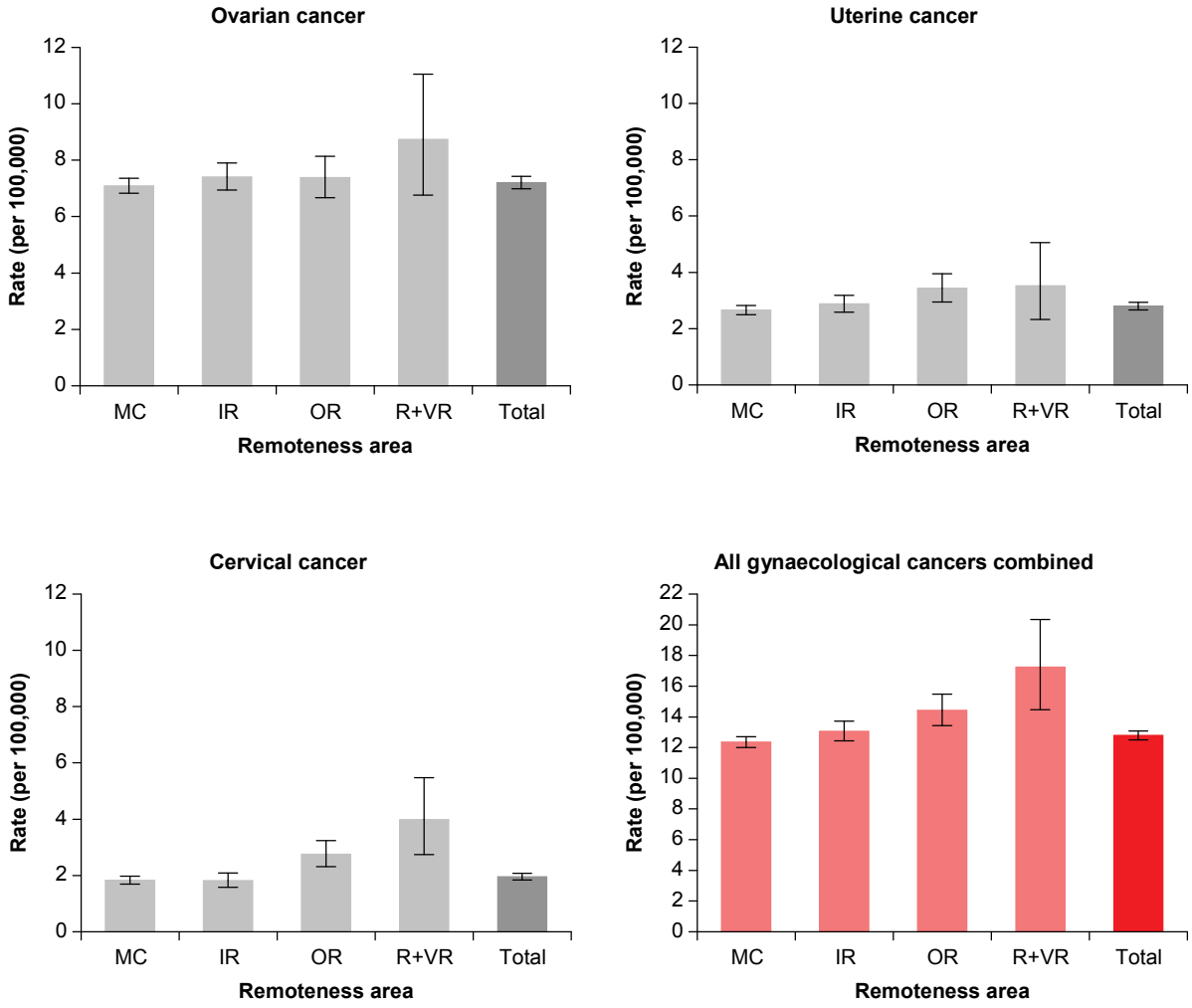
Do mortality rates differ by socioeconomic status?

As discussed in Chapter 2, the socioeconomic status measure used in this report pertains to the characteristics of people in the area in which the women lived, rather than to the characteristics of the individual (see Appendix A).

For ovarian and uterine cancer, there were no statistically significant differences by socioeconomic status in 2003 to 2007 (Figure 9.8).

The cervical cancer mortality rate was highest for females in the lowest socioeconomic status group (group 1). While this rate did not differ significantly different from that of females in group 2 and 3, it did differ significantly from that of females in the two highest socioeconomic status group (that is, group 4 and 5). Specifically, the rate for females in the lowest socioeconomic status group was 1.3 times the rate for females in group 4 and 1.9 times the rate of females in group 5.

In 2003 to 2007, there was no statistically significant association between the mortality rate for all gynaecological cancers combined and socioeconomic status in Australia.

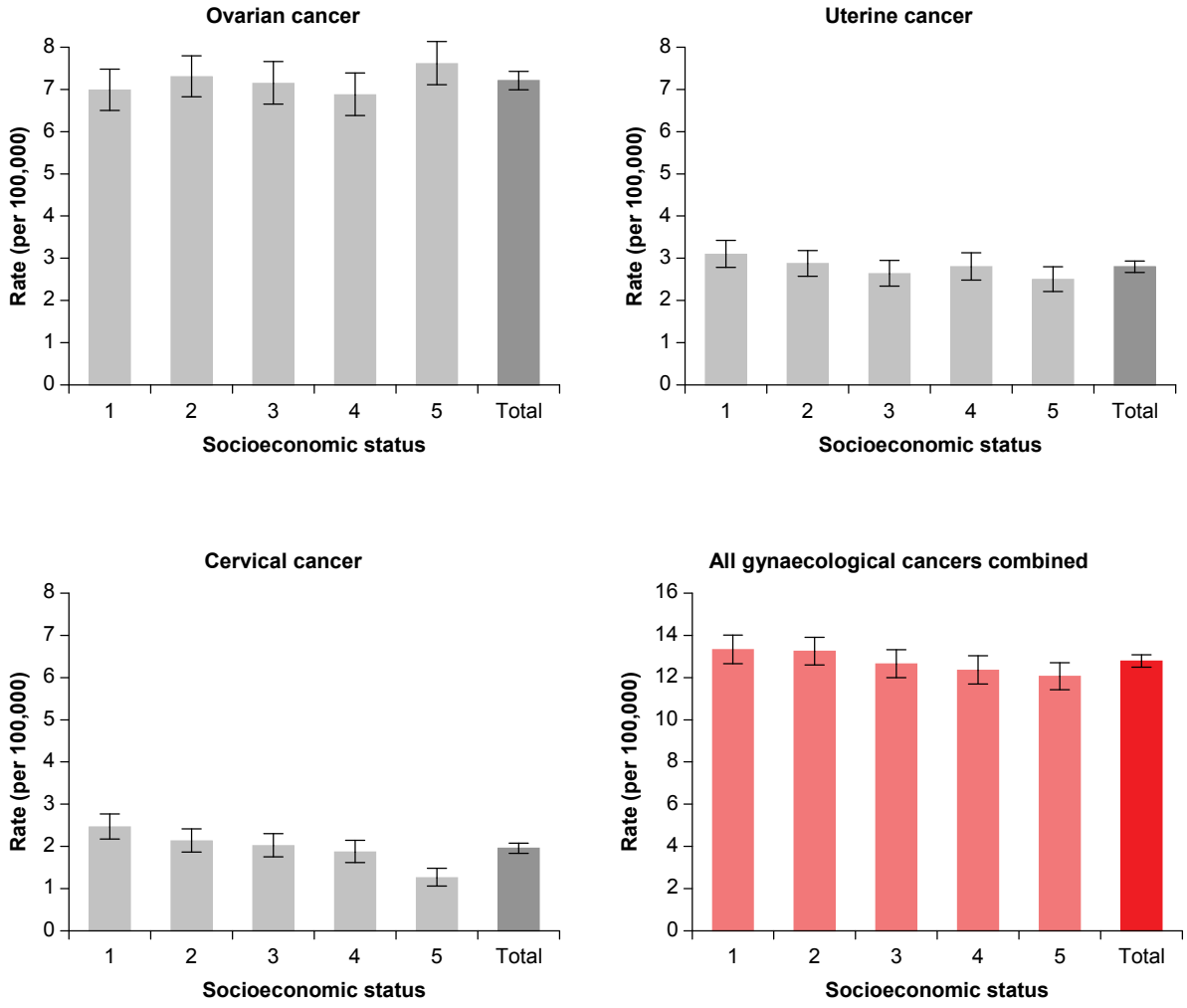


Notes

1. Remoteness was classified according to the Australian Standard Geographical Classification (ASGC) Remoteness Areas (see Appendix A), showing 'MC' as Major cities, 'IR' as Inner regional, 'OR' as Outer regional and 'R+VR' as Remote and very remote areas.
2. The rates were age-standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females. The rates are based on the total number of deaths over the 5-year period from 2003–2007.
3. The error bars (symbol) represent 95% confidence intervals.
4. The 'Total' column includes deaths for which information on remoteness area was not available.
5. The scale of the y-axis differs for the individual figures shown.
6. The data for this figure are shown in Appendix Table D9.10.

Source: AIHW National Mortality Database.

Figure 9.7: Mortality from ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by remoteness area, 2003–2007



Notes

1. Socioeconomic status was classified using the ABS Index of Relative Socio-economic Disadvantage (see Appendix A), showing '1' as lowest socioeconomic status to '5' as highest socioeconomic status.
2. The rates were age-standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females. The rates are based on the total number of deaths over the 5-year period from 2003–2007.
3. The error bars (symbol) represent 95% confidence intervals.
4. The 'Total' column includes cases for which information on socioeconomic status was not available.
5. The scale of the y-axis differs for the individual figures shown.
6. The data for this figure are shown in Appendix Table D9.11.

Source: AIHW National Mortality Database.

Figure 9.8: Mortality from ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by socioeconomic status, 2003–2007

Do mortality rates differ by Aboriginal and Torres Strait Islander status?

Information in the NMD on Aboriginal and Torres Strait Islander status for 2003 to 2007 is considered to be of sufficient quality for use for four jurisdictions: New South Wales, Queensland, South Australia and the Northern Territory. Almost 3 in 4 (75%) Aboriginal and Torres Strait Islander females live in these jurisdictions (ABS 2009b). In the NMD, the

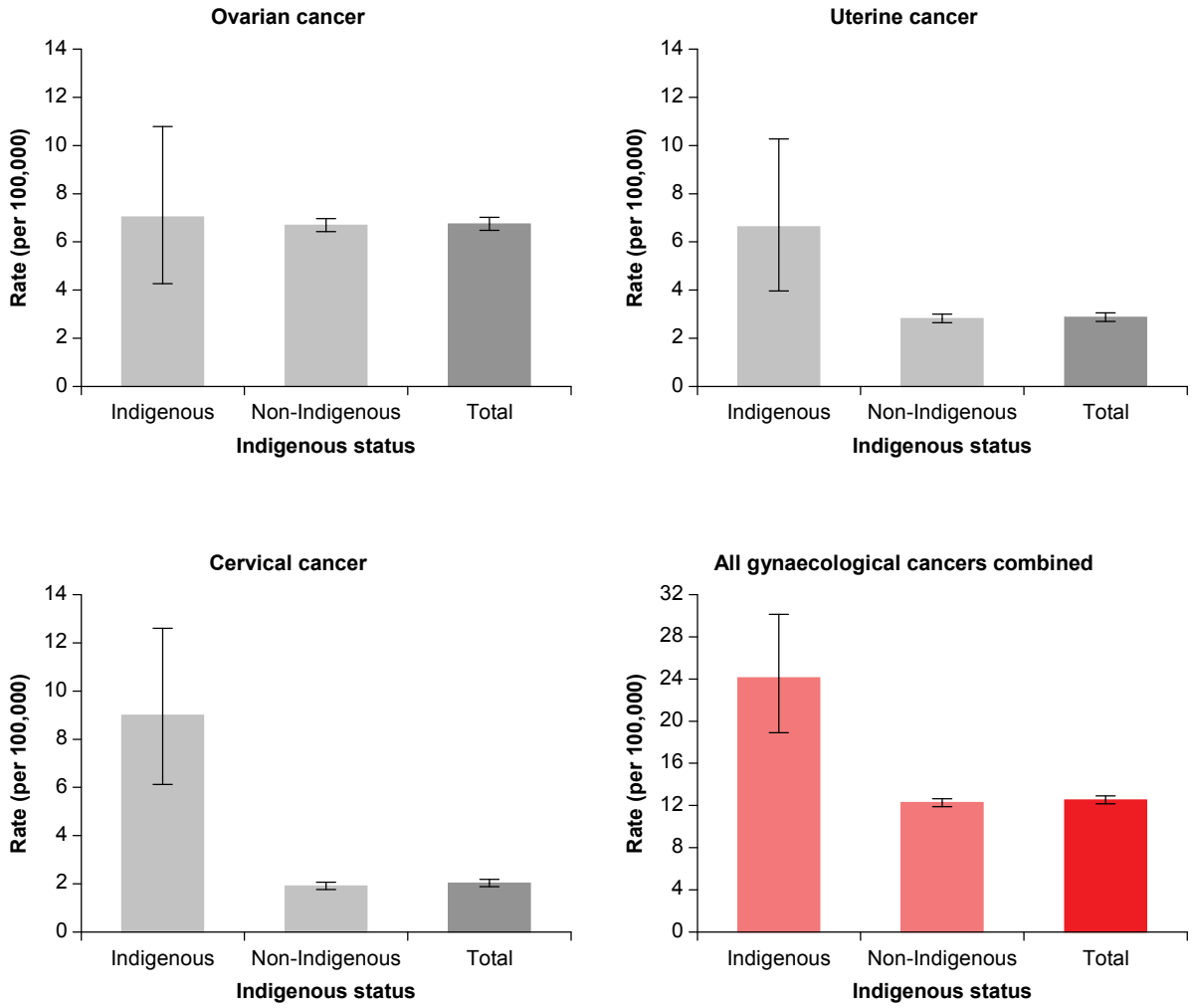
Aboriginal and Torres Strait Islander status was not known for less than 1% of the females who had died from a gynaecological cancer in the four jurisdictions.

Over the 5 years from 2003 to 2007, there were 97 deaths from gynaecological cancers in Aboriginal and Torres Strait Islander females, which accounts for 11% of all cancer deaths in this group. Of these deaths, 25 were due to ovarian cancer, 23 due to uterine cancer and 43 due to cervical cancer.

Between 2003 and 2007, there was no statistically significant difference in the age-standardised mortality rates for ovarian cancer for Aboriginal and Torres Strait Islander females (7.0 per 100,000) compared with non-Indigenous females (6.7) (Figure 9.9).

In contrast, the mortality rates for uterine and cervical cancer, and all gynaecological cancers combined were significantly higher for Aboriginal and Torres Strait Islander females than non-Indigenous females. In particular, Aboriginal and Torres Strait Islander females were 2.4 times as likely to die from uterine cancer (6.6 versus 2.8 per 100,000), 4.7 times as likely to die from cervical cancer (9.0 versus 1.9) and 2.0 times as likely to die from all gynaecological cancers combined (24.1 versus 12.3) as non-Indigenous females.

Possible explanations for the higher mortality from uterine and cervical cancer, and all gynaecological cancers combined in Aboriginal and Torres Strait Islander females include more diagnosis at an advanced stage, lesser uptake of cancer treatment and a greater number of comorbidities (Moore et al. 2010). The higher mortality rate of cervical cancer in Aboriginal and Torres Strait Islander females is also likely to reflect lower participation in cervical screening (Burns et al. 2010; Roder 2005).



Notes

1. The rates were age-standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females. The rates are based on the total number of deaths over the 5-year period from 2003–2007.
2. The error bars (symbol) represent 95% confidence intervals.
3. The 'Total' column includes cases for which information on Aboriginal and Torres Strait Islander status was not available.
4. The scale of the y-axis differs for the individual figures shown.
5. The data for this figure are shown in Appendix Table D9.12.

Source: AIHW National Mortality Database.

Figure 9.9: Mortality from ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by Aboriginal and Torres Strait Islander status, New South Wales, Queensland, South Australia and the Northern Territory, 2003–2007

Do mortality rates differ by country of birth?

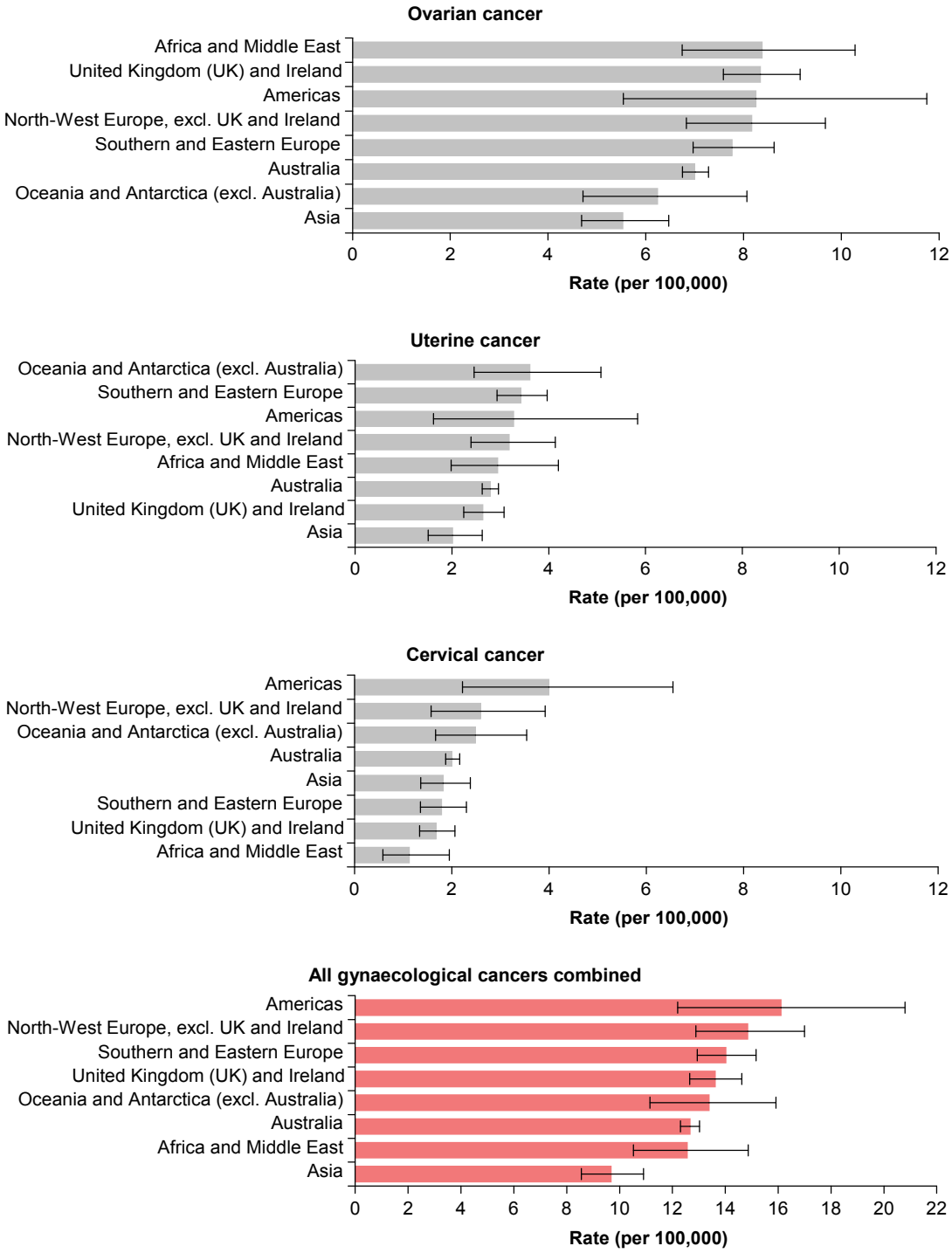
Figure 9.10 shows the mortality rates of gynaecological cancers by country/region of birth. Note that some of the presented rates have been based on fewer than 20 deaths and thus, caution should be taken when considering differences in mortality across countries/regions.

From 2003 to 2007, females living in Australia who were born in Africa and the Middle East had the highest age-standardised mortality rate of ovarian cancer (8.4 per 100,000), but this was not significantly higher than the rate for females born in Australia (7.0). Females born in Asia had the lowest mortality rate of ovarian cancer (5.5); this was significantly lower than the rate for those born in Australia.

During the same period, females living in Australia who were born in Oceania and Antarctica had the highest age-standardised mortality rate of uterine cancer (3.6 per 100,000), while females born in Asia had the lowest (2.0). These rates were not significantly lower than the rate for those born in Australia (2.8).

For cervical cancer, females living in Australia who were born in the Americas (4.0 per 100,000) had the highest age-standardised mortality rate but it was not significantly higher than the rate for females born in Australia (2.0). In contrast, the lowest mortality rate was for females born in North Africa and the Middle East (1.1), but this was not significantly lower than that for females born in Australia.

For all gynaecological cancers combined, females living in Australia who were born in Americas had the highest age-standardised mortality rate (16.1 per 100,000), but it was not significantly higher than that for females born in Australia (12.7). The age-standardised rates for females who were born in Asia (9.7) were significantly lower than that for Australian-born females.



Notes

1. Country of birth is classified according to the Standard Australian Classification of Countries, 2nd edition (see Appendix A).
2. The rates were age-standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females. The rates are based on the total number of deaths over the 5-year period from 2003–2007.
3. The error bars (symbol) represent 95% confidence intervals.
4. The scale of the x-axis differs for the individual figures shown.
5. The data for this figure are shown in Appendix Table D9.13.

Source: AIHW National Mortality Database.

Figure 9.10: Mortality from ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by country/region of birth, Australia, 2003–2007

How does Australia compare internationally?

In this section, the mortality rate of selected gynaecological cancers in Australia is compared with that for other countries and regions, with the rates age-standardised to the World Standard Population (Doll et al. 1966). The data were sourced from the GLOBOCAN database, which is prepared by the International Agency for Research on Cancer (IARC) (Ferlay et al. 2010a). The most recent GLOBOCAN estimates are for 2008, and are based on rates from about 3 to 5 years earlier. The confidence intervals indicate the variation that would be expected by chance, assuming that the estimated mortality rates are accurate. The GLOBOCAN data for ovarian cancer pertain to cancers coded in ICD-10 as C56, uterine cancer to cancers coded in ICD-10 as C54 and cervical cancer coded in ICD-10 as C53. Thus, the definition of uterine cancer is different from that generally considered in this report. See Appendix C for further details about this database.

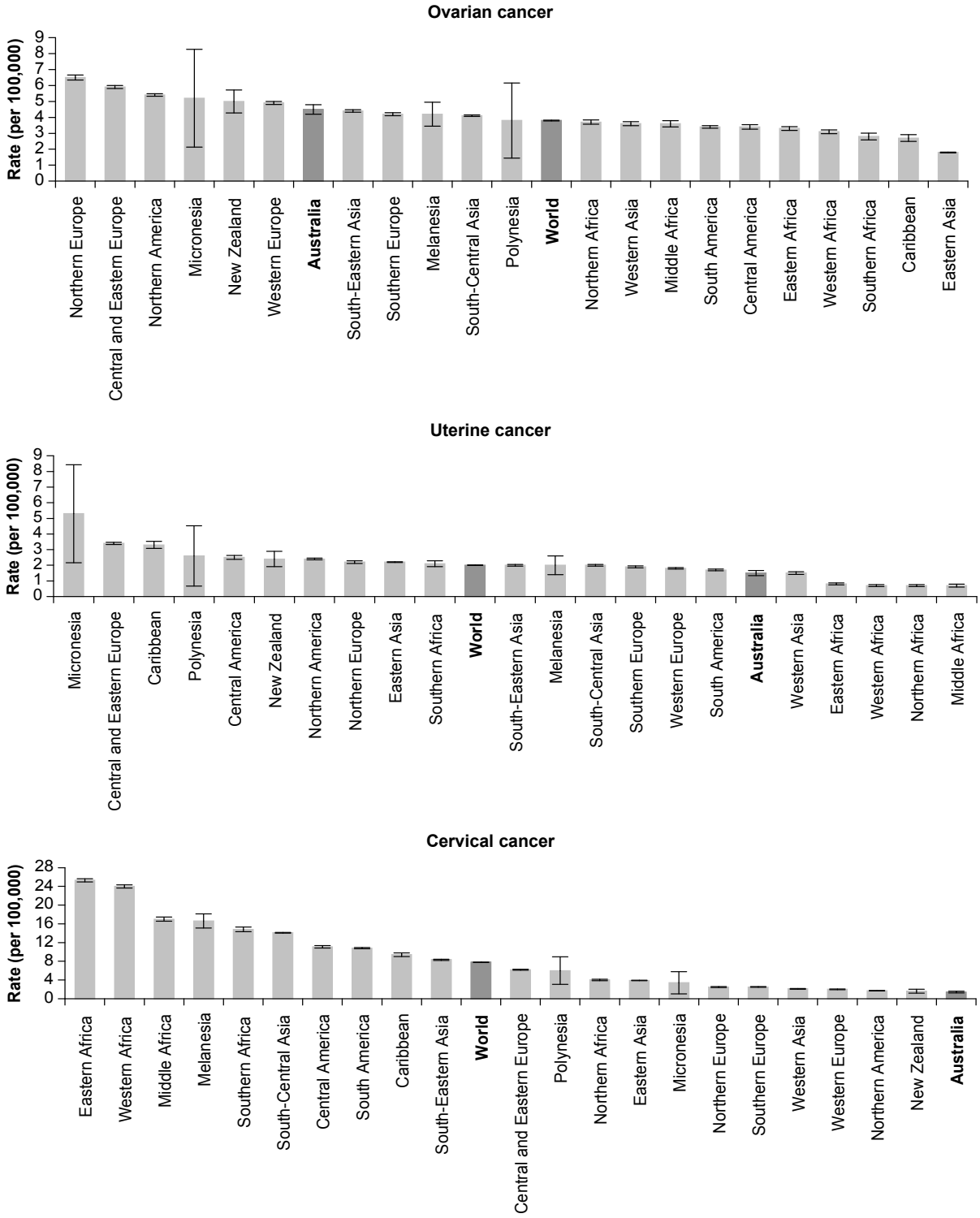
As discussed in Chapter 2, caution must be taken when comparing data from different countries since observed differences may be due to a range of methodological factors, not just differences in the underlying rates. They may include differences in diagnostic and classification practices, completeness of cancer registration and the proportion of females with various risk and protective factors (for example, different reproductive histories) (Ferlay et al. 2010b).

Figure 9.11 shows the estimated mortality rates of ovarian, uterine and cervical cancer by country (for Australia and New Zealand) and by regions.

For Australian females, the estimated age-standardised mortality rate for ovarian cancer was 4.5 deaths per 100,000 females. This rate was significantly lower than the rates estimated for some Westernised countries and regions, including Northern Europe (6.5 per 100,000), Central and Eastern Europe (5.9), and Northern America (5.4). Australian females had a similar mortality rate of ovarian cancer to that for females in New Zealand (5.0), but a significantly higher mortality rate than the rate for each region in Africa and Asia, with the exception of South-Eastern Asia.

The estimated age-standardised mortality rate for uterine cancer for Australia females (1.5 per 100,000) was significantly lower than that for a number of other Westernised countries and regions including Central and Eastern Europe (3.4), New Zealand (2.4), Northern America (2.4) and Northern Europe (2.2). Meanwhile, Australia's mortality rate for uterine cancer was estimated to be significantly higher than the rate for all of the African regions, with the exception of South Africa.

The estimated age-standardised mortality rate for cervical cancer for Australian females (1.4 per 100,000) was ranked lowest for the selected countries and regions. It was significantly lower than the rates for each of the regions in Africa (4.0 to 25.3), Asia (2.1 to 14.1) and Europe (2.0 to 6.2). However, the rate estimated for Australian females was similar to that for females in Northern America (1.7) and New Zealand (1.6).



Notes

1. The data were estimated for 2008 and are based on data from about 3 to 5 years earlier.
2. The rates were age-standardised by the IARC using the World Standard Population (Doll et al. 1966). The confidence intervals (as shown by the error bars) are approximations and were calculated by the AIHW (see Appendix B).
3. The error bars (symbol) represent 95% confidence intervals.
4. The data for this figure are in Appendix Table D9.14.

Source: Ferlay et al. 2010a.

Figure 9.11: International comparison of estimated mortality from gynaecological cancers, 2008

Appendix A: Classifications

Australian Standard Geographical Classification Remoteness Areas

The Australian Standard Geographical Classification (ASGC) Remoteness Areas was used to assign areas across Australia to a remoteness category (ABS 2006). This classification allocates one in five remoteness categories to areas depending on their distance from different-sized urban centres, where the population size of the urban centre is considered to govern the range and type of services available.

Areas are classified as *Major cities*, *Inner regional*, *Outer regional*, *Remote* and *Very remote* (AIHW 2004). The category *Major cities* includes Australia's capital cities, with the exceptions of Hobart and Darwin, which are classified as *Inner regional*. For this report, the categories of *Remote* and *Very remote* were collapsed due to the small number of cases in these two subgroups.

The remoteness category was assigned to a cancer case according to the postal areas of residence at the time of diagnosis. It was assigned to a cancer death according to the statistical local area (SLA) of residence at time of death.

Index of Relative Socio-economic Disadvantage

The Index of Relative Socio-economic Disadvantage (IRSD) is one of four Socio-Economic Indexes for Areas (SEIFAs) developed by the Australian Bureau of Statistics (ABS 2008b). This index is based on factors such as average household income, education levels and unemployment rates. Rather than being a person-based measure, the IRSD is an area-based measure of socioeconomic status in which small areas of Australia are classified on a continuum from disadvantaged to affluent. This information is used as a proxy for the socioeconomic status of people living in those areas and may not be correct for each person in that area.

Socioeconomic status fifths (or quintiles) were assigned to cancer cases and deaths according to the IRSD of the statistical local area (SLA) of residence at the time of diagnosis or death.

In this report, the first socioeconomic status group (labelled '1') corresponds to geographical areas containing the 20% of the population with the lowest socioeconomic status according to the IRSD, and the fifth group (labelled '5') corresponds to the 20% of the population with the highest socioeconomic status.

International Statistical Classification of Diseases and Related Health Problems

The International Statistical Classification of Diseases and Related Health Problems (ICD) is used to classify diseases and other health problems (including symptoms and injuries) in clinical and administrative records. The use of a standard classification system enables the storage and retrieval of diagnostic information for clinical and epidemiological purposes that is comparable between different service providers, across countries and over time.

In 1903, Australia adopted the ICD to classify causes of death. It was fully phased in by 1906. Since 1906, the ICD has been revised nine times in response to the recognition of new diseases (for example, Acquired Immunodeficiency Syndrome (AIDS)), increased knowledge of diseases, and changing terminology in the description of diseases. The version currently in use, ICD-10 (WHO 1992), was endorsed by the 43rd World Health Assembly in May 1990 and officially came into use in World Health Organization (WHO) member states from 1994.

International Statistical Classification of Diseases and Related Health Problems, Australian modification

The Australian modification of ICD-10, which is referred to as the ICD-10-AM (NCCH 2008a), is based on ICD-10. ICD-10 was modified for the Australian setting by the National Centre for Classification in Health (NCCH) with assistance from clinicians and clinical coders. Despite the modifications, compatibility with ICD-10 at the higher levels (that is, up to 4 character codes) of the classification has been maintained. ICD-10-AM has been used for classifying diagnoses in hospital records in all states and territories since 1999–00 (AIHW 2000).

Australian Classification of Health Interventions

The current version of the ICD does not incorporate a classification system for coding health interventions (that is, procedures). In Australia, a health intervention classification system was designed to be implemented at the same time as the ICD-10-AM in July 1998. The system was based on the Medicare Benefits Schedule (MBS) coding system and originally called MBS-Extended. The name was changed to the Australian Classification of Health Interventions (ACHI) with the release of the third revision of the ICD-10-AM in July 2002 (NCCH 2008c). ACHI and ICD-10-AM are used together for classifying morbidity, surgical procedures and other health interventions in Australian hospital records.

Standard Australian Classification of Countries

The Standard Australian Classification of Countries (SACC) is the Australian statistical standard for statistics classified by country (ABS 2008a). It is a classification of countries that is essentially based on the concept of geographic proximity. It groups neighbouring countries into progressively broader geographical areas on the basis of their similarity in terms of social, cultural, economic and political characteristics. The first edition of the SACC was published in 1998, and the second—the one used in this report—was released by the ABS in 2008.

Appendix B: Statistical methods and technical notes

Age-specific rates

Age-specific rates provide information on the incidence of a particular event in an age group relative to the total number of people at risk of that event in the same age group. It is calculated by dividing the number of events occurring in each specified age group by the corresponding 'at-risk' population in the same age group and then multiplying the result by a constant (for example, 100,000) to derive the rate. Age-specific rates are often expressed per 100,000 population.

Age-standardised rates

A crude rate provides information on the number of cases of gynaecological cancer indicators (such as incidence, mortality and hospitalisation) relative to the number of people in the population at risk in a specified period. No age adjustments are made when calculating a crude rate. Since the risk of developing a gynaecological cancer depends heavily on age, crude rates are not suitable for looking at trends or making comparisons across groups in cancer incidence and mortality.

More meaningful comparisons can be made by the use of age-standardised rates, with such rates adjusted for age in order to facilitate comparisons between populations that have different age structures (for example between the Aboriginal and Torres Strait Islander population and other Australians). This standardisation process effectively removes the influence of age structure on the summary rate.

Two methods are commonly used to adjust for age: direct and indirect standardisation. In this report, the direct standardisation approach presented by Jensen and colleagues (1991) is used. To age-standardise using the direct method, the first step is to obtain population numbers and numbers of cases (or deaths) in age ranges—typically 5-year age ranges. The next step is to multiply the age-specific population numbers for the standard population (in this case the Australian population as at 30 June 2001) by the age-specific incidence rates (or death rates) for the population of interest (such as those in a certain socioeconomic status group or those who lived in *Major cities*). The next step is to sum across the age groups and divide this sum by the total of the standard population to give an age-standardised rate for the population of interest. Finally this can be expressed per 1,000 or 100,000 as appropriate.

Age-standardised average length of stay

Information on crude average length of stay (ALOS) is presented in Chapter 4, together with age-standardised ALOSs. The use of age-standardised ALOS enables comparisons between groups and within groups over time taking into account differences in the age structure and size of the population.

Calculating age-standardised ALOS is a three-step process. Within each population of interest, the crude ALOS for each age category is derived first by dividing the number of patient days for each age category by the corresponding number of hospitalisations. The second step is to calculate the weights using the selected standard population. The weights

are derived by dividing the number of hospitalisations for each age category by the overall total of the standard population. The standard population chosen is the Australian female overnight hospitalisations population in 2009–10 where the principal diagnosis was cancer (ICD-10-AM codes of C00–C97, D45, D47.1 and D47.3). The third step is to multiply the crude ALOS with the corresponding weights and then sum up to obtain the total age-standardised ALOS.

Confidence intervals

An observed value of a rate may vary due to chance, even where there is no variation in the underlying value of the rate. A confidence interval provides a range of values that has a specified probability of containing the true rate or trend. The 95% (p-value = 0.05) confidence interval is used in this report; thus, there is a 95% likelihood that the true value of the rate is somewhere within the stated range. Confidence intervals can be used as a guide to whether or not differences are consistent with chance variation. In cases where no values within the confidence intervals overlap, the difference between rates is greater than that which could be explained by chance and is regarded as statistically significant. Note, however, that overlapping confidence intervals do not necessarily mean that the difference between two rates is definitely due to chance. Instead, an overlapping confidence interval represents a difference in rates that is too small to allow differentiation between a real difference and one that is due to chance variation. It can, therefore, only be stated that no statistically significant differences were found, and not that no differences exist. The approximate comparisons presented might understate the statistical significance of some differences, but they are sufficiently accurate for the purposes of this report.

As with all statistical comparisons, care should be exercised in interpreting the results of the comparison of rates. If two rates are statistically significantly different from each other, this means that the difference is unlikely to have arisen by chance. Judgment should, however, be exercised in deciding whether or not the difference is in fact due to chance or whether it is of any practical significance.

The variances of the age-specific rates were calculated by assuming that the counts follow a Poisson distribution, as recommended in Jensen et al. (1991) and Breslow and Day (1987). When the age-specific rates are low relative to the population at risk, the variability in the observed counts is accepted to be Poisson. However, even if the age-specific rates are not low, Poisson distribution is still generally assumed (Brillinger 1986; Eayres et al. 2008).

With one exception, the confidence intervals of the age-standardised rates in this report were calculated using a method developed by Dobson et al. (1991). This method calculates approximate confidence intervals for a weighted sum of Poisson parameters.

The one exception applies to the confidence intervals that were calculated for the international comparisons of incidence and mortality data using GLOBOCAN data. For those data, the lack of the required data meant that the Dobson method could not be used and the AIHW approximated the confidence intervals using the following formula:

$$95\%\ \text{CI approximation} = \text{AS rate} \pm 1.96 \times \frac{\text{AS rate}}{\sqrt{\text{Number of cases}}}$$

Since the GLOBOCAN data are based on the estimates of the number of new cases and deaths from cancer, the associated confidence intervals indicate the range of random variation that might be expected, should those estimates be 100% accurate.

Note that statistical independence of observations is assumed in the calculations of the confidence intervals for this report. This assumption may not always be valid for episode-based data (such as data from the National Hospital Morbidity Database).

The use of confidence intervals for non-sample data

The AIHW is reviewing the provision of confidence intervals when data arises from sources that provide information on all subjects, rather than from a sample survey. This review will include analysis of the methods used to calculate confidence intervals, as well as the appropriateness of reporting confidence intervals for such data. It aims to ensure that statistical methods used in AIHW reporting appropriately inform understanding and decision making.

Mortality-to-incidence ratio

Both mortality-to-incidence ratios (MIRs) and relative survival ratios can be used to estimate survival from a particular disease, such as a gynaecological cancer, for a population. Although MIRs are the cruder of the two ratios, MIRs do not have the same comparability and interpretation problems associated with them when attempting to make international comparisons (see Chapter 8). Thus, the MIR is considered to be a better measure when comparing survival between countries.

The MIR is defined as the age-standardised mortality rate divided by the age-standardised incidence rate. If people tend to die relatively soon after diagnosis from a particular cancer (that is, the death rate is nearly as high as the incidence rate for that cancer), then the MIR will be close to 1.00. In contrast, if people tend to survive a long time after being diagnosed, then the MIR will be close to zero.

The MIR only gives a valid measure of the survival experience in a population if:

- cancer registration and death registration are complete or nearly so
- the incidence rate, mortality rate and survival proportion are not undergoing rapid change.

The incidence and mortality data used to calculate the MIRs in Chapter 8 were extracted from the 2008 GLOBOCAN database (Ferlay et al. 2010a).

Prevalence

Limited-duration prevalence is expressed as *N-year prevalence* throughout this report. *N-year prevalence* on a given index date (31 December 2008), where *N* is any number 1, 2, 3 etc., is defined as the number of females alive at the end of that day who had been diagnosed with a gynaecological cancer in the past *N* years. For example:

- 1-year prevalence is the number of living females who were diagnosed in the past year to 31 December 2008.
- 5-year prevalence is the number of living females who were diagnosed in the past 5 years to 31 December 2008. This includes the females defined by 1-year prevalence.

In this report, 27-year prevalence is the longest duration that can be calculated based on the earliest (1982) and latest (2008) years of available incidence data. Females who were diagnosed with at least one gynaecological cancer between 1982 and 2008 and who were alive on 31 December 2008 would be counted in 27-year prevalence. It is presented in this report as an approximation of the number of females alive who have ever been diagnosed with cancer, known as *complete prevalence*. Limited-duration prevalence was selected given its advantages in the ease of interpretation and calculation. Twenty-seven years was deemed a sufficiently long period for approximating complete prevalence, especially given that most gynaecological cancers are diagnosed in the later years of life.

Note that prevalence is measured by the number of females diagnosed with a gynaecological cancer, not the number of gynaecological cancer cases. A female who was diagnosed with two separate gynaecological cancers will contribute separately to the prevalence of each cancer. However, this individual will contribute only once towards prevalence of all gynaecological cancers combined. For this reason, the sum of the prevalence counts for individual cancers will not equal the prevalence of all gynaecological cancers combined.

Prevalence can also be expressed as a proportion of the total population as at the index date. In this report, the prevalence proportion is expressed per 10,000 female population due to the relative size of the numerator and denominator. These are crude rates and have not been standardised.

Differences in limited-duration prevalence are presented according to age in the report. Note that while age for survival and incidence statistics refers to the age at diagnosis, prevalence age refers to the age at the point in time from which prevalence was calculated, or 31 December 2008, in this report. Therefore, a person diagnosed with cancer in 1982 when they turned 50 that year would be counted as age 76 in the prevalence statistics (as at the end of 2008).

Rate ratio

This measure indicates the relative incidence rate, mortality rate or hospitalisation rate between two population groups (for example, Aboriginal and Torres Strait Islander people and non-Indigenous people). It can be calculated based on crude rates, age-standardised rates and cumulative rates. In this publication it is calculated using the age-standardised rates as:

Rate ratio = ASR of population group A / ASR of population group B

Ratios greater than 1 indicate an excess in population group A, while ratios less than 1 indicate an excess in population group B.

Relative survival

Relative survival is a measure of the survival of females with a gynaecological cancer compared with that of the general female population. It is the standard approach used by cancer registries to produce population-level survival statistics and is commonly used because it does not require accurate information on cause of death. Relative survival reflects the net survival (or excess mortality) associated with cancer after taking into account the survival experience of comparable sections of the general population.

Relative survival is calculated by dividing observed survival by expected survival, where the numerator and denominator have been matched for age, sex, calendar year, and where applicable, remoteness and socioeconomic status.

A simplified example of how relative survival is interpreted is shown in Figure B.1. Given that 6 in 10 females with a gynaecological cancer are alive 5 years after their diagnosis (observed survival of 0.6) and that 9 in 10 females from the general population are alive after the same 5 years (expected survival of 0.9), the relative survival of females with a gynaecological cancer would be calculated as 0.6 divided by 0.9, or 0.67. This means that females with a gynaecological cancer are 67% as likely to be alive for at least 5 years after their diagnosis compared with their counterparts in the general population.

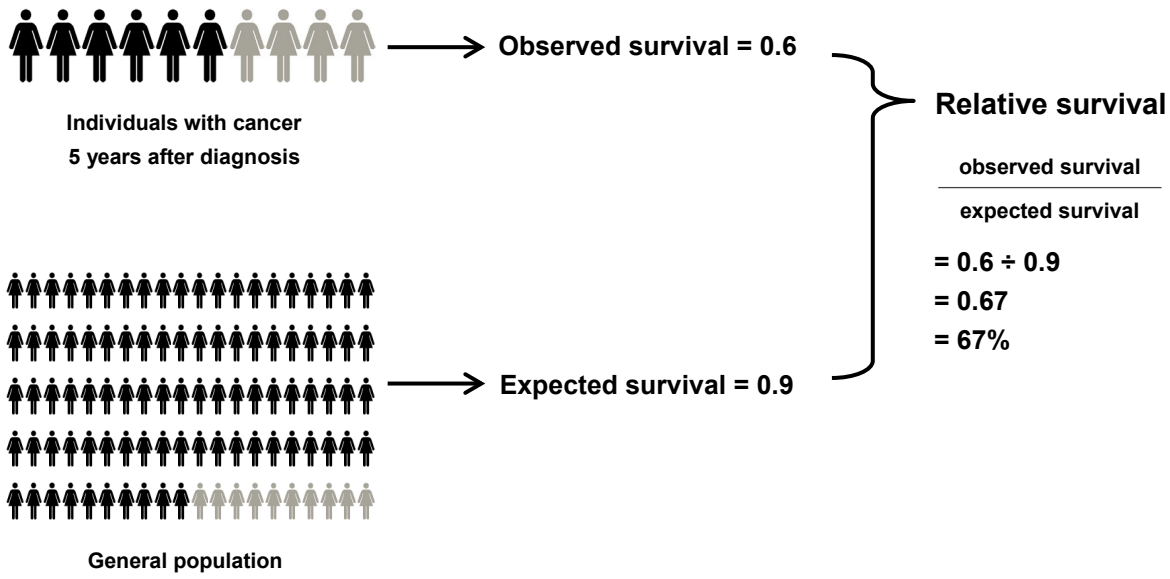


Figure B.1: A simplified example of how relative survival is calculated

All observed survival was calculated from data in the ACD. Expected survival was calculated from the life tables of the entire Australian female population, as well as the Australian female population stratified by remoteness area and socioeconomic status quintile. The Ederer II method was used to determine how long females in the general population are considered 'at risk'. In this approach, matched females in the general population are considered to be at risk until the corresponding cancer patient dies or is censored (Ederer & Heise 1959).

The survival analyses were based on records of primary, invasive gynaecological cancers diagnosed between 1982 and 2008, with the exception of analyses by remoteness area and socioeconomic status that were based on records between 1982 and 2007. At the time of analysis, these cases had been followed for deaths (from any cause) to the end of 2010. Therefore, the censoring date selected for survival analysis was 31 December 2010.

The period method was used to calculate the survival estimates in this report (Brenner & Gefeller 1996), in which estimates are based on the survival experience during a given at-risk or follow-up period. Time at risk is left-truncated at the start of the period and right-

censored at the end so that anyone who is diagnosed before this period and whose survival experience overlaps with this period would be included in the analysis.

The main follow-up period in this report was for the 5-year period 2006–2010, which was used to obtain the most up-to-date estimates of survival by age, histological subtype, remoteness and socioeconomic status. Note that 29-year survival is the longest duration that can be calculated for the period 2006–2010 based on the years of data available in the ACD at the time of analysis (1982–2008).

Trends are also analysed by five periods of follow-up: 1982–1987, 1988–1993, 1994–1999, 2000–2005 and 2006–2010. In each period, 5 or 6 years of follow-up have been combined to draw upon a greater number of cases to produce more precise estimates. Note that using the period method it is possible to calculate survival estimates for up to 6 years for the period 1982–1987, for up to 12 years for the period 1988–1993, for up to 18 years for the period 1994–1999, for up to 24 years for the period 2000–2005 and for up to 29 years for the period 2006–2010. The number of years after diagnosis that cancer patients can be followed for each period varies because the maximal follow-up time varies. For example, using the period method, the survival estimates for the 1982–1987 period were based on cases of females who were diagnosed with a gynaecological cancer between 1982 and the end of 1987 (and who were at risk of dying during this period), whereas the survival estimates for 1988–1993 were based on cases of females diagnosed from 1982 to the end of 1993 (and who were at risk of dying during this period).

All survival statistics in this report were produced using SAS statistical software and calculated using software written by Dickman (2004). Further details on the approach used to calculate the relative survival estimates, including rules that were applied during data preparation, can be found in AIHW publication *Cancer survival and prevalence in Australia, period estimates from 1982 to 2010* (AIHW 2012c).

Risk to age 85

The calculations of risk shown in this report are measures that approximate the risk of developing (or dying from) gynaecological cancer before the age of 85, assuming that the risks at the time of estimation remained throughout life. It is based on a mathematical relationship with the cumulative rate.

The cumulative rate is calculated by summing the age-specific rates for all specific age groups:

$$\text{Cumulative rate} = \frac{5 \times (\text{Sum of the age-specific rates}) \times 100}{100{,}000}$$

The factor of 5 is used to indicate the 5 years of life in each age group and the factor of 100 is used to present the result as a percentage. As age-specific rates are presented per 100,000 population, the result is divided by 100,000 to return the age-specific rates to a division of cases by population. Cumulative risk is related to cumulative rate by the expression:

$$\text{Cumulative risk} = 1 - e^{-rate/100}$$

where the rate is expressed as a percentage.

The risk is expressed as a '1 in *n*' proportion by taking the inverse of the above formula:

$$n = \frac{1}{\left(1 - e^{-rate/100}\right)}$$

For example, if *n* equals 3, then the risk of a person in the general population being diagnosed with cancer before the age of 85 years is 1 in 3. Note that these figures are average risks for the total Australian population. An individual person's risk may be higher or lower than the estimated figures, depending on their particular risk factors.

Appendix C: Data sources

To provide a comprehensive picture of national cancer statistics in this report, AIHW and external data sources were used. These are described in this appendix.

Australian Cancer Database

The Australian Cancer Database (ACD) holds information on about 1.8 million cancer cases of Australians who were diagnosed with cancer (other than basal cell and squamous cell carcinomas of the skin) between 1982 and 2007. Data from this source are used in chapters 2, 6 and 8.

The AIHW compiles and maintains the ACD, in partnership with the Australasian Association of Cancer Registries (AACR), whose member registries provide data to the AIHW on an annual basis. Each Australian state and territory has legislation that makes the reporting of all cancers (excluding basal cell and squamous cell carcinomas of the skin) mandatory. Pathology laboratories and Registrars of Births, Deaths and Marriages across Australia must report on cancer cases, as do hospitals, radiation oncology units and nursing homes in some (but not all) jurisdictions.

The data provided to the AIHW by the state and territory cancer registries include, at a minimum, an agreed set of items that provide information about the individual with the cancer, the characteristics of the cancer and, where relevant, deaths from malignant tumours (see Table C.1). In addition to the agreed set of items, registries often provide other data that are also included in the ACD. For example, data on ductal carcinoma in situ (DCIS) are not part of the agreed ACD data set but are regularly provided by the state and territory registries.

Once the data are received from the state and territory cancer registries, the AIHW assembles the data into the ACD. Internal linking checks are undertaken to identify those who had tumours diagnosed in more than one state or territory, reducing the degree of duplication within the ACD to a negligible rate. The ACD is also linked with information on deaths (from the National Death Index) to add information on which people with cancer have died (from any cause). Any conflicting information and other issues with the cancer data are resolved through consultation with the relevant state or territory cancer registry.

The registration of cases of cancer is a dynamic process and records in the state and territory cancer registries may be modified if new information is received. Thus, records in the cancer registries are always open and updated as required. For these changes to be incorporated into the ACD, a new complete file for all years of cancer data is provided by each of the jurisdictions annually. As a result, the number of cancer cases reported by the AIHW for any particular year may change slightly over time and, in addition, data published by a cancer registry at a certain point in time may differ to some extent from what is published by the AIHW (AIHW 2009).

The data in the ACD are protected both physically, with built-in computer security systems, and legislatively under the *Australian Institute of Health and Welfare Act 1987* as well as agreements with the state and territory cancer registries. More information about physical security and legislative protection of the ACD can be found in the National Cancer Statistics Clearing House protocol (AIHW 2009).

Table C.1: Agreed set of items to be provided by the states and territories to the AIHW for inclusion in the Australian Cancer Database

Person-level attributes	Tumour-level attributes
Person identification number (assigned by the state/territory)	Tumour identification number (assigned by the state/territory)
Surname	Date of diagnosis
First given name	Date of diagnosis flag
Second given name	Age at diagnosis
Third given name	ICD-O-3[(a)] topography code
Sex	ICD-O-3[(a)] morphology code
Date of birth	ICD-10[(b)] disease code
Date of birth flag	Most valid basis of diagnosis
Aboriginal and Torres Strait Islander status	Statistical local area at diagnosis
Country of birth	Postcode at diagnosis
Date of death	Melanoma thickness (mm)
Age at death	
Cause of death	

(a) International Classification of Diseases for Oncology, 3rd edition.

(b) International Statistical Classification of Diseases and Related Health Problems, 10th revision.

Source: AIHW 2009.

Data quality statement: Australian Cancer Database

Important note

In order to avoid excessive repetition in what follows, the word 'cancer' is used to mean 'cancer, excluding basal cell carcinomas of the skin and squamous cell carcinomas of the skin'. In most states and territories these two very common skin cancers are not notifiable diseases and as such are not in the scope of the Australian Cancer Database (ACD).

Summary of key issues

- All states and territories maintain a population-based cancer registry to which all cancer cases and deaths must be reported.
- The AIHW compiles the Australian Cancer Database using information from state and territory registers.
- Some duplication may occur where the same person and cancer have been registered in two or more jurisdictions. AIHW temporarily resolves these instances, but full resolution usually occurs with the following year's release.
- The level of duplication is small, about 0.17% of all records.
- Cancer registry databases change every day, adding new records and improving the quality of existing records as new information becomes available. Information on ACD records may therefore change from year to year.

Description

All states and territories have legislation that makes cancer a notifiable disease. All hospitals, pathology laboratories, radiotherapy centres and registries of births, deaths and marriages must report cancer cases and deaths to the state or territory population-based cancer registry.

Each registry supplies incidence data annually to the AIHW under an agreement between the registries and the AIHW. These data are compiled into the only repository of national cancer incidence data—the Australian Cancer Database (ACD).

Institutional environment

The Australian Institute of Health and Welfare (AIHW) is a major national agency set up by the Australian Government under the *Australian Institute of Health and Welfare Act 1987* to provide reliable, regular and relevant information and statistics on Australia's health and welfare. It is an independent statutory authority established in 1987, governed by a management board, and accountable to the Australian Parliament through the Health and Ageing portfolio.

The AIHW aims to improve the health and wellbeing of Australians through better health and welfare information and statistics. It collects and reports information on a wide range of topics and issues, ranging from health and welfare expenditure, hospitals, disease and injury, and mental health, to ageing, homelessness, disability and child protection.

The Institute also plays a role in developing and maintaining national metadata standards. This work contributes to improving the quality and consistency of national health and welfare statistics. The Institute works closely with governments and non-government organisations to achieve greater adherence to these standards in administrative data collections to promote national consistency and comparability of data and reporting.

One of the main functions of the AIHW is to work with the states and territories to improve the quality of administrative data and, where possible, to compile national datasets based on data from each jurisdiction, to analyse these datasets and disseminate information and statistics.

The *Australian Institute of Health and Welfare Act 1987*, in conjunction with compliance to the *Privacy Act 1988* (Cth), ensures that the data collections managed by the AIHW are kept securely and under the strictest conditions with respect to privacy and confidentiality.

For further information see the AIHW website <www.aihw.gov.au>.

The AIHW has been maintaining the ACD since 1986.

Timeliness

The current version of the ACD contains data on all cancer cases diagnosed between 1982 and 2008.

Each jurisdictional cancer registry supplies data annually to the AIHW. Because each jurisdiction operates on its own data compilation and reporting cycle, the ACD cannot be fully compiled until the final jurisdiction supplies its data.

Accessibility

The AIHW website provides cancer incidence and mortality data that can be downloaded free of charge. Numerous reports, including the biennial *Cancer In Australia* are published and are available on the AIHW website where they can be downloaded without charge.

Users can request data not available online or in reports via the Cancer and Screening Unit Australian Institute of Health and Welfare on (02) 6244 1000 or via email to <cancer@aihw.gov.au>. Requests that take longer than half an hour to compile are charged for on a cost-recovery basis. General enquiries about AIHW publications can be made to the Communications, Media and Marketing Unit on (02) 6244 1032 or via email to <info@aihw.gov.au>.

Researchers who are following a cohort of people enrolled in a longitudinal study of health outcomes can request the AIHW to undertake data linkage of their cohort to the ACD. Such requests must be approved by the AIHW Ethics Committee as well as the ethics committees governing access to the state or territory cancer registries.

Interpretability

Information on the ACD is available on the AIHW website.

While numbers of new cancers are easy to interpret, other statistical calculations (for example, calculations of age-standardised rates and confidence intervals) are more complex and their concepts may be confusing to some users. In most publications there is an appendix on statistical methods as well as technical notes.

Relevance

The ACD is highly relevant for monitoring trends in cancer incidence. The data are used for many purposes: by policy-makers to evaluate health intervention programs and as background data for health labour force planning, health expenditure, etc.; by pharmaceutical companies to assess the size of the market for new drugs; by researchers to explore the epidemiology of cancer; by insurance companies to evaluate the risk of people being diagnosed with cancer.

The ACD contains information on all reported cancer cases and deaths in Australia. Data can be provided at state and territory level and at Remoteness Area level.

The 3rd edition of the International Classification of Diseases for Oncology (ICD-O-3) is used to classify cancer cases. Data can also be provided classified according to the 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).

While all state and territory cancer registries collect information on Indigenous status, in some jurisdictions the level of identification of Indigenous Australians is not considered to be sufficient to enable analysis.

The ACD also contains the name and date of birth of each person who has been diagnosed with cancer. This allows researchers who have enrolled people in a study to link their database to the ACD in order to find out which of their enrolees have been diagnosed with cancer, what kind of cancer, and when. (Such data linkage can only be undertaken after receiving approvals from various ethics committees.) This kind of research gives insight into cancer risk factors. Data linkage is also undertaken when a researcher has been contracted to investigate a potential cancer cluster in a workplace or small area.

Accuracy

The publication *Cancer incidence in five continents* is issued approximately every five years as a collaborative effort by the International Agency for Research on Cancer (IARC) and the worldwide network of cancer registries. Australia's cancer registries continue to pass IARC's numerous tests for data quality. Details of the tests and Australia's cancer registries' results

in them can be found in the above-mentioned book and appendices of the registries' annual incidence reports.

Each year when all the registries' new data have been compiled into the new ACD a data linkage process called the national deduplication is undertaken. This process detects instances where the same person and cancer have been registered in two or more jurisdictions. This could happen, for example, when a person attends hospitals in different jurisdictions. All such instances that are found are temporarily resolved at the AIHW by removing one record while the relevant jurisdictions are notified of the situation so that they can determine in which jurisdiction the person was a usual resident at the time of diagnosis. Their resolution will flow through to the ACD in the next year's data supply. In recent years the national deduplication has resulted in the removal of about 3,500 records from the ACD, which is about 0.17% of all records supplied by the jurisdictions.

While all state and territory cancer registries collect information on Indigenous status, in some jurisdictions the level of identification of Indigenous Australians is not considered to be sufficient to enable analysis. Data for four states and territories—New South Wales, Queensland, Western Australia and the Northern Territory—are considered suitable for analysis.

Cancer registry databases change every day, and not just because new records are added. Existing records are changed if new, more precise, information about the diagnosis becomes available. Also, any typographical errors that are discovered by routine data checking procedures are corrected by referring to the source documentation. Finally, existing records can be deleted if it is discovered that the initial diagnosis of cancer was incorrect—for example, the tumour was in fact benign, or the person is found to be not a resident of that state or territory. As a result of all these issues, the number of cancer cases reported by AIHW for any particular year may change slightly over time, and data published by a cancer registry at a certain point in time may differ slightly from what is published by the AIHW at a different time.

Coherence

Cancer data are reported and published annually by the AIHW. While there are sometimes changes to coding for particular cancers, it is possible to map coding changes to make meaningful comparisons over time.

Burden of disease data

Information on the burden of disease from gynaecological cancer is in Chapter 7.

The first study that provided an overview of disease and injury burden in Australia was published in 1999 (AIHW: Mathers et al. 1999). The second and most recent study was published in 2007 and provides burden of disease information in relation to 2003 as well as backwards and forwards projections from 1993 to 2023 (Begg et al. 2007). The summary measure used in that study is the disability-adjusted life year, or DALY, with this term used interchangeably with 'burden of disease'. The DALY quantifies the gap between a population's actual health status and some 'ideal' or reference status, with time (either lived in health states or lost through premature death and illness) being the unifying 'currency' for combining the impact of mortality and non-fatal health outcomes.

A DALY for a disease or health condition is calculated as the sum of the years of life lost due to premature mortality (YLL) in the population and the equivalent 'healthy' years lost due to disability (YLD) for incident cases of the health condition such that:

$$DALY = YLL + YLD$$

where

YLL = number of deaths x standard life expectancy at age of death, and

YLD = incidence x duration x severity weight.

Further information about how the DALY was derived, as well as further information on interpretation of burden of disease data, can be found in Begg et al. (2007).

This report presents the projected burden of disease due to gynaecological cancer for 2012. These data were estimated by Begg et al. and associates using 2003 baseline data. More information about how these projection estimates were derived can be found in the report by Begg et al. (2007).

Disease Expenditure Database

Expenditure data are used in Chapter 5 to describe health expenditure on selected gynaecological cancers. These data were obtained from the Disease Expenditure Database, which is maintained by the AIHW.

Since 1984, the AIHW has had the responsibility for developing estimates of national health expenditure. Data are obtained from a variety of sources in the public and private sectors, with most provided by the ABS, the Australian Government Department of Health and Ageing, and state and territory health authorities. Other major sources are the Department of Veterans' Affairs, the Private Health Insurance Administration Council, Comcare, and the major worker's compensation and compulsory third-party motor vehicle insurers in each state and territory.

The definition of 'all cancers' used in Chapter 5 is somewhat different from that used in earlier chapters, as it only includes the ICD-10 'C' codes and excludes those malignant cancers with the ICD-10 'D' codes (such as polycythaemia vera). Separate expenditure data were not readily available for the required subset of ICD-10 'D' cancers. Since the forms of malignant cancers covered by the ICD-10 'D' codes are not common (AIHW & AACR 2010), their exclusion is not expected to have a large effect on the health expenditure estimates shown in this report.

Further information about the Disease Expenditure Database can be found in the annual health expenditure reports published by the AIHW (AIHW 2005, 2010b).

GLOBOCAN

One of the main sources of internationally comparable data on cancer is the GLOBOCAN database, which is prepared by the International Agency for Research on Cancer (IARC) (Ferlay et al. 2010a). The IARC collates cancer incidence and mortality data from cancer registries around the world and uses those data to produce estimates for a 'common year'. The most recent GLOBOCAN estimates for which data could be obtained are for 2008. GLOBOCAN data are in Chapters 2, 8 and 9.

In the GLOBOCAN database, age-standardised incidence and mortality rates are provided, with the data standardised to the 1966 WHO World Standard Population. However, the database does not include confidence intervals. To provide some guidance as to whether the differences were statistically significant, the AIHW calculated 'approximate' confidence intervals (with the method for doing so explained in Appendix B).

National Death Index

Cancer incidence data were linked to the National Death Index (NDI) to provide survival and prevalence information (Chapters 6 and 8). The NDI is a database that is maintained by the AIHW; it contains information on all deaths in Australia since 1980.

The NDI database comprises the following variables for each deceased person: name; alternative names (including maiden names); date of birth (or estimated year of birth), age at death, sex, date of death, marital status, Aboriginal and Torres Strait Islander status, and state or territory of registration. Cause of death information in a coded form is also available. For records to 1996, only the code for underlying cause of death is available. For records from 1997, the codes for the underlying cause of death and all other causes of death mentioned on the death certificate are available.

This database exists solely for research linkage purposes, such as to gain epidemiological mortality information on individuals in a particular cohort, or with a known disease state. Ethics approval is required for the NDI to be used for any particular research project.

Data quality statement: National Death Index (NDI)

Summary of key issues

- Deaths occurring in Australia are registered and maintained by the Registrars of Births, Deaths and Marriages in each state and territory. These registration details are then provided to the AIHW and are assumed to be as correct as possible. The AIHW has no ability to confirm the correctness and completeness of these data.
- It is expected that some death registration details may contain errors and some information that is critical might be missing. The AIHW uses a probabilistic data linking technique to link researchers' data to the NDI. Consequently, the linkage result is an indication or index of death, rather than an absolute fact of death.
- Incorrect linkages can result because of errors or incorrect details in personal information supplied when deaths are registered. Examples of such errors are: the changed surname when women marry is not provided; given names are transposed, incorrectly spelt, or partly replaced by nicknames; the date of birth is wrong, the birth day of an elderly relative might be known, but not the year of birth.
- Linkages are tailored to the needs of the researcher, in terms of the matching tightness.

Description

The National Death Index (NDI) is a database, housed at the Australian Institute of Health and Welfare (AIHW), which contains records of all deaths occurring in Australia since 1980. The data are obtained from the Registrars of Births, Deaths and Marriages in each state and territory. The Index is designed to facilitate the conduct of epidemiological studies and its use is strictly confined to medical research.

Researchers undertaking such studies need to follow up groups of persons who, for example, take part in clinical trials, or who have suffered from particular diseases, or are known to have been exposed to specific hazards, in order to determine whether death has occurred, and if so to analyse the survival rate and causes of death.

Each Registry records only those deaths that occur in its own state or territory, and if a person dies in a state or territory other than the one in which the circumstances being studied were experienced, without the NDI the researchers would have to contact every Registry to determine whether or not a death has been registered.

Institutional environment

The Australian Institute of Health and Welfare (AIHW) is a major national agency set up by the Australian Government under the *Australian Institute of Health and Welfare Act 1987* to provide reliable, regular and relevant information and statistics on Australia's health and welfare. It is an independent statutory authority established in 1987, governed by a management board, and accountable to the Australian Parliament through the Health and Ageing portfolio.

The AIHW aims to improve the health and wellbeing of Australians through better health and welfare information and statistics. It collects and reports information on a wide range of topics and issues, ranging from health and welfare expenditure, hospitals, disease and injury, and mental health, to ageing, homelessness, disability and child protection.

The Institute also plays a role in developing and maintaining national metadata standards. This work contributes to improving the quality and consistency of national health and welfare statistics. The Institute works closely with governments and non-government organisations to achieve greater adherence to these standards in administrative data collections to promote national consistency and comparability of data and reporting.

One of the main functions of the AIHW is to work with the states and territories to improve the quality of administrative data and, where possible, to compile national datasets based on data from each jurisdiction, to analyse these datasets and disseminate information and statistics.

The *Australian Institute of Health and Welfare Act 1987*, in conjunction with compliance to the *Privacy Act 1988*, (Cth) ensures that the data collections managed by the AIHW are kept securely and under the strictest conditions with respect to privacy and confidentiality.

For further information see the AIHW website <www.aihw.gov.au>.

Timeliness

The Registrars of Births, Deaths and Marriages in each state and territory provide to the AIHW on a monthly basis, the details of deaths registered in a given month, as soon as that month ends, usually within the first two weeks of the following month.

In most cases, deaths that were registered in a given month did happen in that month; however, some deaths are registered many years after death occurs, for example in cases when the remains are found.

Cause of death information is derived from the National Mortality Database, which records the underlying and other causes of death as ICD10 codes derived by the Australian Bureau of Statistics from the death certificates. This information is generally not available for the most recent two years of data.

The latest and the most current NDI data are available to link to the researchers' cohort.

Accessibility

Researchers can access the National Death Index if their study generally meets the following set of conditions:

- the study focuses on health issues;
- the study has been approved by the researcher's host institution ethics committee and the AIHW Ethics Committee. Typically this review concentrates on the issues of public interest and use of confidential information;
- the study is scientifically valid (as judged by a peer review process);
- the study results will be placed in the public domain (for example, published papers or books, conference presentations, feedback to patients);
- the study will not break confidentiality provisions;
- the study investigators comply with the AIHW legislation under which the data are released
- the data will be secured in an environment that guarantees confidentiality of individuals' data.

Given that the study can meet these conditions, it can be best progressed by researchers discussing feasibility and likely costs with one of the contact officers in the AIHW. To formally apply for NDI use, researchers can obtain from the Institute's web page <www.aihw.gov.au/national-death-index/>, an *NDI data provision package*. This package gives instructions as to what data formats are required, a description of the NDI, the legislation covering the use of NDI data and the AIHW Ethics Committee application forms. These forms contain questions relating to the objectives of the project, the security of the confidential information, the intended release of the study results and the public benefit that might be gained from conducting the study. The Ethics Committee will consider these factors in determining whether to grant approval to the project. The Committee meets four times a year. Once a study is given an Ethics Committee certificate the project can proceed.

Interpretability

The NDI database held by the AIHW comprises such variables for each deceased person as: name, alternative names (including maiden names), dates of birth (or estimated year of birth), age at death, sex, date of death, marital status, indigenous status, state or territory of registration. In some records the additional information of address and the text related to cause of death is available.

Cause of death information in a coded form is derived by linking the National Death Index registration numbers for deaths with the National Mortality Data Base. This latter database records underlying cause of death in ICD10 codes as derived by Australian Bureau of Statistics from the death certificates. This information is generally not available for the most recent two years of data.

A description of the NDI is included in the application package that researchers use when applying to link their data to the NDI. The researchers are made aware of the probabilistic nature of the data linkage method and are instructed to treat the linkage results as indication or index of death, rather than as an absolute fact.

Relevance

The National Death Index contains records of all deaths that occurred in Australia since 1980 and up to the most recent month past.

Researchers are made aware of the limitation of the probabilistic data linkage method and that they need to provide sufficient details of their subjects for the technique to be effective.

Accuracy

Deaths occurring in Australia are registered and maintained by the Registrars of Births, Deaths and Marriages in each state and territory. These registration details are then provided to the AIHW and are assumed to be as correct as possible. The AIHW has no ability to confirm the correctness and completeness of these data.

It is expected that some death registration details may contain errors and some information that is critical might be missing. The AIHW uses a probabilistic data linking technique to link researchers' data to the NDI. Consequently, the linkage result is an indication or index of death, rather than an absolute fact of death. These issues are communicated to the researchers.

Incorrect linkages can result because of errors or incorrect details in personal information supplied when deaths are registered. Examples of such errors are: the changed surname when women marry is not provided; given names are transposed, incorrectly spelt, or partly replaced by nicknames; the date of birth is wrong; the birth day of an elderly relative might be known, but not the year of birth.

Linkages are tailored to the needs of the researcher, in terms of the matching tightness. For example some studies require that the matching be very precise and the researchers will only accept matches that are identical in terms of name, date of birth/death and sex, whereas others will allow for variations in names and dates at least. These scenarios are catered for by using probabilistic record linkage software. The AIHW undertakes the linkage and in some cases clerical reviews of marginal matches. Reports of the final matches are then provided to the researchers. The linkage result is an indication or index of death, rather than an absolute fact of death.

Coherence

Only a small number of variables, such as names, sex, date of birth, date of death and components of address, are used from the NDI for the linking purpose. Although the file formats in which data are provided by the Registrars change from time to time, the contents of data remains constant. To ensure consistency, a substantial cleaning and standardisation of data takes place before loading to the database. For example, names are converted to upper case, dates are standardised to 'yyyymmdd' format and gender is set to '1' for males and '2' for females.

The one serious exception from the consistency over time is coded cause of death. This field was derived by Australian Bureau of Statistics from the death certificates and is obtained from the National Mortality Data Base, by linking it to the NDI. The causes of death are coded using the International Classification of Diseases (ICD) which originated in the 1800s and undergoes revisions from time to time. The current version is ICD-10. It is critical to know the version of the ICD that relates to given data. This information and the description of data items are provided to the researchers with the linking results.

National Hospital Morbidity Database

Data from the National Hospital Morbidity Database (NHMD) are used in Chapter 4 to examine the number of hospitalisations due to gynaecological cancers. The NHMD contains demographic, diagnostic, procedural and duration-of-stay information on episodes of care for patients admitted to hospital. This annual collection is compiled and maintained by the AIHW, using data supplied by state and territory health authorities. Information from almost all hospitals in Australia is included in the database: public acute and public psychiatric hospitals, private acute and private psychiatric hospitals, and private free-standing day hospital facilities. The database is episode-based and it is not possible to count patients individually.

For 2009–10, all public hospitals were included except for a small mothercraft hospital in the Australian Capital Territory. Private hospital data were not provided for private free-standing day facilities in the Australian Capital Territory and the Northern Territory, and for one private free-standing day facility in Tasmania.

The majority of private hospitals were also included. Most of the private facilities that did not report to the NHMD were free-standing day hospitals. For 2009–10, data were not provided for private day hospitals in the Australian Capital Territory and the Northern Territory, and for a small private hospital in Victoria. Victoria estimated that its data were essentially complete. Counts of private hospital hospitalisations in this report are therefore likely to be underestimates of the actual counts.

Comprehensive hospital statistics from this database are released by the AIHW annually (AIHW 2011c). Further information about this data source is available in those reports.

Data are held in the NHMD for the years from 1993–94 to 2009–10. In this report data on cancer-related hospitalisations are presented for 2009–2010, with time trends going back to 2000–01.

The hospitalisations data in this report exclude those hospitalisations for which the care type was reported as newborn (unqualified days only), or records for hospital boarder or posthumous organ procurement. Thus, it includes all other admitted care hospitalisations, including those with a care type of acute care, rehabilitation care and palliative care.

National Mortality Database

Data from the National Mortality Database (NMD) are used in Chapter 9 to provide statistical information on mortality in Australia due to cancer.

The NMD, is maintained by the AIHW and comprises de-identified information for all deaths in Australia from 1964 to 2007. Information on the characteristics of the deceased and the causes of death are provided by the Registrars of Births, Deaths and Marriages and the National Coronial Information System to the ABS for compilation of national data. In this report data presented for the 26 years from 1982 to 2007 and data for deriving projection estimates were sourced from the AIHW NMD.

The information on cause of death is coded by the Australian Bureau of Statistics (ABS) to an international standard, the International Classification of Disease and Related Health Problems, currently the tenth version (ICD-10). Deaths are coded to reflect the underlying cause of death. Since 1997, multiple causes of death have been available in the NMD.

The National Mortality Database indicates the year of registration of death and also the year of occurrence of death. For this report, mortality data are shown based on the year of occurrence of death, except for the most recent year (namely, 2007) where the number of people whose death was registered is used. Previous investigation has shown that the year of death and its registration coincide for the most part.

The most recent mortality data for Australia are readily available in tabulated format (ABS 2011). However, for some analyses of mortality, data are required at the unit-record level, that is, where information about each individual death is available for analysis. This enables grouping of records by specific causes, specific age categories and other characteristics, such as Indigenous status. Due to changes in the process for releasing unit-record mortality data to users (including the AIHW), the most recent unit-record-level data available at the time of writing were for deaths reported in 2007. As a result, the timeliness of some mortality analyses has diminished substantially in Australia (AIHW 2012d).

Information about an individual's socioeconomic status is not available in Australian mortality data. Where possible, national profiles of differences in mortality by socioeconomic status are undertaken using a proxy measure that describes the socioeconomic status of the area that the deceased person usually lived in rather than the socioeconomic status of the individual (AIHW 2012d).

Population data

Throughout this report, population data were used to derive rates of, for example, gynaecological cancer incidence and mortality. The data were sourced from the ABS Demography section using the most up-to-date estimates available at the time of analysis.

To derive their estimates of the resident populations, the ABS uses the 5-yearly Census of Population and Housing data and adjusts it as follows:

- All respondents in the Census are placed in their state or territory, statistical local area and postcode of usual residence; overseas visitors are excluded.
- An adjustment is made for persons missed in the Census (about 2%).
- Australians temporarily overseas on Census night are added to the usual residence Census count.

Estimated resident populations are then updated each year from the census data using indicators of population change, such as births, deaths and net migration. More information is available from the ABS website <www.abs.gov.au>.

For the Aboriginal and Torres Strait Islander comparisons in this report (Chapter 2, 4, 8 and 9), the most recently released Indigenous experimental estimated resident populations from the ABS were used (ABS 2009b). Those were based on the 2006 Census of Population and Housing.

Appendix D: Additional tables

Additional tables for Chapter 2: Incidence of gynaecological cancer

Table D2.1: Incidence of ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by age at diagnosis, Australia, 2008

	Ovarian cancer			Uterine cancer			Cervical cancer			All gynaecological cancers combined		
Age group (years)	Number of cases	Age-specific rate[(a)]	95% CI	Number of cases	Age-specific rate[(a)]	95% CI	Number of cases	Age-specific rate[(a)]	95% CI	Number of cases	Age-specific rate[(a)]	95% CI
<30	36	0.8	0.6–1.2	10	0.2	0.1–0.4	78	1.8	1.4–2.2	129	3.0	2.5–3.5
30–34	12	1.6	0.8–2.8	24	3.2	2.1–4.8	79	10.7	8.4–13.3	125	16.9	14.0–20.1
35–39	35	4.3	3.0–6.0	30	3.7	2.5–5.3	96	11.9	9.6–14.5	175	21.7	18.6–25.1
40–44	46	6.0	4.4–8.0	64	8.4	6.5–10.7	94	12.3	9.9–15.1	220	28.8	25.1–32.9
45–49	99	12.6	10.3–15.4	116	14.8	12.2–17.7	68	8.7	6.7–11.0	320	40.8	36.5–45.5
50–54	109	15.3	12.6–18.5	214	30.1	26.2–34.4	70	9.8	7.7–12.4	424	59.6	54.1–65.6
55–59	155	23.9	20.3–28.0	282	43.6	38.6–49.0	61	9.4	7.2–12.1	540	83.4	76.5–90.8
60–64	168	29.8	25.5–34.7	335	59.5	53.3–66.2	42	7.5	5.4–10.1	594	105.4	97.1–114.3
65–69	124	29.5	24.5–35.2	285	67.8	60.2–76.2	50	11.9	8.8–15.7	505	120.2	109.9–131.1
70–74	124	36.1	30.0–43.0	237	68.9	60.4–78.3	32	9.3	6.4–13.1	444	129.1	117.4–141.7
75–79	133	44.8	37.5–53.0	158	53.2	45.2–62.1	38	12.8	9.0–17.6	381	128.2	115.6–141.7
80–84	112	45.5	37.5–54.8	146	59.3	50.1–69.8	33	13.4	9.2–18.8	339	137.8	123.5–153.2
85+	119	49.9	41.3–59.7	115	48.2	39.8–57.9	37	15.5	10.9–21.4	338	141.7	127.0–157.7
All ages[(b)]	**1,272**	**10.6**	**10.0–11.2**	**2,016**	**16.8**	**16.1–17.6**	**778**	**7.0**	**6.5–7.5**	**4,534**	**38.2**	**37.1–39.3**

(a) The rates are expressed per 100,000 females.

(b) The rates shown in this row were age-standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.

Source: AIHW Australian Cancer Database 2008.

Table D2.2: Incidence of ovarian, uterine and cervical cancer, and all gynaecological cancers combined, Australia, 1982 to 2008

	Ovarian cancer			Uterine cancer			Cervical cancer			All gynaecological cancers		
Years	Cases	ASR[(a)]	95% CI	Cases	ASR[(a)]	95% CI	Cases	ASR[(a)]	95% CI	Cases	ASR[(a)]	95% CI
1982	835	12.5	11.6–13.4	941	13.8	13.0–14.8	965	14.2	13.3–15.2	2,944	43.6	42.0–45.2
1983	856	12.4	11.6–13.3	933	13.6	12.7–14.5	994	14.3	13.5–15.3	2,995	43.5	41.9–45.1
1984	874	12.5	11.7–13.4	1,010	14.2	13.4–15.1	1,008	14.2	13.3–15.1	3,133	44.3	42.8–45.9
1985	881	12.3	11.5–13.2	1,021	14.3	13.4–15.2	1,058	14.6	13.8–15.6	3,182	44.4	42.8–46.0
1986	873	11.9	11.1–12.7	1,079	14.7	13.9–15.7	1,020	14.0	13.1–14.9	3,212	43.8	42.3–45.4
1987	904	12.1	11.3–12.9	1,073	14.3	13.4–15.2	1,099	14.4	13.5–15.3	3,312	43.9	42.4–45.4
1988	897	11.7	11.0–12.5	1,072	14.1	13.3–15.0	1,063	13.6	12.8–14.4	3,265	42.4	40.9–43.9
1989	1,017	12.8	12.0–13.6	1,039	13.4	12.6–14.2	1,075	13.5	12.7–14.4	3,368	42.7	41.2–44.2
1990	1,012	12.6	11.9–13.4	1,083	13.6	12.8–14.5	1,087	13.5	12.7–14.3	3,417	42.7	41.2–44.1
1991	1,015	12.5	11.7–13.3	1,174	14.4	13.6–15.2	1,094	13.3	12.5–14.1	3,591	43.8	42.4–45.3
1992	1,037	12.5	11.8–13.3	1,242	15.1	14.2–15.9	1,025	12.2	11.4–13.0	3,576	43.0	41.5–44.4
1993	1,079	12.6	11.9–13.4	1,245	14.7	13.9–15.6	1,015	11.9	11.2–12.7	3,625	42.5	41.2–44.0
1994	1,066	12.3	11.6–13.1	1,355	15.7	14.8–16.5	1,145	13.1	12.3–13.9	3,867	44.5	43.1–45.9
1995	1,076	12.2	11.4–12.9	1,352	15.4	14.5–16.2	962	10.7	10.1–11.5	3,692	41.6	40.2–42.9
1996	1,077	11.9	11.2–12.6	1,315	14.7	13.9–15.5	941	10.4	9.7–11.0	3,644	40.3	39.0–41.6
1997	1,060	11.4	10.7–12.1	1,385	15.0	14.2–15.8	811	8.7	8.2–9.4	3,607	38.8	37.5–40.1
1998	1,125	11.8	11.1–12.5	1,408	14.9	14.2–15.7	873	9.2	8.6–9.8	3,728	39.2	37.9–40.5
1999	1,139	11.7	11.0–12.4	1,440	14.8	14.1–15.6	801	8.3	7.8–8.9	3,718	38.2	37.0–39.4
2000	1,147	11.4	10.8–12.1	1,586	16.0	15.2–16.8	770	7.8	7.3–8.4	3,837	38.5	37.3–39.7
2001	1,131	11.0	10.3–11.6	1,545	15.2	14.5–16.0	741	7.4	6.9–7.9	3,788	37.1	35.9–38.3
2002	1,237	11.7	11.1–12.4	1,668	16.0	15.2–16.8	691	6.8	6.3–7.3	3,952	37.8	36.7–39.0
2003	1,140	10.7	10.1–11.3	1,706	16.0	15.3–16.8	728	7.0	6.5–7.6	3,929	36.9	35.8–38.1
2004	1,279	11.6	11.0–12.3	1,815	16.6	15.8–17.4	726	6.9	6.4–7.5	4,196	38.6	37.4–39.7
2005	1,240	11.0	10.4–11.7	1,843	16.5	15.7–17.3	736	6.9	6.4–7.4	4,246	38.2	37.0–39.3
2006	1,254	11.0	10.4–11.6	1,874	16.4	15.7–17.2	720	6.7	6.2–7.2	4,290	37.9	36.7–39.0
2007	1,276	10.9	10.3–11.5	1,946	16.5	15.8–17.3	745	6.8	6.3–7.3	4,411	37.9	36.8–39.1
2008	1,272	10.6	10.0–11.2	2,016	16.8	16.1–17.6	778	7.0	6.5–7.5	4,534	38.2	37.1–39.3

(a) The rates were standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.
Source: AIHW Australian Cancer Database 2008.

Table D2.3: Incidence of ovarian cancer, by age at diagnosis, 1982 to 2008

	<50 years		50–69 years		70+ years		All ages	
Year	ASR[(a)]	95% CI	ASR[(a)]	95% CI	ASR[(a)]	95% CI	ASR[(a)]	95% CI
1982	4.0	3.4–4.7	32.5	29.5–35.7	36.0	31.3–41.2	12.5	11.6–13.4
1983	3.7	3.2–4.3	30.7	27.9–33.8	41.3	36.3–46.7	12.4	11.6–13.3
1984	3.8	3.3–4.5	30.5	27.6–33.5	41.6	36.7–46.9	12.5	11.7–13.4
1985	4.1	3.5–4.7	28.6	25.8–31.5	42.2	37.3–47.5	12.3	11.5–13.2
1986	4.0	3.5–4.6	28.0	25.3–30.9	39.2	34.6–44.2	11.9	11.1–12.7
1987	3.4	3.0–4.0	30.7	27.9–33.7	39.6	35.1–44.6	12.1	11.3–12.9
1988	3.8	3.3–4.4	28.0	25.4–30.9	38.8	34.4–43.7	11.7	11.0–12.5
1989	3.6	3.1–4.1	32.0	29.1–35.0	44.3	39.6–49.4	12.8	12.0–13.6
1990	4.0	3.5–4.6	28.2	25.6–31.1	46.8	42.0–52.0	12.6	11.9–13.4
1991	3.6	3.1–4.1	29.8	27.1–32.7	45.0	40.4–50.0	12.5	11.7–13.3
1992	4.1	3.6–4.6	29.8	27.1–32.7	41.9	37.5–46.6	12.5	11.8–13.3
1993	4.0	3.5–4.5	28.8	26.2–31.6	45.5	40.9–50.3	12.6	11.9–13.4
1994	3.5	3.1–4.0	30.5	27.8–33.3	42.5	38.2–47.2	12.3	11.6–13.1
1995	3.5	3.0–3.9	28.0	25.5–30.7	46.5	42.1–51.3	12.2	11.4–12.9
1996	3.2	2.8–3.7	26.4	24.0–29.1	48.5	44.0–53.3	11.9	11.2–12.6
1997	3.1	2.7–3.6	26.0	23.6–28.5	44.8	40.6–49.4	11.4	10.7–12.1
1998	3.1	2.7–3.6	27.6	25.2–30.2	45.8	41.6–50.3	11.8	11.1–12.5
1999	3.1	2.7–3.6	27.2	24.8–29.7	45.3	41.2–49.8	11.7	11.0–12.4
2000	3.0	2.6–3.4	25.6	23.4–28.0	47.2	43.0–51.7	11.4	10.8–12.1
2001	2.7	2.4–3.2	24.9	22.7–27.2	45.6	41.5–50.0	11.0	10.3–11.6
2002	3.2	2.8–3.7	25.6	23.4–28.0	48.7	44.6–53.2	11.7	11.1–12.4
2003	3.0	2.6–3.4	24.7	22.6–26.9	41.0	37.1–45.1	10.7	10.1–11.3
2004	3.3	2.9–3.7	25.5	23.4–27.8	47.4	43.3–51.8	11.6	11.0–12.3
2005	2.9	2.5–3.3	24.7	22.6–26.8	45.6	41.6–49.9	11.0	10.4–11.7
2006	3.1	2.7–3.5	25.2	23.2–27.4	42.1	38.3–46.1	11.0	10.4–11.6
2007	3.4	3.0–3.8	23.6	21.6–25.6	42.8	39.0–46.8	10.9	10.3–11.5
2008	3.0	2.6–3.4	23.3	21.4–25.3	42.5	38.8–46.5	10.6	10.0–11.2

(a) The age-standardised rates were standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.

Source: AIHW Australian Cancer Database 2008.

Table D2.4: Incidence of uterine cancer, by age at diagnosis, 1982 to 2008

	<50 years		50–69 years		70+ years		All ages	
Year	ASR[(a)]	95% CI	ASR[(a)]	95% CI	ASR[(a)]	95% CI	ASR[(a)]	95% CI
1982	2.6	2.2–3.2	39.2	35.9–42.6	47.1	41.6–53.0	13.8	13.0–14.8
1983	2.6	2.1–3.1	36.8	33.6–40.1	50.0	44.5–56.0	13.6	12.7–14.5
1984	2.5	2.1–3.0	42.3	39.0–45.8	45.6	40.4–51.2	14.2	13.4–15.1
1985	2.8	2.3–3.3	38.6	35.4–42.0	52.2	46.7–58.0	14.3	13.4–15.2
1986	2.8	2.3–3.3	41.9	38.6–45.4	50.0	44.8–55.7	14.7	13.9–15.7
1987	2.3	1.9–2.8	40.7	37.4–44.1	51.3	46.1–56.9	14.3	13.4–15.2
1988	2.6	2.2–3.1	40.2	37.0–43.6	48.3	43.3–53.8	14.1	13.3–15.0
1989	2.4	2.0–2.8	38.3	35.2–41.6	46.1	41.3–51.3	13.4	12.6–14.2
1990	2.4	2.0–2.9	35.8	32.8–39.0	54.0	48.8–59.6	13.6	12.8–14.5
1991	2.2	1.8–2.6	39.7	36.6–43.0	55.4	50.3–61.0	14.4	13.6–15.2
1992	2.4	2.0–2.9	42.9	39.7–46.3	54.3	49.2–59.6	15.1	14.2–15.9
1993	2.5	2.1–2.9	40.9	37.8–44.2	54.4	49.5–59.8	14.7	13.9–15.6
1994	2.7	2.3–3.2	42.7	39.5–46.0	59.2	54.1–64.6	15.7	14.8–16.5
1995	2.5	2.1–2.9	41.9	38.8–45.2	59.0	54.0–64.3	15.4	14.5–16.2
1996	2.6	2.2–3.0	39.3	36.3–42.4	56.3	51.5–61.5	14.7	13.9–15.5
1997	2.8	2.4–3.2	41.6	38.6–44.8	53.4	48.7–58.3	15.0	14.2–15.8
1998	2.5	2.1–2.9	41.6	38.7–44.8	55.0	50.3–59.9	14.9	14.2–15.7
1999	2.5	2.1–2.9	39.9	37.0–42.9	57.6	52.9–62.6	14.8	14.1–15.6
2000	2.6	2.3–3.1	45.0	42.0–48.1	58.1	53.5–63.1	16.0	15.2–16.8
2001	2.6	2.2–3.0	43.2	40.3–46.2	54.6	50.1–59.4	15.2	14.5–16.0
2002	2.8	2.4–3.2	44.9	42.0–48.0	57.1	52.5–61.9	16.0	15.2–16.8
2003	2.9	2.5–3.3	45.8	42.9–48.9	55.3	50.8–60.1	16.0	15.3–16.8
2004	3.0	2.6–3.4	45.9	43.0–48.9	60.4	55.7–65.3	16.6	15.8–17.4
2005	2.6	2.2–3.0	46.6	43.7–49.5	60.9	56.2–65.9	16.5	15.7–17.3
2006	2.9	2.5–3.3	45.6	42.8–48.5	60.0	55.3–64.9	16.4	15.7–17.2
2007	2.6	2.2–3.0	48.5	45.7–51.4	57.4	52.9–62.2	16.5	15.8–17.3
2008	3.2	2.8–3.7	46.7	44.0–49.6	59.3	54.8–64.1	16.8	16.1–17.6

(a) The age-standardised rates were standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.

Source: AIHW Australian Cancer Database 2008.

Table D2.5: Incidence of cervical cancer, by age at diagnosis, 1982 to 2008

	<50 years		50–69 years		70+ years		All ages	
Year	ASR[(a)]	95% CI	ASR[(a)]	95% CI	ASR[(a)]	95% CI	ASR[(a)]	95% CI
1982	9.5	8.6–10.4	27.1	24.4–30.0	23.8	20.0–28.2	14.2	13.3–15.2
1983	9.9	9.0–10.9	25.5	22.9–28.3	25.0	21.1–29.3	14.3	13.5–15.3
1984	9.9	9.0–10.8	23.6	21.1–26.3	27.5	23.5–31.9	14.2	13.3–15.1
1985	10.2	9.4–11.2	26.0	23.4–28.9	24.6	21.0–28.8	14.6	13.8–15.6
1986	10.5	9.6–11.4	22.1	19.7–24.8	23.3	19.8–27.3	14.0	13.1–14.9
1987	10.7	9.9–11.7	21.4	19.1–24.0	27.7	23.9–31.9	14.4	13.5–15.3
1988	10.3	9.5–11.2	21.2	18.9–23.7	22.8	19.4–26.7	13.6	12.8–14.4
1989	9.6	8.9–10.5	23.4	21.0–26.1	22.7	19.3–26.4	13.5	12.7–14.4
1990	10.3	9.5–11.2	20.6	18.3–23.0	22.9	19.6–26.7	13.5	12.7–14.3
1991	9.5	8.8–10.3	20.9	18.6–23.4	26.0	22.5–29.8	13.3	12.5–14.1
1992	8.5	7.8–9.3	20.7	18.4–23.1	22.7	19.5–26.2	12.2	11.4–13.0
1993	8.1	7.4–8.8	21.9	19.6–24.4	20.5	17.5–23.8	11.9	11.2–12.7
1994	9.2	8.5–10.0	21.7	19.4–24.1	24.6	21.4–28.2	13.1	12.3–13.9
1995	7.7	7.0–8.4	17.0	15.1–19.2	21.3	18.4–24.7	10.7	10.1–11.5
1996	7.4	6.8–8.1	16.5	14.6–18.6	20.1	17.3–23.3	10.4	9.7–11.0
1997	6.3	5.7–6.9	14.2	12.5–16.1	16.5	14.0–19.3	8.7	8.2–9.4
1998	6.9	6.3–7.5	13.4	11.8–15.3	18.2	15.5–21.1	9.2	8.6–9.8
1999	6.2	5.6–6.8	13.1	11.5–14.9	14.5	12.2–17.1	8.3	7.8–8.9
2000	5.3	4.8–5.9	12.7	11.2–14.5	17.1	14.6–19.9	7.8	7.3–8.4
2001	5.3	4.8–5.8	11.7	10.2–13.3	14.7	12.5–17.3	7.4	6.9–7.9
2002	5.1	4.6–5.7	10.2	8.8–11.7	12.6	10.5–14.9	6.8	6.3–7.3
2003	5.2	4.6–5.7	10.6	9.2–12.2	14.1	11.9–16.5	7.0	6.5–7.6
2004	5.7	5.1–6.3	8.7	7.5–10.1	12.9	10.8–15.3	6.9	6.4–7.5
2005	5.6	5.1–6.2	9.6	8.3–11.0	11.6	9.7–13.9	6.9	6.4–7.4
2006	5.2	4.7–5.8	9.6	8.4–11.0	11.8	9.8–14.1	6.7	6.2–7.2
2007	5.3	4.7–5.8	10.3	9.0–11.7	11.3	9.4–13.5	6.8	6.3–7.3
2008	5.6	5.1–6.2	9.6	8.4–10.9	12.0	10.1–14.3	7.0	6.5–7.5

(a) The age-standardised rates were standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.

Source: AIHW Australian Cancer Database 2008.

Table D2.6: Incidence of all gynaecological cancers combined, by age at diagnosis, 1982 to 2008

	<50 years		50–69 years		70+ years		All ages	
Year	ASR[(a)]	95% CI	ASR[(a)]	95% CI	ASR[(a)]	95% CI	ASR[(a)]	95% CI
1982	16.8	15.6–18.0	103.6	98.3–109.1	124.6	115.6–134.0	43.6	42.0–45.2
1983	17.0	15.9–18.3	96.9	91.8–102.2	136.0	126.8–145.7	43.5	41.9–45.1
1984	17.0	15.9–18.3	102.1	96.9–107.6	134.0	125.1–143.5	44.3	42.8–45.9
1985	17.9	16.8–19.2	98.4	93.2–103.7	135.6	126.8–145.0	44.4	42.8–46.0
1986	18.1	16.9–19.3	97.8	92.7–103.1	129.9	121.4–138.9	43.8	42.3–45.4
1987	17.2	16.1–18.4	97.4	92.3–102.6	137.8	129.2–146.9	43.9	42.4–45.4
1988	17.6	16.5–18.7	93.7	88.8–98.9	126.8	118.6–135.4	42.4	40.9–43.9
1989	16.4	15.3–17.5	98.3	93.3–103.4	129.6	121.4–138.2	42.7	41.2–44.2
1990	17.3	16.2–18.4	89.8	85.0–94.7	140.7	132.2–149.5	42.7	41.2–44.1
1991	16.2	15.2–17.2	97.2	92.3–102.4	146.2	137.7–155.0	43.8	42.4–45.3
1992	15.9	15.0–17.0	98.7	93.8–103.9	134.9	126.9–143.3	43.0	41.5–44.4
1993	15.3	14.4–16.3	97.3	92.5–102.4	138.2	130.3–146.6	42.5	41.2–44.0
1994	16.4	15.4–17.4	101.0	96.1–106.1	143.1	135.1–151.4	44.5	43.1–45.9
1995	14.6	13.6–15.5	92.2	87.5–97.0	144.9	136.9–153.1	41.6	40.2–42.9
1996	14.0	13.1–14.9	88.6	84.1–93.3	142.5	134.7–150.5	40.3	39.0–41.6
1997	13.2	12.3–14.1	87.7	83.3–92.3	134.5	127.1–142.2	38.8	37.5–40.1
1998	13.3	12.5–14.2	88.0	83.6–92.5	137.4	130.0–145.2	39.2	37.9–40.5
1999	12.7	11.9–13.6	86.5	82.2–90.9	134.5	127.2–142.0	38.2	37.0–39.4
2000	11.7	10.9–12.5	89.9	85.6–94.3	138.4	131.2–146.0	38.5	37.3–39.7
2001	11.5	10.7–12.3	85.9	81.8–90.2	133.0	126.0–140.3	37.1	35.9–38.3
2002	12.0	11.2–12.8	87.2	83.2–91.5	134.4	127.4–141.7	37.8	36.7–39.0
2003	11.8	11.1–12.7	86.5	82.5–90.6	127.3	120.5–134.4	36.9	35.8–38.1
2004	12.8	12.0–13.7	87.2	83.2–91.3	136.2	129.2–143.5	38.6	37.4–39.7
2005	12.2	11.4–13.0	87.3	83.4–91.4	136.6	129.6–143.8	38.2	37.0–39.3
2006	12.2	11.5–13.1	87.9	84.0–91.8	131.4	124.6–138.5	37.9	36.7–39.0
2007	12.1	11.3–12.9	89.4	85.6–93.4	129.8	123.1–136.8	37.9	36.8–39.1
2008	12.9	12.1–13.8	86.6	82.9–90.4	132.4	125.7–139.4	38.2	37.1–39.3

(a) The age-standardised rates were standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.

Source: AIHW Australian Cancer Database 2008.

Table D2.7: Projected number of new cases and age-standardised rates with 95% prediction intervals[a], 2011–2020: ovarian, uterine and cervical cancer

	Estimated number of new cases[b]			Estimated age-standardised rate[c]		
Year	Cases	Lower 95% PI	Upper 95% PI	Rate	Lower 95% PI	Upper 95% PI
			Ovarian cancer			
2011	1,390	1,290	1,490	10.7	10.0	11.4
2012	1,420	1,310	1,520	10.6	9.9	11.4
2013	1,440	1,340	1,550	10.6	9.8	11.3
2014	1,470	1,360	1,580	10.5	9.8	11.3
2015	1,500	1,390	1,610	10.5	9.7	11.2
2016	1,520	1,410	1,640	10.4	9.7	11.2
2017	1,550	1,440	1,670	10.4	9.6	11.1
2018	1,580	1,460	1,700	10.3	9.5	11.1
2019	1,610	1,480	1,730	10.2	9.5	11.0
2020	1,640	1,510	1,760	10.2	9.4	11.0
			Uterine cancer			
2011	2,170	2,050	2,290	16.7	15.8	17.6
2012	2,240	2,110	2,360	16.8	15.9	17.7
2013	2,310	2,180	2,440	16.9	15.9	17.8
2014	2,380	2,240	2,510	17.0	16.0	17.9
2015	2,450	2,310	2,590	17.1	16.1	18.0
2016	2,520	2,380	2,670	17.2	16.2	18.1
2017	2,600	2,450	2,750	17.3	16.3	18.3
2018	2,670	2,520	2,830	17.4	16.4	18.4
2019	2,750	2,590	2,910	17.5	16.5	18.5
2020	2,830	2,660	2,990	17.6	16.6	18.6
			Cervical cancer			
2011	800	740	865	6.8	6.3	7.4
2012	815	750	875	6.8	6.3	7.4
2013	825	760	890	6.8	6.2	7.3
2014	840	775	905	6.8	6.2	7.3
2015	850	785	920	6.8	6.2	7.3
2016	865	795	935	6.8	6.2	7.3
2017	880	810	945	6.8	6.2	7.3
2018	890	820	960	6.8	6.2	7.3
2019	905	835	975	6.7	6.2	7.3
2020	915	845	990	6.7	6.2	7.3

(a) Projected estimates are based on national cancer incidence data. See (AIHW 2012a) for more details.

(b) Counts are rounded to the nearest 10. For counts less than 1,000 estimates are rounded to the nearest 5.

(c) Age-standardised rates are standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.

Source: AIHW 2012a.

Table D2.8: Incidence of ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by state and territory, Australia, 2004–2008

	Ovarian cancer			Uterine cancer			Cervical cancer			All gynaecological cancers combined		
State or territory	**Cases**	**ASR[(a)]**	**95% CI**	**Cases**	**ASR[(a)]**	**95% CI**	**Cases**	**ASR[(a)]**	**95% CI**	**Cases**	**ASR[(a)]**	**95% CI**
New South Wales	2,130	11.1	10.6–11.5	3,038	15.8	15.2–16.4	1,226	6.8	6.4–7.2	7,164	37.6	36.7–38.5
Victoria	1,729	11.9	11.4–12.5	2,574	17.9	17.2–18.6	810	5.9	5.5–6.4	5,629	39.3	38.2–40.3
Queensland	1,106	10.2	9.6–10.9	1,876	17.4	16.6–18.2	804	7.8	7.2–8.3	4,170	39.0	37.8–40.2
Western Australia	622	11.6	10.7–12.6	772	14.4	13.4–15.4	408	7.9	7.1–8.7	2,006	37.7	36.0–39.4
South Australia	468	9.7	8.8–10.6	853	17.6	16.4–18.8	258	6.2	5.5–7.0	1,748	36.8	35.1–38.6
Tasmania	154	10.2	8.6–11.9	209	14.1	12.2–16.1	100	7.7	6.2–9.4	518	35.5	32.5–38.7
Australian Capital Territory	84	10.3	8.2–12.8	114	14.4	11.8–17.3	49	5.7	4.2–7.6	282	34.7	30.7–39.0
Northern Territory	28	7.5	4.5–11.3	58	16.2	11.7–21.7	50	12.3	8.6–17.0	160	43.1	35.5–51.6
Total	**6,321**	**11.0**	**10.7–11.3**	**9,494**	**16.6**	**16.2–16.9**	**3,705**	**6.9**	**6.6–7.1**	**21,677**	**38.1**	**37.6–38.7**

(a) The age-standardised rates were standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females. The rates are based on the total number of cases over the 5-year period from 2004–2008.

Source: AIHW Australian Cancer Database 2008.

Table D2.9: Incidence of ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by remoteness area, Australia, 2004–2008

	Ovarian cancer			Uterine cancer			Cervical cancer			All gynaecological cancers combined		
Remoteness area[a]	**Cases**	**ASR[b]**	**95% CI**	**Cases**	**ASR[b]**	**95% CI**	**Cases**	**ASR[b]**	**95% CI**	**Cases**	**ASR[b]**	**95% CI**
Major cities	4,356	11.3	10.9–11.6	6,426	16.7	16.3–17.2	2,548	6.8	6.6–7.1	14,795	38.5	37.9–39.2
Inner regional	1,329	10.7	10.1–11.3	1,968	15.8	15.1–16.5	687	6.4	5.9–6.9	4,433	36.5	35.4–37.6
Outer regional	521	9.6	8.8–10.5	907	16.5	15.4–17.6	352	7.2	6.4–8.0	1,974	36.9	35.3–38.6
Remote and very remote	97	9.9	8.0–12.1	180	18.2	15.6–21.1	101	9.5	7.7–11.6	420	42.1	38.1–46.4
Not stated	18	. .	. .	13	. .	. .	17	. .	. .	55	. .	. .
Total	**6,321**	**11.0**	**10.7–11.3**	**9,494**	**16.6**	**16.2–16.9**	**3,705**	**6.9**	**6.6–7.1**	**21,677**	**38.1**	**37.6–38.7**

(a) Classified according to the Australian Standard Geographical Classification (ASGC) Remoteness Areas (see Appendix A).

(b) The age-standardised rates were standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females. The rates are based on the total number of cases over the 5-year period from 2004–2008.

Source: AIHW Australian Cancer Database 2008.

Table D2.10: Incidence of ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by socioeconomic status, Australia, 2004–2008

	Ovarian cancer			Uterine cancer			Cervical cancer			All gynaecological cancers combined		
Socioeconomic status[a]	Cases	ASR[b]	95% CI	Cases	ASR[b]	95% CI	Cases	ASR[b]	95% CI	Cases	ASR[b]	95% CI
1 (Lowest)	1,295	11.0	10.4–11.6	2,136	18.0	17.3–18.8	858	8.0	7.5–8.6	4,793	41.3	40.1–42.5
2	1,263	10.6	10.0–11.2	1,916	16.2	15.4–16.9	768	7.2	6.7–7.7	4,396	37.7	36.6–38.8
3	1,250	10.9	10.3–11.6	1,836	16.2	15.4–16.9	744	6.8	6.4–7.4	4,249	37.5	36.4–38.7
4	1,168	10.7	10.1–11.3	1,770	16.4	15.7–17.2	666	6.2	5.7–6.6	4,010	37.0	35.8–38.1
5 (Highest)	1,327	11.7	11.1–12.4	1,823	16.1	15.4–16.9	651	6.0	5.5–6.5	4,172	37.0	35.9–38.1
Not stated	18	. .	. .	13	. .	. .	18	. .	. .	57	. .	. .
Total	**6,321**	**11.0**	**10.7–11.3**	**9,494**	**16.6**	**16.2–16.9**	**3,705**	**6.9**	**6.6–7.1**	**21,677**	**38.1**	**37.6–38.7**

(a) Classified using the ABS Index of Relative Socio-economic Disadvantage (see Appendix A).

(b) The age-standardised rates were standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females. The rates are based on the total number of cases over the 5-year period from 2004–2008.

Source: AIHW Australian Cancer Database 2008.

Table D2.11: Incidence and mean age at diagnosis of ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by Aboriginal and Torres Strait Islander status, New South Wales, Queensland, Western Australia and the Northern Territory, 2004–2008

	Ovarian cancer				Uterine cancer				Cervical cancer				All gynaecological cancers combined			
Indigenous status	**Cases**	**ASR[(a)]**	**95% CI**	**Mean age**	**Cases**	**ASR[(a)]**	**95% CI**	**Mean age**	**Cases**	**ASR[(a)]**	**95% CI**	**Mean age**	**Cases**	**ASR[(a)]**	**95% CI**	**Mean age**
Indigenous	54	10.4	7.4–14.1	53.0	120	24.3	19.7–29.6	57.3	121	18.0	14.5–22.0	45.9	332	59.2	52.1–66.9	51.7
Non-Indigenous	3,681	10.4	10.1–10.8	63.6	5,228	14.8	14.4–15.2	64.4	2,178	6.5	6.3–6.8	52.0	12,352	35.3	34.7–36.0	62.1
Not stated	151	. .	. .	58.5	396	. .	. .	62.6	189	. .	. .	43.8	816	. .	. .	57.3
Total	**3,886**	**10.9**	**10.5–11.2**	**63.2**	**5,744**	**16.1**	**15.7–16.5**	**64.2**	**2,488**	**7.3**	**7.0–7.6**	**51.1**	**13,500**	**38.1**	**37.4–38.7**	**61.6**

(a) The age-standardised rates were standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females. The rates are based on the total number of cases over the 5-year period from 2004–2008.

(b) Some states and territories use an imputation method for determining Indigenous cancers, which may lead to differences between these data and those shown in jurisdictional cancer incidence reports.

Source: AIHW Australian Cancer Database 2008.

Table D2.12: Incidence of ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by country/region of birth, Australia, 2004–2008

	Ovarian cancer			Uterine cancer			Cervical cancer			All gynaecological cancers combined		
Country/region of birth[a]	**Cases**	**ASR[b]**	**95% CI**	**Cases**	**ASR[b]**	**95% CI**	**Cases**	**ASR[b]**	**95% CI**	**Cases**	**ASR[b]**	**95% CI**
Oceania and Antarctica excl. Australia and NZ	38	11.3	7.6–16.0	104	35.1	28.0–43.2	62	16.2	12.1–21.1	212	65.0	55.6–75.3
United States of America (USA) and Canada	36	15.8	10.6–22.5	44	17.5	12.3–24.1	10	3.2	1.5–6.0	97	41.0	32.5–50.9
New Zealand (NZ)	111	11.2	9.0–13.6	134	13.6	11.2–16.3	118	9.8	7.9–11.8	407	39.0	35.0–43.4
North Africa and the Middle East	92	12.2	9.8–15.0	141	18.4	15.4–21.7	28	3.4	2.2–4.9	285	37.3	33.0–41.9
Southern and Eastern Europe	486	10.5	9.4–11.7	874	17.5	16.2–18.8	188	5.3	4.4–6.3	1,713	36.4	34.4–38.5
Australia	4,029	10.4	10.1–10.7	5,982	15.6	15.2–16.0	2,339	6.3	6.0–6.5	13,788	35.9	35.3–36.6
North-West Europe, excl. UK and Ireland	193	11.3	9.6–13.1	262	15.1	13.2–17.2	70	6.5	4.8–8.6	575	35.7	32.5–39.2
Americas, excl. USA and Canada	39	14.4	10.0–20.1	29	10.6	6.8–15.6	21	8.3	4.9–13.0	92	34.6	27.3–43.0
Sub-Saharan Africa	65	13.0	9.9–16.8	72	14.5	11.2–18.4	25	4.5	2.9–6.7	174	34.4	29.3–40.2
United Kingdom (UK) and Ireland	617	11.1	10.1–12.2	763	13.1	12.2–14.1	279	6.9	6.0–7.9	1,851	34.4	32.7–36.2
South-East Asia	177	9.3	7.9–10.9	261	14.5	12.7–16.6	140	6.8	5.6–8.1	616	32.8	30.0–35.8
Southern and Central Asia	81	11.7	9.2–14.5	86	12.7	10.1–15.7	31	4.2	2.9–6.0	217	31.4	27.3–35.9
North-East Asia	94	7.8	6.2–9.6	147	12.9	10.8–15.2	64	5.0	3.8–6.4	325	27.1	24.1–30.4
Inadequately described, not stated or unknown	263	. .	. .	594	. .	. .	330	. .	. .	1,324	. .	. .
Total	**6,321**	**11.0**	**10.7–11.3**	**9,494**	**16.6**	**16.2–16.9**	**3,705**	**6.9**	**6.6–7.1**	**21,677**	**38.1**	**37.6–38.7**

(a) Classified according to the Standard Australian Classification of Countries, second edition (see Appendix A).

(b) The age-standardised rates were standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females. The rates are based on the total number of cases over the 5-year period from 2004–2008. Countries/regions of birth are ordered in descending order according to the age-standardised rate for all gynaecological cancers combined.

Source: AIHW Australian Cancer Database 2008.

Table D2.13: International comparison of estimated incidence of ovarian, uterine and cervical cancer, 2008[a]

	Ovarian cancer			Uterine cancer			Cervical cancer		
Country or region	**Cases**	**ASR[b]**	**95% CI[c]**	**Cases**	**ASR[b]**	**95% CI[c]**	**Cases**	**ASR[b]**	**95% CI[c]**
Northern Europe	10,256	11.8	11.6–12.0	12,595	13.8	13.6–14.0	5,213	8.4	8.2–8.6
Central and Eastern Europe	27,071	11.0	10.9–11.1	37,971	14.6	14.5–14.7	31,215	14.7	14.5–14.9
Western Europe	16,619	8.9	8.8–9.0	21,939	11.2	11.1–11.3	9,289	6.9	6.8–7.0
Northern America	23,895	8.7	8.6–8.8	44,651	16.4	16.2–16.6	12,491	5.7	5.6–5.8
New Zealand	278	8.5	7.5–9.5	390	12.4	11.2–13.6	140	5.5	4.6–6.4
Southern Europe	11,751	8.4	8.2–8.6	15,563	10.4	10.2–10.6	8,800	8.1	7.9–8.3
Australia	***1,323***	***7.7***	***7.3–8.1***	***1,910***	***11.3***	***10.8–11.8***	***658***	***4.9***	***4.5–5.3***
South-Eastern Asia	18,580	6.6	6.5–6.7	15,197	5.7	5.6–5.8	44,387	15.8	15.7–15.9
World	***224,747***	***6.3***	***6.3–6.3***	***288,387***	***8.2***	***8.2–8.2***	***530,232***	***15.3***	***15.3–15.3***
South America	12,405	6.2	6.1–6.3	8,733	4.4	4.3–4.5	47,881	24.1	23.9–24.3
Micronesia	15	6.1	3.0–9.2	20	8.0	4.5–11.5	24	9.5	5.7–13.3
South-Central Asia	38,797	5.5	5.4–5.6	13,771	2.1	2.1–2.1	173,917	24.6	24.5–24.7
Central America	3,571	5.2	5.0–5.4	3,809	6.1	5.9–6.3	15,606	22.2	21.9–22.5
Melanesia	161	5.1	4.3–5.9	132	5.2	4.3–6.1	724	23.7	22.0–25.4
Polynesia	13	5.0	2.3–7.7	31	11.5	7.5–15.5	48	16.7	12.0–21.4
Northern Africa	4,015	4.8	4.7–4.9	1,646	2.2	2.1–2.3	5,278	6.6	6.4–6.8
Western Asia	4,200	4.8	4.7–4.9	4,508	5.6	5.4–5.8	3,918	4.5	4.4–4.6
Caribbean	1,005	4.3	4.0–4.6	2,088	9.0	8.6–9.4	4,733	20.8	20.2–21.4
Eastern Asia	40,831	4.3	4.3–4.3	97,702	10.3	10.2–10.4	90,768	9.6	9.5–9.7
Middle Africa	1,728	4.3	4.1–4.5	660	1.9	1.8–2.0	8,222	23.0	22.5–23.5
Eastern Africa	3,840	4.0	3.9–4.1	1,991	2.4	2.3–2.5	31,516	34.5	34.1–34.9
Southern Africa	893	3.8	3.6–4.0	1,559	6.9	6.6–7.2	6,500	26.8	26.1–27.5
Western Africa	3,500	3.8	3.7–3.9	1,523	1.9	1.8–2.0	28,903	33.7	33.3–34.1

(a) The data were estimated for 2008 by the International Agency for Research on Cancer (IARC) and are based on data from about 3 to 5 years earlier. The GLOBOCAN data for ovarian cancer pertain to cancers coded in ICD-10 as C56, uterine cancer to cancers coded in ICD-10 as C54 and cervical cancer coded in ICD-10 as C53.

(b) The age-standardised rates were standardised by the IARC using the Doll et al. (1966) World Standard Population and are expressed per 100,000 females. Countries or regions are ordered in descending order according to the age-standardised rate for ovarian cancer.

(c) The confidence intervals are approximations and were calculated by the AIHW (see Appendix B).

Source: Ferlay et al. 2010a.

Table D2.14: Grouping of ovarian cancer histological types

Type of ovarian cancer[(a)]	Corresponding ICD-O-3 codes
Carcinoma	8010–8231, 8246–8576, 9014–9015, 9110
Serous carcinoma	8441, 8460–8463, 9014
Mucinous carcinoma	8470–8490, 9015
Endometrioid carcinoma	8380–8383, 8560, 8570
Clear cell carcinoma	8310–8313, 9110
Adenocarcinoma not otherwise specified	8140–8147, 8170–8190, 8211–8231, 8260, 8384, 8440, 8576
Other carcinoma	Includes 8010–8035, 8041, 8045, 8046, 8050, 8052, 8070–8072 and all other specified carcinomas
Sex cord-stromal tumours	8590–8671
Germ cell tumours	8240–8245, 9060–9102
Other specified malignant neoplasm[(b)]	Includes 8800, 8801, 8805, 8806, 8810, 8811, 8815, 8830, 8840, 8852, 8858 and all other specified tumours
Unspecified malignant neoplasm	8000–8005

(a) The grouping of ovarian cancer histology types was based primarily on those recommended by the International Agency for Research on Cancer (Egevad et al. 2007), with additional input from Cancer Australia.

(b) Including malignant Brenner tumour, Mullerian mixed tumour, carcinosarcoma.

Note: All cases included in each of the groups were coded by state and territory cancer registries as primary site, invasive ovarian cancers.

Table D2.15: Grouping of uterine cancer histology types

Type of uterine cancer[(a)]	Corresponding ICD-O-3 codes
Carcinoma	8010–8574, 8576
Adenocarcinoma[(b)]	8140–8141, 8190–8211, 8230–8231, 8260–8263, 8310, 8380, 8382–8384, 8430, 8440–8490, 8510, 8560, 8570–8574, 8576
Other carcinoma	Includes 8010–8035, 8041, 8046, 8050, 8070–8072, 8076 and all other specified carcinomas
Sarcoma	8800–8811, 8830, 8840–8921, 8990–8991, 9040–9044, 9120–9133, 9150, 9540–9581
Other and unspecified malignant neoplasm	Includes 8000–8005, 8650, 8930–8931, 8933–8935, 8940, 8950–8951, 8960 and all other specified tumours

(a) The grouping of uterine cancer histology types was based primarily on those recommended by the International Agency for Research on Cancer (Egevad et al. 2007), with additional input from Cancer Australia.

(b) Including mucoepidermoid and adenosquamous carcinoma.

Note: All cases included in each of the groups were coded by state and territory cancer registries as primary site, invasive uterine cancers.

Table D2.16: Grouping of cervical cancer histology types

Type of cervical cancer[(a)]	Corresponding ICD-O-3 codes
Carcinoma	8010–8380, 8382–8576
Squamous cell carcinoma	8050–8078, 8083–8084
Adenocarcinoma	8140–8141, 8190–8211, 8230–8231, 8260–8263, 8310, 8380, 8382–8384, 8440–8490, 8570–8574, 8576
Adenosquamous carcinoma	8560
Other carcinoma	Includes 8010–8035, 8041, 8045, 8082, 8090, 8094, 8098, 8120 and all other specified carcinomas
Sarcoma	8800–8811, 8830, 8840–8921, 8990–8991, 9040–9044, 9120–9133, 9150, 9540–9581
Other and unspecified malignant neoplasm	Includes 8000–8005, 8720, 8772, 8930, 8933, 8935, 8940, 8950–8951, 8980 and all other specified tumours

(a) The grouping of cervical cancer histology types was based primarily on those recommended by the International Agency for Research on Cancer (Egevad et al. 2007), with additional input from Cancer Australia.

Note: All cases included in each of the groups were coded by state and territory cancer registries as primary site, invasive cervical cancers.

Table D2.17: Grouping of vaginal cancer histological types

Type of vaginal cancer[(a)]	Corresponding ICD-O-3 codes
Carcinoma	8010–8576, 8940–8941
Squamous cell carcinoma	8050–8130
Adenocarcinoma	8140–8147, 8160–8162, 8180–8221, 8250–8506, 8520–8550, 8560, 8570–8573, 8940–8941
Other carcinoma	Includes 8010–8022, 8032, 8231, 8246 and all other specified carcinomas
Melanoma	8720–8790
Other and unspecified malignant neoplasm	Includes 8000–8004, 8800–8802, 8841, 8890–8891, 8910, 8930–8931, 8935 and all other specified tumours

(a) The grouping of vaginal cancer histology types was based primarily on the classifications in the report of the Surveillance Epidemiology End Results (SEER) (Kosary 2007a), with additional input from Cancer Australia.

Note: All cases included in each of the groups were coded by state and territory cancer registries as primary site, invasive vaginal cancers.

Table D2.18: Grouping of vulval cancer histological types

Type of vulval cancer[(a)]	Corresponding ICD-O-3 codes
Carcinoma	8010–8576, 8940–8941
Squamous cell carcinoma	8050–8130
Adenocarcinoma	8140–8147, 8160–8162, 8180–8221, 8250–8506, 8520–8550, 8560, 8570–8573, 8940–8941
Other carcinoma	Includes 8010–8022, 8030, 8032, 8170, 8231, 8240, 8246 and all other specified carcinomas
Melanoma	8720–8790
Other and unspecified malignant neoplasm	Includes 8000–8004, 8800, 8804, 8810, 8830, 8832, 8840–8841, 8851, 8890 and all other specified tumours

(a) The grouping of vulval cancer histology types was based primarily on the classifications in the report of the Surveillance Epidemiology End Results (SEER) (Kosary 2007b), with additional input from Cancer Australia.

Note: All cases included in each of the groups were coded by state and territory cancer registries as primary site, invasive vulval cancers.

Table D2.19: Incidence and average age at diagnosis of vaginal cancer by histological type, Australia, 2003–2008

	Incidence			Average age at diagnosis	
Type of vaginal cancer[(a)]	Number of new cases	Percentage of vaginal cancers	Percentage of carcinomas	Mean age	Median age
Carcinoma	360	84.5	100.0	69.1	71.0
Squamous cell carcinoma	*270*	*63.4*	*75.0*	*70.0*	*72.5*
Adenocarcinoma	*63*	*14.8*	*17.5*	*65.0*	*65.0*
Other carcinoma	*24*	*5.6*	*6.7*	*70.6*	*72.5*
Melanoma	35	8.2	. .	*71.5*	*73.0*
Other and unspecified malignant neoplasm	31	7.3	. .	53.9	59.0
Total	**426**	**100.0**	**. .**	**68.2**	**70.0**

. . Not applicable

(a) All cases were coded as primary site, invasive vaginal cancers (ICD-10 code of C52). Table D2.17 provides a list of the histological types included in each group.

Source: AIHW Australian Cancer Database 2008.

Table D2.20: Incidence of vaginal cancer by histological type and age at diagnosis, Australia, 2003–2008

	Number of new cases				Per cent			
Type of vaginal cancer[(a)]	**<30**	**30–49**	**50–69**	**70+**	**<30**	**30–49**	**50–69**	**70+**
Carcinoma	1	26	146	187	12.5	76.5	87.4	86.2
Squamous cell carcinoma	*0*	*18*	*100*	*152*	*0.0*	*52.9*	*59.9*	*70.0*
Adenocarcinoma	*1*	*4*	*37*	*21*	*12.5*	*11.8*	*22.2*	*9.7*
Other carcinoma	*0*	*3*	*7*	*14*	*0.0*	*8.8*	*4.2*	*6.5*
Melanoma	0	3	13	19	0.0	8.8	7.8	8.8
Other and unspecified malignant neoplasm	7	5	8	11	87.5	14.7	4.8	5.1
Total	**8**	**34**	**167**	**217**	**100.0**	**100.0**	**100.0**	**100.0**

. . Not applicable

(a) All cases were coded as primary site, invasive vaginal cancers (ICD-10 code of C52). Table D2.17 provides a list of the histological types included in each group.

Source: AIHW Australian Cancer Database 2008.

Table D2.21: Incidence of vaginal cancer by histological type, Australia, 1982–1988 to 2003–2008

	Number of new cases				Per cent			
Type of vaginal cancer[(a)]	**1982–1988**	**1989–1995**	**1996–2002**	**2003–2008**	**1982–1988**	**1989–1995**	**1996–2002**	**2003–2008**
Carcinoma	289	358	378	360	91.2	91.3	86.7	84.5
Squamous cell carcinoma	*236*	*306*	*305*	*270*	*74.4*	*78.1*	*70.0*	*63.4*
Adenocarcinoma	*25*	*30*	*54*	*63*	*7.9*	*7.7*	*12.4*	*14.8*
Other carcinoma	*27*	*21*	*17*	*24*	*8.5*	*5.4*	*3.9*	*5.6*
Melanoma	9	15	31	35	2.8	3.8	7.1	8.2
Other and unspecified malignant neoplasm	19	19	27	31	6.0	4.8	6.2	7.3
Total	**317**	**392**	**436**	**426**	**100.0**	**100.0**	**100.0**	**100.0**

(a) All cases were coded as primary site, invasive vaginal cancers (ICD-10 code of C52). Table D2.17 provides a list of the histological types included in each group.

Source: AIHW Australian Cancer Database 2008.

Table D2.22: Incidence and average age at diagnosis of vulval cancer by histological type, Australia, 2003–2008

	Incidence			Average age at diagnosis	
Type of vulval cancer[(a)]	Number of new cases	Percentage of vaginal cancers	Percentage of carcinomas	Mean age	Median age
Carcinoma	1,444	92.3	100.0	67.5	70.0
Squamous cell carcinoma	*1,293*	*82.6*	*89.5*	*67.3*	*70.0*
Adenocarcinoma	*135*	*8.6*	*9.3*	*68.8*	*69.0*
Other carcinoma	*16*	*1.0*	*1.1*	*74.5*	*82.5*
Melanoma	*89*	*5.7*	. .	*67.9*	*71.0*
Other and unspecified malignant neoplasm	32	2.0	. .	70.8	79.0
Total	**1,565**	**100.0**	**. .**	**67.6**	**70.0**

. . Not applicable

(a) All cases were coded as primary site, invasive vulval cancers (ICD-10 code of C51). Table D2.18 provides a list of the histological types included in each group.

Source: AIHW Australian Cancer Database 2008.

Table D2.23: Incidence of vulval cancer by histological type and age at diagnosis, Australia, 2003–2008

	Number of new cases				Per cent			
Type of vulval cancer[(a)]	<30	30–49	50–69	70+	<30	30–49	50–69	70+
Carcinoma	7	236	467	734	70.0	91.5	93.8	91.9
Squamous cell carcinoma	*6*	*224*	*408*	*655*	*60.0*	*86.8*	*81.9*	*82.0*
Adenocarcinoma	*1*	*10*	*57*	*67*	*10.0*	*3.9*	*11.4*	*8.4*
Other carcinoma	*0*	*2*	*2*	*12*	*0.0*	*0.8*	*0.4*	*1.5*
Melanoma	1	16	26	46	10.0	6.2	5.2	5.8
Other and unspecified malignant neoplasm	2	6	5	19	20.0	2.3	1.0	2.4
Total	**10**	**258**	**498**	**799**	**100.0**	**100.0**	**100.0**	**100.0**

. . Not applicable

(a) All cases were coded as primary site, invasive vulval cancers (ICD-10 code of C51). Table D2.18 provides a list of the histological types included in each group.

Source: AIHW Australian Cancer Database 2008.

Table D2.24: Incidence of vulval cancer by histological type, Australia, 1982–1988 to 2003–2008

Type of vulval cancer[(a)]	Number of new cases				Per cent			
	1982–1988	1989–1995	1996–2002	2003–2008	1982–1988	1989–1995	1996–2002	2003–2008
Carcinoma	934	1,159	1,413	1,444	89.3	91.8	92.2	92.3
Squamous cell carcinoma	*835*	*1,046*	*1,261*	*1,293*	*79.8*	*82.8*	*82.3*	*82.6*
Adenocarcinoma	*66*	*89*	*126*	*135*	*6.3*	*7.0*	*8.2*	*8.6*
Other carcinoma	*33*	*24*	*26*	*16*	*3.2*	*1.9*	*1.7*	*1.0*
Melanoma	76	70	79	89	7.3	5.5	5.2	5.7
Other and unspecified malignant neoplasm	36	34	40	32	3.4	2.7	2.6	2.0
Total	**1,046**	**1,263**	**1,532**	**1,565**	**100.0**	**100.0**	**100.0**	**100.0**

(a) All cases were coded as primary site, invasive vulval cancers (ICD-10 code of C51). Table D2.18 provides a list of the histological types included in each group.

Source: AIHW Australian Cancer Database 2008.

Additional tables for Chapter 3: Early detection

Table D3.1: Number and age-standardised rate of women aged 20–69 participating in the National Cervical Screening Program, 1996–1997 to 2009–2010

Reporting period	Participants[(b)]	Population[(c)]	Adjusted population[(d)]	ASR[(e)]	95% CI
1996–1997[(a)]	2,563,107	4,769,763	4,186,906	61.0	60.9–61.1
1997–1998[(a)]	2,653,504	4,823,334	4,227,203	62.6	62.5–62.6
1998–1999[(a)]	2,716,364	4,874,748	4,264,927	63.4	63.4–63.5
1999–2000	3,244,329	6,041,447	5,278,596	61.3	61.2–61.3
2000–2001	3,262,931	6,122,480	5,339,538	61.0	60.9–61.1
2001–2002	3,296,409	6,211,365	5,406,559	60.9	60.9–61.0
2002–2003	3,318,354	6,307,398	5,479,418	60.6	60.6–60.7
2003–2004	3,354,519	6,404,756	5,553,880	60.5	60.5–60.6
2004–2005	3,407,219	6,504,478	5,798,435	58.8	58.7–58.8
2005–2006	3,452,092	6,613,589	5,889,613	58.7	58.6–58.7
2006–2007	3,549,524	6,734,973	5,992,434	59.3	59.3–59.4
2007–2008	3,599,919	6,874,225	6,112,328	59.1	59.0–59.1
2008–2009	3,638,941	7,028,243	6,247,210	58.6	58.5–58.6
2009–2010	3,635,929	7,178,804	6,378,872	57.4	57.3–57.5

(a) Since the Queensland Health Pap Smear Register began operations in February 1999, Queensland data are excluded from both the participants and population data for the 1996–1997, 1997–1998 and 1998–1999 reporting periods.

(b) Participants are the number of women aged 20–69 screened in each 2-year reporting period. Number of women screened includes all women screened in each jurisdiction, not just those women resident in each jurisdiction, with the exception of Victoria and the Australian Capital Territory, for which only residents of the jurisdiction (and immediate border residents) are included.

(c) Population is the average of the Australian Bureau of Statistics (ABS) estimated resident population for women aged 20–69 for the two reporting years.

(d) Adjusted population is the average of the ABS estimated resident population for women aged 20–69 for the two years, adjusted to include only women with an intact cervix using age-specific hysterectomy fractions. Reporting periods 1996–1997 to 2003–2004 use hysterectomy fractions derived from the 2001 ABS National Health Survey; reporting periods 2004–2005 to 2009–2010 use hysterectomy fractions derived from the AIHW National Hospitals Morbidity Database. Rates from before 2004–2005 should not be directly compared with those after this reporting period.

(e) Age-standardised rate is the number of women aged 20–69 screened in each 2-year reporting period as a percentage of the ABS estimated resident population for women aged 20–69, adjusted to include only women with an intact cervix as described above, age-standardised to the Australian population at 30 June 2001.

Note: Rates from 1996–1997 to 2003–2004 cannot be directly compared with rates from 2004–2005 onwards due to a different source of hysterectomy fractions used to adjust the population.

Source: AIHW 2012b.

Table D3.2: Participation of women aged 20–69 in the National Cervical Screening Program, by remoteness area, 2009–2010

Remoteness area[(a)]	Number of women screened	ASR[(b)]	95% CI
Major cities	2,568,785	57.9	57.8–58.0
Inner regional	678,299	56.8	56.7–57.0
Outer regional	309,567	55.4	55.2–55.6
Remote	49,415	55.0	54.5–55.5
Very remote	27,126	57.1	56.4–57.8
Total[(c)]	**3,635,929**	**57.4**	**57.3–57.5**

(a) Women were allocated to a remoteness area using their residential postcode according to the Australian Standard Geographic Classification for 2006.

(b) Age-standardised rate is the number of women screened in 2009–2010 as a percentage of the average of the ABS estimated resident population for women aged 20–69 for 2009 and 2010, adjusted to include only women with an intact cervix using age-specific hysterectomy fractions derived from the AIHW National Hospitals Morbidity Database, age-standardised to the Australian population at 30 June 2001.

(c) Includes cases for which information on remoteness area was not available.

Notes

1. Caution is required when examining differences across remoteness area.
2. Participation by remoteness area in 2009–2010 is not comparable with previous reporting periods.

Source: AIHW 2012b.

Table D3.3: Participation of women aged 20–69 in the National Cervical Screening Program, by socioeconomic status, 2009–2010

Socioeconomic status[(a)]	Number of women screened	ASR[(b)]	95% CI
1 (lowest)	616,641	52.1	52.0–52.3
2	668,585	53.9	53.7–54.0
3	723,425	56.4	56.3–56.6
4	772,590	58.7	58.6–58.9
5 (highest)	828,701	63.2	63.1–63.4
Total[(c)]	**3,635,929**	**57.4**	**57.3–57.5**

(a) Women were allocated to a socioeconomic status using their residential postcode according to the Socio-Economic Indexes for Areas (SEIFA) Index of Relative Socio-Economic Disadvantage for 2006.

(b) Age-standardised rate is the number of women screened in 2009–2010 as a percentage of the average of the ABS estimated resident population for women aged 20–69 for 2009 and 2010, adjusted to include only women with an intact cervix using age-specific hysterectomy fractions derived from the AIHW National Hospitals Morbidity Database, age-standardised to the Australian population at 30 June 2001.

(c) Includes cases for which information on socioeconomic status was not available.

Notes

1. Caution is required when examining differences across socioeconomic status.
2. Participation by socioeconomic status in 2009–2010 is not comparable with previous reporting periods.

Source: AIHW 2012b.

Additional tables for Chapter 4: Hospitalisations for gynaecological cancer

Table D4.1: Hospitalisations due to ovarian, uterine and cervical cancer, and all gynaecological cancers combined[a], by age at hospitalisation, Australia, 2009–10

Age group (years)	Ovarian cancer			Uterine cancer			Cervical cancer			All gynaecological cancers combined		
	No.	Rate[b]	95% CI	No.	Rate[b]	95% CI	No.	Rate[b]	95% CI	No.	Rate[b]	95% CI
<20	32	0.1	0.1–0.2	0	0.0	0.0–0.0	6	0.0	0.0–0.0	49	0.2	0.1–0.2
20–24	24	0.3	0.2–0.5	6	0.1	0.0–0.2	24	0.3	0.2–0.5	54	0.7	0.5–0.9
25–29	20	0.3	0.2–0.4	11	0.1	0.1–0.2	88	1.1	0.9–1.4	130	1.6	1.4–2.0
30–34	38	0.5	0.4–0.7	26	0.3	0.2–0.5	160	2.1	1.8–2.5	251	3.3	2.9–3.8
35–39	100	1.2	1.0–1.5	65	0.8	0.6–1.0	224	2.8	2.4–3.1	418	5.1	4.7–5.7
40–44	94	1.2	1.0–1.5	111	1.4	1.2–1.7	171	2.2	1.9–2.6	431	5.6	5.1–6.2
45–49	247	3.1	2.7–3.5	188	2.4	2.0–2.7	219	2.8	2.4–3.2	715	9.0	8.4–9.7
50–54	370	5.1	4.6–5.6	425	5.8	5.3–6.4	214	2.9	2.6–3.4	1,095	15.1	14.2–16.0
55–59	450	6.8	6.2–7.5	599	9.1	8.4–9.9	174	2.6	2.3–3.1	1,357	20.6	19.5–21.7
60–64	594	10.1	9.3–11.0	711	12.1	11.3–13.1	144	2.5	2.1–2.9	1,580	27.0	25.7–28.4
65–69	634	14.5	13.4–15.6	589	13.4	12.4–14.6	104	2.4	1.9–2.9	1,460	33.3	31.6–35.1
70–74	510	14.4	13.1–15.7	473	13.3	12.1–14.6	109	3.1	2.5–3.7	1,242	35.0	33.1–37.0
75–79	368	12.5	11.2–13.8	394	13.3	12.1–14.7	63	2.1	1.6–2.7	969	32.8	30.8–35.0
80–84	291	11.7	10.4–13.2	298	12.0	10.7–13.5	46	1.9	1.4–2.5	765	30.9	28.7–33.1
85+	175	7.0	6.0–8.1	227	9.1	7.9–10.3	56	2.2	1.7–2.9	576	23.1	21.2–25.0
All ages[c]	**3,947**	**3.2**	**3.1–3.4**	**4,123**	**3.4**	**3.3–3.5**	**1,802**	**1.6**	**1.5–1.7**	**11,092**	**9.2**	**9.0–9.4**

(a) All gynaecological cancers combined pertains to hospitalisations in which the principal diagnosis was coded as C51–C58 in the ICD-10-AM. The relevant ICD-10-AM code(s) was C56 for ovarian cancer, C54–C55 for uterine cancer and C53 for cervical cancer.

(b) The rates shown are age-specific rates expressed per 10,000 females.

(c) The rates shown in this row are age-standardised to the Australian population as at 30 June 2001 and expressed per 10,000 females.

Source: AIHW National Hospital Morbidity Database.

Table D4.2: Same-day chemotherapy hospitalisations due to gynaecological cancers[a], Australia, 2009–10

Age group (years)	Number	Age-specific rate[b]	95% CI
<20	32	0.1	0.1–0.2
20–24	98	1.3	1.0–1.5
25–29	109	1.4	1.1–1.7
30–34	204	2.7	2.4–3.1
35–39	260	3.2	2.8–3.6
40–44	456	5.9	5.4–6.5
45–49	947	11.9	11.2–12.7
50–54	1,449	19.9	18.9–21.0
55–59	1,985	30.1	28.8–31.5
60–64	2,503	42.8	41.1–44.5
65–69	2,340	53.4	51.2–55.6
70–74	2,275	64.1	61.5–66.8
75–79	1,268	43.0	40.6–45.4
80–84	869	35.1	32.8–37.5
85+	326	13.1	11.7–14.5
All ages[c]	**15,121**	**12.4**	**12.2–12.6**

(a) Pertain to hospitalisations in which the principal diagnosis is chemotherapy (Z51.1) and the additional diagnosis is any gynaecological cancer (ICD-10-AM codes C51–C58). When there is more than one type of gynaecological cancer recorded as an additional diagnosis in a hospitalisation, only one is counted.

(b) The rates are expressed per 10,000 females.

(c) The rate shown in this row was age-standardised to the Australian population as at 30 June 2001 and expressed per 10,000 females.

Source: AIHW National Hospital Morbidity Database.

Table D4.3: Crude average length of stay[(a)] for overnight hospitalisations due to ovarian, uterine and cervical cancer, and all gynaecological cancers combined[(b)], by age at hospitalisation, Australia, 2009–10

Age group (years)	Ovarian cancer	Uterine cancer	Cervical cancer	All gynaecological cancers combined
<20	4.4	n.p.	n.p.	3.6
20–24	6.1	n.p.	2.7	4.8
25–29	4.9	1.5	4.0	4.6
30–34	4.5	3.4	4.4	4.0
35–39	6.2	4.0	6.2	6.1
40–44	6.2	3.4	7.4	5.6
45–49	5.2	4.9	6.8	5.9
50–54	5.8	4.8	6.3	5.6
55–59	6.7	4.9	10.7	6.4
60–64	6.8	5.2	8.2	6.2
65–69	7.0	5.9	12.8	7.2
70–74	7.1	5.8	6.5	6.7
75–79	8.1	6.9	6.8	7.8
80–84	9.4	7.2	12.5	8.9
85+	10.7	8.8	8.7	10.2
All ages (crude)	**7.1**	**5.8**	**7.5**	**6.8**
All ages (age-standardised)[(c)]	**7.3**	**5.7**	**8.5**	**7.0**

n.p. Not published (data cannot be released due to quality issues)

(a) The average number of patient days for admitted patient episodes.

(b) All gynaecological cancers combined pertains to hospitalisations in which the principal diagnosis was coded as C51–C58 in the ICD-10-AM. The relevant ICD-10-AM code(s) was C56 for ovarian cancer, C54–C55 for uterine cancer and C53 for cervical cancer.

(c) Directly age-standardised to the female overnight hospitalisation population in 2009–10 where the principal diagnosis is cancer (ICD-10-AM codes C00–C97, D45, D47.1 and D47.3).

Source: AIHW National Hospital Morbidity Database.

Table D4.4: Hospitalisations due to ovarian cancer[a], by same-day and overnight status, Australia, 2000–01 to 2009–10

	Same-day			Overnight			Total		
Year	Number	ASR[b]	95% CI	Number	ASR[b]	95% CI	Number	ASR[b]	95% CI
2000–01	510	0.5	0.5–0.6	2,980	3.0	2.9–3.1	3,490	3.5	3.4–3.6
2001–02	719	0.7	0.7–0.8	2,919	2.8	2.7–3.0	3,638	3.6	3.4–3.7
2002–03	609	0.6	0.4–0.5	2,608	2.5	2.0–2.2	3,217	3.1	2.4–2.6
2003–04	659	0.6	0.6–0.7	2,664	2.5	2.4–2.6	3,323	3.1	3.0–3.2
2004–05	646	0.6	0.5–0.6	2,593	2.4	2.3–2.5	3,239	3.0	2.9–3.1
2005–06	672	0.6	0.6–0.7	2,906	2.6	2.5–2.7	3,578	3.2	3.1–3.3
2006–07	751	0.7	0.6–0.7	3,076	2.7	2.6–2.8	3,827	3.3	3.2–3.5
2007–08	836	0.7	0.7–0.8	2,938	2.5	2.4–2.6	3,774	3.2	3.1–3.3
2008–09	914	0.8	0.7–0.8	2,869	2.4	2.3–2.5	3,783	3.2	3.1–3.3
2009–10	943	0.8	0.7–0.8	3,004	2.4	2.4–2.5	3,947	3.2	3.1–3.3

(a) Pertain to hospitalisations in which the principal diagnosis was coded as C56 in the ICD-10-AM.

(b) The rates were age-standardised to the Australian population as at 30 June 2001 and expressed per 10,000 females.

Source: AIHW National Hospital Morbidity Database.

Table D4.5: Hospitalisations due to uterine cancer[a], by same-day and overnight status, Australia, 2000–01 to 2009–10

	Same-day			Overnight			Total		
Year	Number	ASR[b]	95% CI	Number	ASR[b]	95% CI	Number	ASR[b]	95% CI
2000–01	811	0.8	0.8–0.9	2,164	2.2	2.1–2.2	2,975	3.0	2.9–3.1
2001–02	856	0.8	0.8–0.9	2,240	2.2	2.1–2.3	3,096	3.0	2.9–3.1
2002–03	914	0.9	0.7–0.8	2,299	2.2	2.0–2.1	3,213	3.1	2.6–2.8
2003–04	1,077	1.0	1.0–1.1	2,358	2.2	2.1–2.3	3,435	3.2	3.1–3.3
2004–05	1,047	1.0	0.9–1.0	2,536	2.3	2.2–2.4	3,583	3.2	3.1–3.4
2005–06	1,131	1.0	1.0–1.1	2,467	2.2	2.0–2.2	3,598	3.2	3.1–3.3
2006–07	1,110	1.0	0.9–1.0	2,457	2.1	2.0–2.2	3,567	3.1	3.0–3.2
2007–08	1,155	1.0	0.9–1.0	2,662	2.3	2.2–2.3	3,817	3.2	3.1–3.3
2008–09	1,145	1.0	0.9–1.0	2,605	2.2	2.1–2.2	3,750	3.1	3.0–3.2
2009–10	1,275	1.0	1.0–1.1	2,848	2.3	2.2–2.4	4,123	3.3	3.2–3.4

(a) Pertain to hospitalisations in which the principal diagnosis was coded as C54–C55 in the ICD-10-AM.

(b) The rates were age-standardised to the Australian population as at 30 June 2001 and expressed per 10,000 persons.

Source: AIHW National Hospital Morbidity Database.

Table D4.6: Hospitalisations due to cervical cancer[a], by same-day and overnight status, Australia, 2000–01 to 2009–10

	Same-day			Overnight			Total		
Year	Number	ASR[b]	95% CI	Number	ASR[b]	95% CI	Number	ASR[b]	95% CI
2000–01	518	0.5	0.5–0.6	1,407	1.4	1.3–1.5	1,925	1.9	1.9–2.0
2001–02	498	0.5	0.5–0.5	1,300	1.3	1.2–1.3	1,798	1.8	1.7–1.9
2002–03	605	0.6	0.5–0.6	1,316	1.3	1.4–1.5	1,921	1.9	1.9–2.0
2003–04	549	0.5	0.5–0.6	1,233	1.2	1.1–1.2	1,782	1.7	1.6–1.8
2004–05	653	0.6	0.6–0.7	1,159	1.1	1.0–1.2	1,812	1.7	1.6–1.8
2005–06	617	0.6	0.5–0.6	1,107	1.0	1.0–1.1	1,724	1.6	1.5–1.7
2006–07	680	0.6	0.6–0.7	1,166	1.1	1.0–1.1	1,846	1.7	1.6–1.8
2007–08	728	0.7	0.6–0.7	1,044	0.9	0.9–1.0	1,772	1.6	1.5–1.7
2008–09	760	0.7	0.6–0.7	1,140	1.0	0.9–1.1	1,900	1.7	1.6–1.7
2009–10	723	0.6	0.6–0.7	1,079	0.9	0.9–1.0	1,802	1.6	1.5–1.6

(a) Pertain to hospitalisations in which the principal diagnosis was coded as C53 in the ICD-10-AM.

(b) The rates were age-standardised to the Australian population as at 30 June 2001 and expressed per 10,000 females.

Source: AIHW National Hospital Morbidity Database.

Table D4.7: Hospitalisations due to all gynaecological cancers combined[a], by same-day and overnight status, Australia, 2000–01 to 2009–10

	Same-day			Overnight			Total		
Year	Number	ASR[b]	95% CI	Number	ASR[b]	95% CI	Number	ASR[b]	95% CI
2000–01	2,059	2.1	2.0–2.2	7,343	7.3	7.1–7.5	9,402	9.4	9.2–9.6
2001–02	2,270	2.2	2.1–2.3	7,188	7.0	6.8–7.2	9,458	9.2	9.0–9.4
2002–03	2,346	2.3	1.8–2.0	6,848	6.5	5.7–6.0	9,194	8.8	7.6–7.9
2003–04	2,544	2.4	2.3–2.5	7,007	6.5	6.4–6.7	9,551	8.9	8.7–9.1
2004–05	2,594	2.4	2.3–2.5	7,078	6.4	6.3–6.6	9,672	8.8	8.7–9.0
2005–06	2,640	2.4	2.3–2.5	7,273	6.5	6.3–6.6	9,913	8.9	8.7–9.1
2006–07	2,792	2.5	2.4–2.6	7,539	6.6	6.4–6.7	10,331	9.1	8.9–9.2
2007–08	3,011	2.6	2.5–2.7	7,462	6.4	6.2–6.5	10,473	9.0	8.8–9.2
2008–09	3,066	2.6	2.5–2.7	7,535	6.3	6.2–6.4	10,601	8.9	8.7–9.1
2009–10	3,200	2.6	2.6–2.7	7,892	6.4	6.3–6.6	11,092	9.1	8.9–9.2

(a) Pertain to hospitalisations in which the principal diagnosis was coded as C51–C58 in the ICD-10-AM.

(b) The rates were age-standardised to the Australian population as at 30 June 2001 and expressed per 10,000 females.

Source: AIHW National Hospital Morbidity Database.

Table D4.8: Same-day chemotherapy hospitalisations due to gynaecological cancers[a], Australia, 2000–01 to 2009–10[b]

Year	Number	ASR[c]	95% CI
2000–01	8,868	9.0	8.8–9.2
2001–02	9,804	9.8	9.6–10.0
2002–03	9,867	9.6	7.5–7.8
2003–04	10,727	10.2	10.0–10.4
2004–05	11,364	10.5	10.4–10.7
2005–06	11,644	10.6	10.4–10.8
2006–07	12,079	10.6	10.5–10.8
2007–08	12,523	10.8	10.6–11.0
2008–09	14,235	12.0	11.8–12.2
2009–10	15,121	12.4	12.2–12.6

(a) Pertain to same-day hospitalisations in which the principal diagnosis is chemotherapy (Z51.1) and the additional diagnosis is any gynaecological cancer (ICD-10-AM codes C51–C58). When there is more than one type of gynaecological cancer recorded as an additional diagnosis, only one is counted.

(b) Note that the comparison might be affected by differences in admission practices between public and private hospitals. For example, over the past few years there has been a gradual reclassification of chemotherapy patients from admitted patients to non-admitted patients (outpatients) in public hospitals in New South Wales, South Australia and the Australian Capital Territory

(c) The rates were age-standardised to the Australian population as at 30 June 2001 and expressed per 10,000 females.

Source: AIHW National Hospital Morbidity Database.

Table D4.9: Average length of stay[a] for overnight hospitalisations due to ovarian, uterine and cervical cancer, and all gynaecological cancers combined[b], Australia, 2000–01 to 2009–10

	Ovarian cancer		Uterine cancer		Cervical cancer		All gynaecological cancers combined	
Year	Crude ALOS	Age-standardised ALOS[c]	Crude ALOS	Age-standardised ALOS[c]	Crude ALOS	Age-standardised ALOS[c]	Crude ALOS	Age-standardised ALOS[c]
2000–01	7.6	8.0	7.2	7.1	7.6	8.0	7.7	7.9
2001–02	8.4	8.9	7.2	7.2	7.4	8.2	7.8	8.1
2002–03	8.4	8.7	7.2	7.2	6.9	7.5	7.8	8.0
2003–04	8.8	9.0	6.8	6.8	7.3	7.6	7.8	8.1
2004–05	8.9	9.1	7.1	7.1	7.6	8.3	8.0	8.2
2005–06	7.8	8.1	6.6	6.5	7.4	8.2	7.5	7.6
2006–07	7.8	8.1	6.5	6.5	7.1	7.7	7.4	7.6
2007–08	7.7	8.2	6.2	6.4	7.0	7.6	7.2	7.5
2008–09	8.0	8.2	6.0	6.0	6.7	7.3	7.1	7.2
2009–10	7.1	7.3	5.8	5.7	7.5	8.5	6.8	7.0

(a) The average number of patient days for admitted patient episodes.

(b) All gynaecological cancers combined pertains to hospitalisations in which the principal diagnosis was coded as C51–C58 in the ICD-10-AM. The relevant ICD-10-AM code(s) was C56 for ovarian cancer, C54–C55 for uterine cancer and C53 for cervical cancer.

(c) Directly age-standardised to the female overnight hospitalisation population in 2009–10 where the principal diagnosis is cancer (ICD-10-AM codes C00–C97, D45, D47.1 and D47.3).

Source: AIHW National Hospital Morbidity Database.

Table D4.10: Hospitalisations due to ovarian, uterine and cervical cancer, and all gynaecological cancers combined[(a)], by remoteness area of usual residence[(b)], Australia, 2009–10

	Ovarian cancer			Uterine cancer			Cervical cancer			All gynaecological caners combined		
Remoteness area[(b)]	**No.**	**ASR[(c)]**	**95% CI**	**No.**	**ASR[(c)]**	**95% CI**	**No.**	**ASR[(c)]**	**95% CI**	**No.**	**ASR[(c)]**	**95% CI**
Major cities	2,862	3.5	3.4–3.7	2,795	3.4	3.3–3.5	1,265	1.6	1.5–1.7	7,710	9.5	9.3–9.7
Inner regional	717	2.7	2.5–2.9	850	3.1	2.9–3.3	287	1.2	1.1–1.4	2,112	8.0	7.6–8.3
Outer regional	320	2.8	2.5–3.1	386	3.3	3.0–3.6	177	1.7	1.5–2.0	1,022	8.9	8.4–9.5
Remote and Very remote	38	2.0	1.4–2.7	81	3.9	3.1–4.9	58	2.6	2.0–3.4	211	10.1	8.8–11.6
Not stated	10	. .	. .	11	. .	. .	15	. .	. .	37	. .	. .
Total	**3,947**	**3.2**	**3.1–3.3**	**4,123**	**3.3**	**3.2–3.4**	**1,802**	**1.6**	**1.5–1.6**	**11,902**	**9.1**	**8.9–9.2**

(a) All gynaecological cancers combined pertains to hospitalisations in which the principal diagnosis was coded as C51–C58 in the ICD-10-AM. The relevant ICD-10-AM code(s) was C56 for ovarian cancer, C54–C55 for uterine cancer and C53 for cervical cancer.

(b) Remoteness was classified using the Australian Standard Geographical Classification (ASGC) Remoteness Area (see Appendix A).

(c) The rates were age-standardised to the Australian population as at 30 June 2001 and expressed per 10,000 females.

Source: AIHW National Hospital Morbidity Database.

Table D4.11: Average length of stay[(a)] for overnight hospitalisations due to ovarian, uterine and cervical cancer, and all gynaecological cancers combined[(b)], by remoteness area of usual residence[(c)], Australia, 2009–10

	Ovarian cancer		Uterine cancer		Cervical cancer		All gynaecological cancers combined	
Remoteness area[(c)]	**Crude ALOS**	**Age-standardised ALOS[(d)]**	**Crude ALOS**	**Age-standardised ALOS[(d)]**	**Crude ALOS**	**Age-standardised ALOS[(d)]**	**Crude ALOS**	**Age-standardised ALOS[(d)]**
Major cities	7.0	7.2	5.7	5.7	7.8	9.2	6.8	7.0
Inner regional	7.0	7.6	5.9	5.7	7.7	7.1	6.8	7.0
Outer regional	7.8	8.4	6.0	5.7	6.6	6.5	7.2	7.2
Remote and Very remote	9.7	7.3	5.7	5.7	5.2	4.0	7.3	7.7
Total	**7.1**	**7.3**	**5.8**	**5.7**	**7.5**	**8.5**	**6.8**	**7.0**

(a) The average number of patient days for admitted patient episodes.

(b) All gynaecological cancers combined pertains to hospitalisations in which the principal diagnosis was coded as C51–C58 in the ICD-10-AM. The relevant ICD-10-AM code(s) was C56 for ovarian cancer, C54–C55 for uterine cancer and C53 for cervical cancer.

(c) Remoteness was classified using the Australian Standard Geographical Classification (ASGC) Remoteness Area (see Appendix A).

(d) Directly age-standardised to the female overnight hospitalisation population in 2009–10 where the principal diagnosis is cancer (ICD-10-AM codes C00–C97, D45, D47.1 and D47.3).

Source: AIHW National Hospital Morbidity Database.

Table D4.12: Hospitalisations due to ovarian, uterine and cervical cancer, and all gynaecological cancers combined[a], by socioeconomic status of area of usual residence[b], Australia, 2009–10

	Ovarian cancer			Uterine cancer			Cervical cancer			All gynaecological cancers combined		
Socioeconomic status[b]	**No.**	**ASR[c]**	**95% CI**	**No.**	**ASR[c]**	**95% CI**	**No.**	**ASR[c]**	**95% CI**	**No.**	**ASR[c]**	**95% CI**
1 (lowest)	760	3.0	2.6–3.5	926	3.7	3.2–4.2	389	1.8	1.5–2.0	2,339	9.5	8.8–10.3
2	813	3.2	2.8–3.6	851	3.2	2.8–3.7	395	1.7	1.5–2.0	2,343	9.1	8.5–9.8
3	816	3.5	3.2–3.8	810	3.4	3.2–3.7	375	1.6	1.5–1.8	2,223	9.5	9.1–10.0
4	669	2.9	2.5–3.4	745	3.2	2.8–3.7	359	1.6	1.3–1.8	1,993	8.7	7.9–9.5
5 (highest)	879	3.6	3.5–3.8	779	3.1	2.9–3.4	269	1.2	1.0–1.3	2,156	8.9	8.5–9.2
Not stated	10	. .	. .	12	. .	. .	15	. .	. .	38	. .	. .
Total	**3,947**	**3.2**	**3.1–3.3**	**4,123**	**3.3**	**3.2–3.4**	**1,802**	**1.6**	**1.5–1.6**	**11,902**	**9.1**	**8.9–9.2**

(a) All gynaecological cancers combined pertains to hospitalisations in which the principal diagnosis was coded as C51–C58 in the ICD-10-AM. The relevant ICD-10-AM code(s) was C56 for ovarian cancer, C54–C55 for uterine cancer and C53 for cervical cancer.

(b) Socioeconomic status was classified using the ABS Index of Relative Socio-economic Disadvantage (see Appendix A).

(c) The rates were age-standardised to the Australian population as at 30 June 2001 and expressed per 10,000 females.

Source: AIHW National Hospital Morbidity Database.

Table D4.13: Average length of stay[a] for overnight hospitalisations due to ovarian, uterine and cervical cancer, and all gynaecological cancers combined[b], by socioeconomic status of area of usual residence[c], Australia, 2009–10

	Ovarian cancer		Uterine cancer		Cervical cancer		All gynaecological cancers combined	
Socioeconomic status[c]	Crude ALOS	Age-standardised ALOS[d]	Crude ALOS	Age-standardised ALOS[d]	Crude ALOS	Age-standardised ALOS[d]	Crude ALOS	Age-standardised ALOS[d]
1 (lowest)	7.9	8.0	5.7	5.8	7.1	7.6	7.1	7.2
2	7.7	8.1	5.8	5.6	6.8	7.2	6.9	7.1
3	7.2	7.9	5.7	5.6	8.5	9.4	6.9	7.1
4	6.3	6.3	5.7	5.7	6.4	6.9	6.4	6.4
5 (highest)	6.4	6.0	5.9	5.4	9.7	10.9	6.8	6.4
Total	**7.1**	**7.3**	**5.8**	**5.7**	**7.5**	**8.5**	**6.8**	**7.0**

(a) The average number of patient days for admitted patient episodes.

(b) All gynaecological cancers combined pertains to hospitalisations in which the principal diagnosis was coded as C51–C58 in the ICD-10-AM. The relevant ICD-10-AM code(s) was C56 for ovarian cancer, C54–C55 for uterine cancer and C53 for cervical cancer.

(c) Socioeconomic status was classified using the ABS Index of Relative Socio-economic Disadvantage (see Appendix A).

(d) Directly age-standardised to the female overnight hospitalisation population in 2009–10 where the principal diagnosis is cancer (ICD-10-AM codes C00–C97, D45, D47.1 and D47.3).

Source: AIHW National Hospital Morbidity Database.

Table D4.14: Hospitalisations due to ovarian, uterine and cervical cancer, and all gynaecological cancers combined[a], by Aboriginal and Torres Strait Islander status, New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory[b], 2005–06 to 2009–10

	Ovarian cancer			Uterine cancer			Cervical cancer			All gynaecological caners		
Indigenous status[b]	**No.**	**ASR[c]**	**95% CI**	**No.**	**ASR[c]**	**95% CI**	**No.**	**ASR[c]**	**95% CI**	**No.**	**ASR[c]**	**95% CI**
Indigenous Australians	119	1.7	1.4–2.1	305	4.9	4.4–5.6	421	5.0	4.5–5.6	1,023	13.7	12.8–14.6
Other Australians[d]	18,135	3.3	3.2–3.3	17,924	3.2	3.2–3.3	8,382	1.6	1.6–1.6	49,671	9.0	9.0–9.1
Total	**18,254**	**3.3**	**3.2–3.3**	**18,229**	**3.2**	**3.2–3.3**	**8,803**	**1.7**	**1.6–1.7**	**50,694**	**9.1**	**9.0–9.2**

(a) All gynaecological cancers combined pertains to hospitalisations in which the principal diagnosis was coded as C51–C58 in the ICD-10-AM. The relevant ICD-10-AM code(s) was C56 for ovarian cancer, C54–C55 for uterine cancer and C53 for cervical cancer.

(b) Data restricted to hospitals in NSW, Vic, Qld, WA, SA and public hospitals in the NT only.

(c) The rates were age-standardised to the Australian population as at 30 June 2001 and expressed per 10,000 females.

(d) Includes hospitalisations for which Aboriginal and Torres Strait Islander status was not reported.

Source: AIHW National Hospital Morbidity Database.

Table D4.15: Average length of stay[a] for overnight hospitalisations due to ovarian, uterine and cervical cancer, and all gynaecological cancers combined[b], by Aboriginal and Torres Strait Islander status, New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory[c], 2005–06 to 2009–10

	Ovarian cancer		Uterine cancer		Cervical cancer		All gynaecological caners combined	
Indigenous status[c]	**Crude ALOS**	**Age-standardised ALOS[d]**	**Crude ALOS**	**Age-standardised ALOS[d]**	**Crude ALOS**	**Age-standardised ALOS[d]**	**Crude ALOS**	**Age-standardised ALOS[d]**
Indigenous Australians	7.6	7.1	4.4	4.4	5.9	5.0	5.9	5.7
Other Australians[e]	6.0	6.3	4.3	4.4	4.3	5.2	5.1	5.4
Total	**6.0**	**6.2**	**4.3**	**4.4**	**4.4**	**5.2**	**5.2**	**5.4**

(a) The average number of patient days for admitted patient episodes.

(b) All gynaecological cancers combined pertains to hospitalisations in which the principal diagnosis was coded as C51–C58 in the ICD-10-AM. The relevant ICD-10-AM code(s) was C56 for ovarian cancer, C54–C55 for uterine cancer and C53 for cervical cancer.

(c) Data restricted to hospitals in NSW, Vic, Qld, WA, SA and public hospitals in the NT only.

(d) Directly age-standardised to the female overnight hospitalisation population in 2009–10 where the principal diagnosis is cancer (ICD-10-AM codes C00–C97, D45, D47.1 and D47.3).

(e) Includes hospitalisations for which Aboriginal and Torres Strait Islander status was not reported.

Source: AIHW National Hospital Morbidity Database.

Table D4.16: Twenty most common procedure blocks for same-day hospitalisations due to all gynaecological cancers combined[a], Australia, 2009–10

Procedure description (ACHI[b] block code)	Number[c, d]	Per cent[d]	Rank
Non-invasive, cognitive and other interventions, not elsewhere classified (1820–1922)			
Cerebral anaesthesia (1910)	1,938	60.6	1
Administration of blood and blood products (1893)	696	21.8	4
Administration of pharmacotherapy (1920)	210	6.6	8
Generalised allied health interventions (1916)	107	3.3	12
Other genitourinary diagnostic tests, measures or investigations (1862)	66	2.1	16
Postprocedural analgesia (1912)	36	1.1	20
Gynaecological procedures (1240–1299)			
Curettage and evacuation of uterus (1265)	1,108	34.6	2
Examination procedures on uterus (1259)	766	23.9	3
Excision of lesion of uterus (1266)	351	11.0	5
Excision procedures on cervix (1276)	309	9.7	6
Destruction procedures on cervix (1275)	143	4.5	9
Examination procedures on vagina (1279)	126	3.9	10
Examination procedures on other gynaecological sites (1296)	76	2.4	13
Insertion or removal of intrauterine device (1260)	68	2.1	14
Excision procedures on vagina (1282)	68	2.1	15
Biopsy of vulva or perineum (1291)	55	1.7	17
Procedures on urinary system (1040–1129)			
Examination procedures on bladder (1089)	242	7.6	7
Radiation oncology procedures (1786–1799)			
Brachytherapy, intracavitary, gynaecological (1790)	109	3.4	11
Procedures on digestive system (850–1011)			
Fibreoptic colonoscopy (905)	54	1.7	18
Dermatological and plastic procedures (1600–1718)			
Excision of lesion(s) of skin and subcutaneous tissue (1620)	37	1.2	19
Total same-day hospitalisations due to all gynaecological cancers combined	**3,200**	**40.5**	. .

(a) Pertain to hospitalisations in which the principal diagnosis was coded as C51–C58 in the ICD-10-AM.

(b) Australian Classification of Health Interventions, 6th edition.

(c) Indicates the number of hospitalisations in which the listed procedure block was undertaken.

(d) A hospitalisation is counted once for the block if it has at least one procedure reported within the block. As more than one procedure can be reported for each hospitalisation, the data are not additive and therefore the totals in the tables may not equal the sum of the counts in the rows. For the same reason, the sum of the percentages does not equal 100.

Source: AIHW National Hospital Morbidity Database.

Table D4.17: Twenty most common procedure blocks for overnight hospitalisations due to all gynaecological cancer combined[a], Australia, 2009–10

Procedure description (ACHI[b] block code)	Number[c,d]	Per cent[d]	Rank
Non-invasive, cognitive and other interventions, not elsewhere classified (1820–1922)			
Cerebral anaesthesia (1910)	4,488	56.9	1
Generalised allied health interventions (1916)	4,464	56.6	2
Administration of pharmacotherapy (1920)	1,419	18.0	4
Postprocedural analgesia (1912)	1,214	15.4	5
Administration of blood and blood products (1893)	1,158	14.7	6
Conduction anaesthesia (1909)	778	9.9	8
Other assessment, consultation, interview, examination or evaluation (1824)	250	3.2	20
Gynaecological procedures (1240–1299)			
Abdominal hysterectomy (1268)	2,464	31.2	3
Other procedures on female genital organs (1299)	524	6.6	10
Vaginal hysterectomy (1269)	363	4.6	13
Salpingo-oophorectomy (1252)	347	4.4	14
Vulvectomy (1292)	294	3.7	16
Curettage and evacuation of uterus (1265)	272	3.4	18
Procedures on digestive system (850–1011)			
Division of abdominal adhesions (986)	1,037	13.1	7
Other excision procedures on abdomen, peritoneum or omentum (989)	678	8.6	9
Laparotomy (985)	407	5.2	12
Application, insertion or removal procedures on abdomen, peritoneum or omentum (983)	275	3.5	17
Biopsy of abdomen, peritoneum or omentum (988)	259	3.3	19
Procedures on blood and blood-forming organs (800–817)			
Excision procedures on lymph nodes for gynaecological malignancy (810)	417	5.3	11
Imaging services (1940–2016)			
Computerised tomography of abdomen and pelvis (1963)	347	4.4	15
Total overnight hospitalisations due to all gynaecological cancers combined	**7,892**	**100.0**	. .

(a) Pertain to hospitalisations in which the principal diagnosis was coded as C51–C58 in the ICD-10-AM.

(b) Australian Classification of Health Interventions, 6th edition.

(c) Indicates the number of hospitalisations in which the listed procedure block was undertaken.

(d) A hospitalisation is counted once for the block if it has at least one procedure reported within the block. As more than one procedure can be reported for each hospitalisation, the data are not additive and therefore the totals in the tables may not equal the sum of the counts in the rows. For the same reason, the sum of the percentages does not equal 100.

Source: AIHW National Hospital Morbidity Database.

Table D4.18: Twenty most common procedure blocks for hospitalisations due to all gynaecological cancer combined[a], Australia, 2009–10

Procedure description (ACHI[b] block code)	Number[c, d]	Per cent[d]	Rank
Non-invasive, cognitive and other interventions, not elsewhere classified (1820–1922)			
Cerebral anaesthesia (1910)	6,426	57.9	1
Generalised allied health interventions (1916)	4,571	41.2	2
Administration of blood and blood products (1893)	1,854	16.7	4
Administration of pharmacotherapy (1920)	1,629	14.7	5
Postprocedural analgesia (1912)	1,250	11.3	7
Conduction anaesthesia (1909)	803	7.2	10
Gynaecological procedures (1240–1299)			
Abdominal hysterectomy (1268)	2,475	22.3	3
Curettage and evacuation of uterus (1265)	1,380	12.4	6
Examination procedures on uterus (1259)	948	8.5	9
Other procedures on female genital organs (1299)	534	4.8	12
Examination procedures on cervix (1279)	473	4.3	13
Excision of lesion of uterus (1266)	416	3.8	16
Vaginal hysterectomy (1269)	363	3.3	18
Salpingo-oophorectomy (1252)	356	3.2	19
Procedures on blood and blood-forming organs (800–817)			
Excision procedures on lymph nodes for gynaecological malignancy (810)	419	3.8	15
Procedures on digestive system (850–1011)			
Division of abdominal adhesions (986)	1,053	9.5	8
Other excision procedures on abdomen, peritoneum or omentum (989)	681	6.1	11
Laparotomy (985)	409	3.7	17
Examination procedures on bladder (1089)	438	3.9	14
Imaging services (1940–2016)			
Computerised tomography of abdomen and pelvis (1963)	353	3.2	20
Total hospitalisations due to all gynaecological cancers combined	**11,092**	**100**	**. .**

(a) Pertain to hospitalisations in which the principal diagnosis was coded as C51–C58 in the ICD-10-AM.

(b) Australian Classification of Health Interventions, 6th edition.

(c) Indicates the number of hospitalisations in which the listed procedure block was undertaken.

(d) A hospitalisation is counted once for the block if it has at least one procedure reported within the block. As more than one procedure can be reported for each hospitalisation, the data are not additive and therefore the totals in the tables may not equal the sum of the counts in the rows. For the same reason, the sum of the percentages does not equal 100.

Source: AIHW National Hospital Morbidity Database.

Table D4.19: Selected ACHI procedure codes[a] and corresponding procedure names for hospitalisations due to all gynaecological cancers combined[b], Australia, 2009–10

ACHI[c] procedure code	Corresponding procedure names
3565700	Vaginal hysterectomy
3032900	Excision of lymph node of groin
3032901	Regional excision of lymph nodes of groin
3033000	Radical excision of lymph nodes of groin
3037300	Exploratory laparotomy
3037500	Caecostomy
3037501	Other enterostomy
3037502	Colotomy
3037503	Enterotomy of small intestine
3037504	Other colostomy
3037505	Cholecystostomy
3037506	Gastrotomy
3037507	Gastrostomy
3037508	Reduction of intussusception of small intestine
3037509	Excision of Meckel's diverticulum
3037510	Suture of perforated ulcer
3037511	Reduction of intussusception of large intestine
3037512	Reduction of gastric volvulus
3037513	Pyloroplasty
3037514	Incision and drainage of pancreas
3037515	Gastrotomy with removal of foreign body
3037517	Reduction of volvulus of large intestine
3037518	Reduction of volvulus of small intestine
3037519	Other repair of small intestine
3037520	Splenotomy
3037521	Other procedures on spleen
3037522	Transabdominal gastroscopy
3037523	Endoscopic examination of large intestine via laparotomy
3037524	Suture of small intestine
3037525	Suture of laceration of large intestine
3037526	Cholecystotomy
3037527	Marsupialisation of pancreatic cyst
3037528	Temporary colostomy
3037529	Temporary ileostomy
3037530	Appendicostomy
3037800	Division of abdominal adhesions
3037800	Division of abdominal adhesions
3037800	Division of abdominal adhesions

(continued)

Table D4.19 (continued): Selected ACHI procedure codes[a] and corresponding procedure names for hospitalisations due to all gynaecological cancers combined[b], Australia, 2009–10

ACHI[c] procedure code	Corresponding procedure names
3039200	Debulking of intra-abdominal lesion
3039300	Laparoscopic division of abdominal adhesions
3056500	Resection of small intestine with formation of stoma
3056600	Resection of small intestine with anastomosis
3057100	Appendicectomy
3058300	Distal pancreatectomy
3059700	Splenectomy
3200000	Limited excision of large intestine with formation of stoma
3200001	Right hemicolectomy with formation of stoma
3200300	Limited excision of large intestine with anastomosis
3200301	Right hemicolectomy with anastomosis
3200400	Subtotal colectomy with formation of stoma
3200401	Extended right hemicolectomy with formation of stoma
3200500	Subtotal colectomy with anastomosis
3200501	Extended right hemicolectomy with anastomosis
3200600	Left hemicolectomy with anastomosis
3200601	Left hemicolectomy with formation of stoma
3202400	High anterior resection of rectum
3202500	Low anterior resection of rectum
3203000	Rectosigmoidectomy with formation of stoma
3452802	Insertion of vascular access device
3553000	Subtotal amputation of clitoris
3553001	Total amputation of clitoris
3553600	Hemivulvectomy
3553601	Vulvectomy, unilateral
3553602	Vulvectomy, bilateral
3554800	Radical vulvectomy
3555100	Radical excision of pelvic lymph nodes via laparoscopy for gynaecological malignancy
3555101	Radical excision of pelvic lymph nodes for gynaecological malignancy
3556000	Partial vaginectomy
3556001	Partial vaginectomy
3556002	Partial vaginectomy
3561500	Biopsy of vulva
3561800	Cone biopsy of cervix
3561801	Cone biopsy of cervix by laser
3561802	Repair of cervix
3561803	Other procedures on cervix

(continued)

Table D4.19 (continued): Selected ACHI procedure codes[a] and corresponding procedure names for hospitalisations due to all gynaecological cancers combined[b], Australia, 2009–10

ACHI[c] procedure code	Corresponding procedure names
3561804	Amputation of cervix
3562000	Biopsy of endometrium
3563800	Laparoscopic wedge resection of ovary
3563801	Laparoscopic partial oophorectomy
3563802	Laparoscopic oophorectomy, unilateral
3563803	Laparoscopic oophorectomy, bilateral
3563804	Laparoscopic ovarian cystectomy, unilateral
3563805	Laparoscopic ovarian cystectomy, bilateral
3563806	Laparoscopic salpingotomy
3563807	Laparoscopic partial salpingectomy, unilateral
3563808	Laparoscopic partial salpingectomy, bilateral
3563809	Laparoscopic salpingectomy, unilateral
3565300	Subtotal abdominal hysterectomy
3565301	Total abdominal hysterectomy
3565304	Total abdominal hysterectomy with removal of adnexa
3565800	Debulking of uterus preceding hysterectomy
3566100	Abdominal hysterectomy with extensive retroperitoneal dissection
3566400	Radical abdominal hysterectomy with radical excision of pelvic lymph nodes
3566401	Radical vaginal hysterectomy with radical excision of pelvic lymph nodes
3566700	Radical abdominal hysterectomy
3566701	Radical vaginal hysterectomy
3567000	Abdominal hysterectomy with radical excision of pelvic lymph nodes
3567302	Vaginal hysterectomy with removal of adnexa
3572000	Debulking of lesion of pelvic cavity
3572300	Laparoscopic pelvic or abdominal lymph node sampling for staging of gynaecological malignancy
3572301	Pelvic or abdominal lymph node sampling for staging of gynaecological malignancy
3572302	Laparoscopic para-aortic lymph node sampling for staging of gynaecological malignancy
3572303	Para-aortic lymph node sampling for staging of gynaecological malignancy
3572601	Staging laparotomy
3572900	Laparoscopic transposition of ovary
3572901	Transposition of ovary
3575000	Laparoscopically assisted vaginal hysterectomy
3575302	Laparoscopically assisted vaginal hysterectomy with removal of adnexa
3575302	Laparoscopically assisted vaginal hysterectomy with removal of adnexa
3575600	Laparoscopically assisted vaginal hysterectomy proceeding to abdominal hysterectomy
3575603	Laparoscopically assisted vaginal hysterectomy proceeding to abdominal hysterectomy with removal of adnexa

(continued)

Table D4.19 (continued): Selected ACHI procedure codes[a] and corresponding procedure names for hospitalisations due to all gynaecological cancers combined[b], Australia, 2009–10

ACHI[c] procedure code	Corresponding procedure names
3658800	Laparoscopic reimplantation of ureter into bladder, unilateral
3658801	Reimplantation of ureter into bladder, unilateral
3658802	Laparoscopic reimplantation of ureter into bladder, bilateral
3658803	Reimplantation of ureter into bladder, bilateral
3659100	Laparoscopic reimplantation of ureter into bladder with bladder flap, unilateral
3659101	Reimplantation of ureter into bladder with bladder flap, unilateral
3659102	Laparoscopic reimplantation of ureter into bladder with bladder flap, bilateral
3659103	Reimplantation of ureter into bladder with bladder flap, bilateral
3659104	Reimplantation of ureter into bladder with psoas hitch, unilateral
3659105	Reimplantation of ureter into bladder with psoas hitch, bilateral
3661200	Laparoscopic exploration of ureter
3661201	Exploration of ureter
3661500	Laparoscopic ureterolysis
3661501	Ureterolysis
3661502	Laparoscopic ureterolysis with repositioning of ureter
3661503	Ureterolysis with repositioning of ureter
3681200	Cystoscopy
3681201	Cystoscopy through artificial stoma
3681202	Endoscopic division of intraluminal bladder adhesions
3700000	Laparoscopic partial excision of bladder
3700001	Partial excision of bladder
3700800	Laparoscopic cystotomy [cystostomy]
3700801	Cystotomy [cystostomy]
3700802	Laparoscopic cystolithotomy
3700803	Cystolithotomy
3700804	Laparoscopic removal of foreign body from bladder
3700805	Removal of foreign body from bladder
3700806	Division of intraluminal bladder adhesions
3701100	Percutaneous cystotomy [cystostomy]
35638010	Laparoscopic salpingectomy, bilateral
35638011	Laparoscopic salpingo-oophorectomy, unilateral
35638012	Laparoscopic salpingo-oophorectomy, bilateral

(a) The surgical procedures shown in this table was selected by Cancer Australia and defined as general surgical, colorectal and urological procedures undertaken as part of the treatment of gynaecological cancer. This excludes procedures for diagnosis or pre-invasive lesions of the genital tract and ancillary procedures that may be also done as part of a gynaecological cancer operation.

(b) Pertain to hospitalisations in which the principal diagnosis was coded as C51–C58 in the ICD-10-AM.

(c) Australian Classification of Health Interventions, 6th edition.

Table D4.20: Twenty most common surgical procedures[a] for hospitalisations with a principal diagnosis of a gynaecological cancer[b], Australia, 2009–10

Surgical procedure description (ACHI[c] code)	Number[d,e]	Per cent[e]	Rank
Total abdominal hysterectomy with removal of adnexa	971	12.3	1
Division of abdominal adhesions	775	9.8	2
Debulking of lesion of pelvic cavity	479	6.1	3
Radical abdominal hysterectomy	437	5.5	4
Radical abdominal hysterectomy with radical excision of pelvic lymph nodes	394	5.0	5
Staging laparotomy	370	4.7	6
Laparoscopic division of abdominal adhesions	263	3.3	7
Abdominal hysterectomy with radical excision of pelvic lymph nodes	247	3.1	8
Appendicectomy	235	3.0	9
Laparoscopically assisted vaginal hysterectomy with removal of adnexa	210	2.7	10
Pelvic or abdominal lymph node sampling for staging of gynaecological malignancy	200	2.5	11
Cystoscopy	196	2.5	12
Ureterolysis	195	2.5	13
Hemivulvectomy	156	2.0	14
Radical vulvectomy	112	1.4	15
Debulking of uterus preceding hysterectomy	86	1.1	16
Laparoscopic pelvic or abdominal lymph node sampling for staging of gynaecological malignancy	80	1.0	17
Insertion of vascular access device	74	0.9	18
Abdominal hysterectomy with extensive retroperitoneal dissection	74	0.9	19
Para-aortic lymph node sampling for staging of gynaecological malignancy	71	0.9	20
Total surgical procedures	**6,830**	**86.5**	**. .**
Total overnight gynaecological cancer hospitalisations	**7,892**	**100.0**	**. .**

(a) General surgical, colorectal and urological procedures undertaken as part of the treatment of gynaecological cancer. This excludes procedures for diagnosis or pre-invasive lesions of the genital tract and ancillary procedures that may be also done as part of a gynaecological cancer operation.

(b) Pertain to hospitalisations in which the principal diagnosis is gynaecological cancer (ICD-10-AM codes C51–C58).

(c) Australian Classification of Health Interventions, 6th edition.

(d) Indicates the number of hospitalisations in which the listed procedure block was undertaken.

(e) The sum of the count of hospitalisations does not equal the total number of hospitalisations since no procedures, or multiple procedures, may be undertaken during each hospitalisation. For the same reason, the sum of the percentages does not equal 100. Furthermore, if multiple procedures were recorded from the same block number, only one procedure was counted.

Source: AIHW National Hospital Morbidity Database.

Additional tables for Chapter 5: Expenditure on gynaecological cancers

Table D5.1: Expenditure on hospital-admitted patient services and number of hospitalisations for ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by age group, 2004–05

Age group (years)	Hospital-admitted patient expenditure		Number of admitted patient hospitalisations[(a)]	Average expenditure per hospitalisation ($)
	$ (million)	Per cent		
Ovarian cancer				
<35	0.9	3.6	131	6,860
35–44	1.5	6.0	210	7,237
45–54	4.1	16.2	546	7,506
55–64	5.9	23.4	872	6,790
65–74	5.9	23.4	841	7,029
75–84	5.3	20.8	588	8,945
85+	1.7	6.5	159	10,379
Total	**25.3**	**100.0**	**3,347**	**7,547**
Uterine cancer				
<35	0.1	0.7	51	2,918
35–44	0.9	3.9	161	5,404
45–54	3.6	16.4	574	6,344
55–64	6.1	27.4	1,067	5,704
65–74	5.6	25.0	886	6,269
75–84	4.5	20.2	642	7,015
85+	1.4	6.5	202	7,128
Total	**22.2**	**100.0**	**3,583**	**6,208**
Cervical cancer				
<35	1.3	12.8	246	5,447
35–44	2.0	18.9	384	5,146
45–54	2.4	22.7	437	5,432
55–64	1.7	16.1	302	5,574
65–74	1.1	10.5	192	5,741
75–84	1.4	13.0	189	7,207
85+	0.6	5.9	81	7,591
Total	**10.5**	**100.0**	**1,831**	**5,709**

(Continued)

Table D5.1 (continued): Expenditure on hospital-admitted patient services and number of hospitalisations for ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by age group, 2004–05

Age group (years)	Hospital-admitted patient expenditure		Number of admitted patient hospitalisations[(a)]	Average expenditure per hospitalisation ($)
	$ (million)	Per cent		
All gynaecological cancers combined				
<35	2.6	4.2	483	5,474
35–44	4.5	7.1	802	5,605
45–54	10.5	16.5	1,667	6,274
55–64	14.3	22.6	2,398	5,973
65–74	13.7	21.6	2,111	6,472
75–84	13.1	20.6	1,680	7,774
85+	4.7	7.4	550	8,529
Total	**63.3**	**100.0**	**9,691**	**6,535**

(a) Expenditure for hospital-admitted patient services for all gynaecological cancers combined pertains to those hospitalisations for which the principal diagnosis was coded as C51–C58 or Z12.4 in the ICD-10-AM. The relevant ICD-10-AM code(s) are C56 and C57.0–C57.4 for ovarian cancer, C54–C55 for uterine cancer and C53 and Z12.4 for cervical cancer.

Source: AIHW Disease Expenditure Database.

Additional tables for Chapter 7: Burden of disease due to gynaecological cancers

Table D7.1: Estimated burden of disease due to ovarian, uterine and cervical cancer, by age group, 2012

	Disability-adjusted life years (DALYs)		
Age group (years)	**Ovarian cancer**	**Uterine cancer**	**Cervical cancer**
<1	0	0	0
1–4	0	0	0
5–9	2	0	0
10–14	7	0	0
15–19	18	0	5
20–24	45	0	18
25–29	148	24	157
30–34	259	51	421
35–39	299	70	337
40–44	367	160	305
45–49	633	507	398
50–54	1,045	516	409
55–59	1,698	653	342
60–64	1,848	707	434
65–69	1,918	845	323
70–74	1,462	634	325
75–79	1,616	515	263
80–84	986	315	202
85–89	626	194	121
90–94	175	81	59
95–99	47	15	9
100+	0	0	0
All ages[(a)]	**13,200**	**5,300**	**4,100**

(a) The estimates do not add up to total due to rounding.

Source: AIHW Burden of Disease database.

Additional tables for Chapter 8: Survival after a diagnosis of gynaecological cancer

Table D8.1: 1-, 5- and 10-year relative survival by age at diagnosis, ovarian, uterine and cervical cancer, and all gynaecological cancers combined, Australia, 2006–2010

Age at diagnosis (years)	Ovarian cancer		Uterine cancer		Cervical cancer		All gynaecological cancers combined	
	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI
				1-year relative survival				
<30[(a)]	93.8	88.4–96.7	96.0	74.7–99.5	93.3	88.9–96.0	93.8	91.0–95.8
30–39	92.0	86.9–95.2	97.1	93.0–98.8	95.8	93.8–97.2	95.6	94.2–96.7
40–49	92.7	90.0–94.7	96.7	94.8–97.9	93.4	91.1–95.2	94.3	93.1–95.3
50–59	89.9	87.7–91.7	95.8	94.7–96.7	85.8	82.0–88.9	92.8	91.8–93.6
60–69	83.6	81.1–85.9	95.1	94.1–96.1	79.9	75.1–83.8	90.2	89.2–91.2
70–79	65.6	62.1–68.8	90.8	89.0–92.4	74.6	68.3–79.9	80.7	79.1–82.2
80+	38.3	34.4–42.1	80.4	77.0–83.5	59.5	51.7–66.7	62.2	59.9–64.5
All ages	**76.7**	**75.3–78.0**	**92.9**	**92.2–93.6**	**86.8**	**85.4–88.1**	**86.5**	**85.9–87.0**
				5-year relative survival				
<30[(a)]	86.5	80.2–90.9	86.0	66.6–94.6	89.6	84.8–93.0	88.3	85.0–91.0
30–39	75.9	69.5–81.2	91.4	86.5–94.6	86.7	84.0–89.0	86.0	83.9–87.8
40–49	64.4	60.5–68.0	89.7	87.1–91.9	80.2	77.1–83.0	79.1	77.3–80.7
50–59	52.1	49.2–55.0	90.1	88.7–91.5	67.3	62.9–71.3	75.3	73.9–76.6
60–69	43.6	40.7–46.5	84.3	82.6–85.9	60.9	55.7–65.7	69.6	68.1–71.0
70–79	26.3	23.5–29.1	74.8	72.2–77.3	53.7	47.0–60.1	55.6	53.7–57.5
80+	15.9	13.1–19.0	58.8	54.2–63.4	30.1	23.2–37.6	39.0	36.4–41.6
All ages	**43.2**	**41.8–44.6**	**81.9**	**80.8–82.9**	**71.9**	**70.2–73.6**	**67.3**	**66.6–68.1**
				10-year relative survival				
<30[(a)]	83.8	77.3–88.6	86.2	66.8–94.8	89.8	85.0–93.2	87.3	83.8–90.1
30–39	66.5	59.6–72.6	89.6	84.2–93.3	84.4	81.5–86.9	82.2	79.9–84.3
40–49	53.7	49.6–57.6	85.1	82.0–87.7	77.8	74.5–80.7	73.8	71.9–75.6
50–59	40.2	37.3–43.1	87.3	85.5–88.9	62.9	58.4–67.1	69.1	67.5–70.6
60–69	31.6	28.8–34.5	81.1	79.0–83.1	51.4	46.2–56.5	62.2	60.5–63.9
70–79	18.1	15.6–20.9	70.0	66.6–73.3	45.8	38.6–53.0	48.6	46.4–50.8
80+	11.4	7.8–16.0	55.0	47.6–62.8	34.4	24.3–46.5	35.7	31.9–39.8
All ages	**33.8**	**32.4–35.2**	**78.3**	**77.0–79.6**	**68.2**	**66.4–70.0**	**61.6**	**60.7–62.4**

(a) Some published rates with broad confidence intervals should be interpreted and compared with caution.

Note: Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.

Source: AIHW Australian Cancer Database 2008.

Table D8.2: Relative survival by time period, ovarian cancer, Australia, 1982–1987 to 2006–2010

Years after diagnosis	1982–1987		1988–1993		1994–1999		2000–2005		2006–2010	
	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI
1	63.2	61.8–64.6	67.5	66.2–68.7	71.7	70.5–72.8	73.7	72.6–74.7	76.7	75.3–78.0
2	46.2	44.6–47.7	51.2	49.9–52.5	56.5	55.2–57.7	59.6	58.4–60.8	63.9	62.4–65.3
3	38.1	36.5–39.7	43.5	42.1–44.8	47.2	45.9–48.5	50.6	49.4–51.9	54.3	52.8–55.7
4	34.2	32.5–35.9	39.5	38.1–40.8	42.1	40.8–43.4	43.9	42.6–45.1	47.7	46.2–49.1
5	32.3	30.6–34.1	37.2	35.9–38.6	39.0	37.7–40.3	40.3	39.1–41.6	43.2	41.8–44.6
6	31.7	29.7–33.8	35.3	34.0–36.7	36.8	35.5–38.1	37.7	36.5–39.0	40.0	38.6–41.4
7	. .	. .	34.0	32.6–35.4	35.5	34.2–36.8	36.0	34.8–37.3	37.5	36.1–38.9
8	. .	. .	33.0	31.6–34.4	34.6	33.3–35.9	34.6	33.4–35.9	35.7	34.3–37.1
9	. .	. .	32.0	30.5–33.4	33.5	32.2–34.9	33.6	32.4–34.9	34.7	33.3–36.1
10	. .	. .	31.8	30.3–33.3	32.8	31.4–34.1	32.8	31.6–34.1	33.8	32.4–35.2
11	. .	. .	31.6	30.0–33.2	32.3	31.0–33.7	32.3	31.0–33.6	33.0	31.6–34.5
12	. .	. .	31.1	29.2–33.0	31.5	30.2–32.9	32.0	30.7–33.2	32.4	31.0–33.9
13	. .	. .	. .	. .	31.5	30.1–32.9	31.5	30.2–32.8	32.2	30.7–33.6
14	. .	. .	. .	. .	31.2	29.8–32.6	31.1	29.8–32.4	31.8	30.3–33.2
15	. .	. .	. .	. .	30.8	29.4–32.3	30.6	29.3–32.0	31.4	29.9–32.8
16	. .	. .	. .	. .	30.7	29.2–32.3	30.6	29.2–31.9	31.0	29.5–32.5
17	. .	. .	. .	. .	30.8	29.2–32.4	30.1	28.8–31.5	30.7	29.2–32.2
18	. .	. .	. .	. .	30.5	28.5–32.5	29.7	28.3–31.1	30.4	28.9–32.0
19	. .	. .	. .	. .	. .	. .	29.8	28.4–31.2	30.2	28.7–31.8
20	. .	. .	. .	. .	. .	. .	29.8	28.3–31.3	30.3	28.8–31.9
21	. .	. .	. .	. .	. .	. .	29.4	27.9–31.0	30.1	28.5–31.7
22	. .	. .	. .	. .	. .	. .	28.9	27.3–30.6	30.4	28.8–32.1
23	. .	. .	. .	. .	. .	. .	28.9	27.2–30.7	30.6	28.9–32.3
24	. .	. .	. .	. .	. .	. .	29.3	27.3–31.3	30.3	28.5–32.0
25	. .	. .	. .	. .	. .	. .	. .	. .	30.5	28.8–32.3
26	. .	. .	. .	. .	. .	. .	. .	. .	30.7	28.9–32.6
27	. .	. .	. .	. .	. .	. .	. .	. .	30.9	29.0–32.9
28	. .	. .	. .	. .	. .	. .	. .	. .	31.2	29.1–33.4
29	. .	. .	. .	. .	. .	. .	. .	. .	32.0	29.6–34.5

. . Not applicable

Note: Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.

Source: AIHW Australian Cancer Database 2008.

Table D8.3: Relative survival by time period, uterine cancer, Australia, 1982–1987 to 2006–2010

Years after diagnosis	1982–1987		1988–1993		1994–1999		2000–2005		2006–2010	
	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI
1	88.4	87.4–89.3	90.7	89.9–91.4	91.2	90.5–91.9	91.9	91.3–92.5	92.9	92.2–93.6
2	81.9	80.7–83.1	85.2	84.3–86.2	86.5	85.6–87.3	86.9	86.1–87.6	88.6	87.8–89.4
3	78.6	77.2–79.9	82.0	80.9–83.1	83.3	82.3–84.2	83.9	83.1–84.8	85.9	85.0–86.8
4	75.6	73.9–77.1	79.5	78.3–80.7	81.2	80.1–82.2	82.5	81.6–83.4	83.7	82.7–84.6
5	74.7	72.9–76.4	78.0	76.8–79.2	79.6	78.5–80.7	80.9	79.9–81.8	81.9	80.8–82.9
6	73.7	71.3–76.0	77.0	75.7–78.3	78.4	77.2–79.5	79.9	78.9–80.9	81.3	80.2–82.3
7	. .	. .	76.0	74.6–77.4	77.4	76.1–78.6	79.1	78.0–80.2	80.4	79.2–81.5
8	. .	. .	75.2	73.8–76.6	76.8	75.5–78.0	78.3	77.1–79.4	79.7	78.5–80.9
9	. .	. .	74.7	73.1–76.2	76.1	74.7–77.4	77.7	76.5–78.9	78.9	77.6–80.1
10	. .	. .	73.2	71.4–74.9	75.4	74.0–76.8	76.7	75.5–78.0	78.3	77.0–79.6
11	. .	. .	72.9	70.9–74.8	74.8	73.3–76.2	75.8	74.4–77.1	77.9	76.6–79.3
12	. .	. .	72.6	70.1–75.1	73.8	72.2–75.3	75.2	73.8–76.5	77.5	76.1–78.9
13	. .	. .	. .	. .	73.6	72.0–75.2	74.5	73.0–75.9	76.5	75.0–77.9
14	. .	. .	. .	. .	73.3	71.6–75.0	74.1	72.6–75.6	76.1	74.6–77.6
15	. .	. .	. .	. .	72.9	71.1–74.7	73.5	71.9–75.1	75.6	73.9–77.1
16	. .	. .	. .	. .	72.1	70.1–74.1	73.1	71.5–74.8	75.3	73.6–77.0
17	. .	. .	. .	. .	72.0	69.7–74.2	72.5	70.8–74.2	74.7	73.0–76.5
18	. .	. .	. .	. .	71.6	68.5–74.6	72.0	70.2–73.8	74.5	72.6–76.3
19	. .	. .	. .	. .	. .	. .	71.6	69.7–73.5	73.3	71.4–75.3
20	. .	. .	. .	. .	. .	. .	70.9	68.9–72.9	72.8	70.7–74.8
21	. .	. .	. .	. .	. .	. .	70.3	68.2–72.5	72.1	70.0–74.3
22	. .	. .	. .	. .	. .	. .	70.4	68.0–72.8	72.1	69.9–74.4
23	. .	. .	. .	. .	. .	. .	70.4	67.7–73.2	72.4	70.0–74.8
24	. .	. .	. .	. .	. .	. .	69.0	65.0–73.0	72.3	69.8–74.8
25	. .	. .	. .	. .	. .	. .	. .	. .	72.2	69.5–74.9
26	. .	. .	. .	. .	. .	. .	. .	. .	72.0	69.1–74.9
27	. .	. .	. .	. .	. .	. .	. .	. .	72.1	68.9–75.3
28	. .	. .	. .	. .	. .	. .	. .	. .	71.5	67.8–75.3
29	. .	. .	. .	. .	. .	. .	. .	. .	74.6	70.0–79.3

. . Not applicable

Note: Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.

Source: AIHW Australian Cancer Database 2008.

Table D8.4: Relative survival by time period, cervical cancer, Australia, 1982–1987 to 2006–2010

Years after diagnosis	1982–1987		1988–1993		1994–1999		2000–2005		2006–2010	
	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI
1	88.0	87.1–88.9	88.5	87.7–89.3	88.7	87.8–89.6	86.9	85.8–87.9	86.8	85.4–88.1
2	78.8	77.6–80.0	80.7	79.7–81.7	81.6	80.5–82.6	79.4	78.2–80.7	79.5	77.9–81.0
3	73.7	72.3–75.0	76.2	75.0–77.3	77.7	76.5–78.8	75.4	74.1–76.7	75.8	74.1–77.4
4	70.1	68.5–71.6	73.0	71.8–74.1	75.0	73.7–76.1	73.0	71.6–74.4	73.4	71.7–75.1
5	68.0	66.3–69.7	71.3	70.1–72.5	73.2	71.9–74.4	71.4	70.0–72.8	71.9	70.2–73.6
6	66.8	64.7–68.9	69.6	68.3–70.8	71.7	70.4–72.9	70.0	68.6–71.4	70.6	68.8–72.3
7	. .	. .	68.3	67.0–69.6	70.7	69.4–72.0	69.1	67.6–70.5	69.9	68.1–71.6
8	. .	. .	67.4	66.1–68.7	69.5	68.2–70.8	68.3	66.8–69.7	69.2	67.4–70.9
9	. .	. .	66.1	64.8–67.5	68.7	67.4–70.1	67.4	65.9–68.9	68.7	66.9–70.5
10	. .	. .	65.4	63.9–66.8	68.1	66.7–69.4	66.8	65.3–68.3	68.2	66.4–70.0
11	. .	. .	64.8	63.2–66.3	67.5	66.1–68.8	66.3	64.8–67.8	67.8	65.9–69.6
12	. .	. .	65.2	63.5–66.8	66.9	65.5–68.3	65.8	64.3–67.3	66.9	65.0–68.7
13	. .	. .	. .	. .	66.5	65.1–67.9	65.1	63.5–66.6	66.5	64.6–68.3
14	. .	. .	. .	. .	66.0	64.5–67.4	64.6	63.0–66.1	66.0	64.1–67.9
15	. .	. .	. .	. .	65.4	63.9–66.9	63.9	62.4–65.5	65.3	63.4–67.1
16	. .	. .	. .	. .	64.9	63.3–66.5	63.8	62.2–65.3	64.8	62.9–66.7
17	. .	. .	. .	. .	64.9	63.2–66.5	63.5	61.9–65.0	64.4	62.5–66.3
18	. .	. .	. .	. .	62.4	59.9–64.8	62.9	61.3–64.5	63.8	61.9–65.7
19	. .	. .	. .	. .	. .	. .	62.5	60.8–64.1	63.5	61.6–65.4
20	. .	. .	. .	. .	. .	. .	62.0	60.3–63.7	63.1	61.1–65.0
21	. .	. .	. .	. .	. .	. .	61.8	60.1–63.5	62.6	60.6–64.5
22	. .	. .	. .	. .	. .	. .	61.1	59.3–62.9	62.5	60.5–64.5
23	. .	. .	. .	. .	. .	. .	61.1	59.2–63.0	62.3	60.3–64.3
24	. .	. .	. .	. .	. .	. .	61.2	59.0–63.3	61.8	59.8–63.8
25	. .	. .	. .	. .	. .	. .	. .	. .	61.4	59.3–63.4
26	. .	. .	. .	. .	. .	. .	. .	. .	61.7	59.6–63.8
27	. .	. .	. .	. .	. .	. .	. .	. .	62.1	59.9–64.3
28	. .	. .	. .	. .	. .	. .	. .	. .	62.1	59.7–64.3
29	. .	. .	. .	. .	. .	. .	. .	. .	62.1	59.4–64.7

. . Not applicable

Note: Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.

Source: AIHW Australian Cancer Database 2008.

Table D8.5: Relative survival by time period, all gynaecological cancers combined, Australia, 1982–1987 to 2006–2010

Years after diagnosis	1982–1987		1988–1993		1994–1999		2000–2005		2006–2010	
	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI
1	80.9	80.2–81.5	82.8	82.3–83.4	84.3	83.8–84.8	85.0	84.5–85.5	86.5	85.9–87.0
2	70.3	69.5–71.1	73.3	72.7–74.0	75.5	74.9–76.2	76.2	75.6–76.8	78.7	78.1–79.4
3	64.8	63.9–65.7	68.3	67.6–68.9	70.2	69.6–70.9	71.0	70.4–71.7	73.7	73.0–74.4
4	61.3	60.3–62.2	65.1	64.4–65.8	67.0	66.3–67.7	67.7	67.0–68.4	70.0	69.2–70.7
5	59.6	58.5–60.6	63.3	62.6–64.0	64.9	64.2–65.6	65.3	64.6–66.0	67.3	66.6–68.1
6	58.8	57.5–60.0	61.8	61.1–62.6	63.2	62.5–63.9	63.7	63.0–64.4	65.7	64.9–66.5
7	. .	. .	60.7	59.9–61.4	62.1	61.4–62.8	62.6	61.9–63.3	64.3	63.5–65.1
8	. .	. .	59.8	58.9–60.6	61.2	60.4–61.9	61.5	60.8–62.3	63.1	62.3–63.9
9	. .	. .	58.8	58.0–59.7	60.4	59.6–61.1	60.7	59.9–61.5	62.3	61.4–63.1
10	. .	. .	57.9	57.0–58.8	59.7	58.9–60.5	59.9	59.1–60.6	61.6	60.7–62.4
11	. .	. .	57.5	56.5–58.5	59.2	58.3–60.0	59.2	58.4–60.0	61.0	60.1–61.9
12	. .	. .	57.4	56.2–58.5	58.4	57.6–59.3	58.6	57.8–59.4	60.3	59.4–61.2
13	. .	. .	. .	. .	58.1	57.3–59.0	58.0	57.2–58.9	59.7	58.8–60.6
14	. .	. .	. .	. .	57.8	56.9–58.7	57.6	56.7–58.4	59.3	58.4–60.2
15	. .	. .	. .	. .	57.3	56.4–58.2	56.9	56.1–57.8	58.7	57.8–59.7
16	. .	. .	. .	. .	56.9	55.9–57.9	56.7	55.8–57.6	58.3	57.3–59.3
17	. .	. .	. .	. .	56.8	55.7–57.9	56.2	55.3–57.1	57.8	56.8–58.8
18	. .	. .	. .	. .	55.5	54.0–57.0	55.7	54.8–56.7	57.4	56.4–58.4
19	. .	. .	. .	. .	. .	. .	55.5	54.5–56.4	56.9	55.8–57.9
20	. .	. .	. .	. .	. .	. .	55.1	54.1–56.0	56.5	55.5–57.6
21	. .	. .	. .	. .	. .	. .	54.7	53.7–55.7	56.1	55.0–57.2
22	. .	. .	. .	. .	. .	. .	54.3	53.2–55.4	56.1	55.0–57.3
23	. .	. .	. .	. .	. .	. .	54.3	53.1–55.5	56.2	55.0–57.3
24	. .	. .	. .	. .	. .	. .	54.2	52.7–55.7	55.9	54.7–57.1
25	. .	. .	. .	. .	. .	. .	. .	. .	55.8	54.6–57.0
26	. .	. .	. .	. .	. .	. .	. .	. .	55.9	54.7–57.2
27	. .	. .	. .	. .	. .	. .	. .	. .	56.2	54.8–57.5
28	. .	. .	. .	. .	. .	. .	. .	. .	56.2	54.7–57.7
29	. .	. .	. .	. .	. .	. .	. .	. .	57.4	55.7–59.2

. . Not applicable

Note: Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.

Source: AIHW Australian Cancer Database 2008.

Table D8.6: Five-year relative survival by age at diagnosis, ovarian cancer, Australia, 1982–1987 to 2006–2010

Age at diagnosis (years)	1982–1987		1988–1993		1994–1999		2000–2005		2006–2010	
	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI
<30	80.8	73.2–86.4	83.6	77.9–88.0	87.8	82.6–91.5	86.9	81.6–90.8	86.5	80.2–90.9
30–39	65.7	58.0–72.4	70.0	64.6–74.8	73.3	67.9–77.9	68.9	63.1–74.0	75.9	69.5–81.2
40–49	43.7	38.3–49.0	51.9	48.0–55.7	57.2	53.7–60.6	59.6	56.0–63.1	64.4	60.5–68.0
50–59	35.7	32.0–39.4	43.4	40.3–46.5	45.5	42.7–48.3	50.2	47.4–52.9	52.1	49.2–55.0
60–69	25.8	22.6–29.2	30.5	28.0–32.9	34.9	32.3–37.5	40.4	37.8–43.0	43.6	40.7–46.5
70–79	17.7	14.4–21.4	23.2	20.5–26.0	24.9	22.5–27.4	25.5	23.3–27.9	26.3	23.5–29.1
80+	n.p.	n.p.	13.7	10.2–17.8	13.2	10.5–16.3	14.5	12.0–17.4	15.9	13.1–19.0
All ages	**32.3**	**30.6–34.1**	**37.2**	**35.9–38.6**	**39.0**	**37.7–40.3**	**40.3**	**39.1–41.6**	**43.2**	**41.8–44.6**

n.p. Not published (due to small number of cases).

Note: Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.

Source: AIHW Australian Cancer Database 2008.

Table D8.7: Five-year relative survival by age at diagnosis, uterine cancer, Australia, 1982–1987 to 2006–2010

Age at diagnosis (years)	1982–1987		1988–1993		1994–1999		2000–2005		2006–2010	
	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI
<30[(a)]	n.p.	n.p.	87.0	56.8–96.7	94.0	77.4–98.6	88.8	68.9–96.4	86.0	66.6–94.6
30–39	88.3	80.0–93.4	92.1	86.2–95.6	91.7	86.4–95.1	90.7	85.8–94.0	91.4	86.5–94.6
40–49	86.9	82.1–90.5	91.9	89.2–93.9	89.4	86.9–91.5	85.6	83.0–87.8	89.7	87.1–91.9
50–59	85.4	82.7–87.8	86.9	84.9–88.7	88.2	86.5–89.8	87.5	86.0–88.9	90.1	88.7–91.5
60–69	74.9	71.8–77.8	79.2	77.2–81.2	82.8	80.9–84.6	82.7	80.9–84.3	84.3	82.6–85.9
70–79	61.6	56.7–66.4	71.3	68.2–74.3	72.5	69.9–75.1	76.8	74.4–79.0	74.8	72.2–77.3
80+	48.6	39.1–58.6	45.2	39.1–51.5	55.3	50.1–60.6	62.4	57.8–67.0	58.8	54.2–63.4
All ages	**74.7**	**72.9–76.4**	**78.0**	**76.8–79.2**	**79.6**	**78.5–80.7**	**80.9**	**79.9–81.8**	**81.9**	**80.8–82.9**

n.p. Not published (due to small number of cases)

(a) Some published rates with broad confidence intervals should be interpreted and compared with caution.

Note: Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.

Source: AIHW Australian Cancer Database 2008.

Table D8.8: Five-year relative survival by age at diagnosis, cervical cancer, Australia, 1982–1987 to 2006–2010

Age at diagnosis (years)	1982–1987		1988–1993		1994–1999		2000–2005		2006–2010	
	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI
<30	87.1	82.7–90.5	87.4	84.1–90.1	89.7	86.1–92.4	86.6	82.4–89.9	89.6	84.8–93.0
30–39	82.6	79.8–85.1	84.1	82.2–85.8	88.2	86.4–89.9	87.7	85.5–89.7	86.7	84.0–89.0
40–49	75.0	71.2–78.4	78.2	75.9–80.4	80.2	77.9–82.2	78.5	75.8–80.9	80.2	77.1–83.0
50–59	65.4	61.0–69.5	68.3	65.0–71.4	72.5	69.3–75.4	71.5	67.9–74.7	67.3	62.9–71.3
60–69	57.5	53.3–61.5	62.6	59.3–65.7	64.1	60.7–67.4	60.9	56.7–64.9	60.9	55.7–65.7
70–79	44.2	37.2–51.1	46.8	42.4–51.1	50.4	46.1–54.7	48.0	43.1–52.9	53.7	47.0–60.1
80+	n.p.	n.p.	31.4	24.0–39.6	33.9	27.2–41.0	37.8	31.2–44.7	30.1	23.2–37.6
All ages	**68.0**	**66.3–69.7**	**71.3**	**70.1–72.5**	**73.2**	**71.9–74.4**	**71.4**	**70.0–72.8**	**71.9**	**70.2–73.6**

n.p. Not published (due to small number of cases).

Note: Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.

Source: AIHW Australian Cancer Database 2008.

Table D8.9: Five-year relative survival by age at diagnosis, all gynaecological cancers combined, Australia, 1982–1987 to 2006–2010

Age at diagnosis (years)	1982–1987		1988–1993		1994–1999		2000–2005		2006–2010	
	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI
<30	85.7	82.3–88.5	86.7	84.1–88.9	88.8	86.1–91.0	87.0	84.0–89.4	88.3	85.0–91.0
30–39	80.7	78.2–82.9	82.5	80.8–84.1	86.3	84.6–87.7	84.8	82.9–86.5	86.0	83.9–87.8
40–49	68.9	66.2–71.4	75.0	73.3–76.6	76.7	75.2–78.2	75.9	74.3–77.4	79.1	77.3–80.7
50–59	64.1	62.0–66.1	68.3	66.7–69.9	70.9	69.4–72.3	73.5	72.2–74.8	75.3	73.9–76.6
60–69	55.5	53.5–57.6	59.7	58.2–61.2	64.6	63.1–66.0	66.5	65.1–67.9	69.6	68.1–71.0
70–79	43.2	40.3–46.0	50.2	48.2–52.1	52.7	51.0–54.4	54.0	52.4–55.6	55.6	53.7–57.5
80+	34.7	29.7–40.0	33.5	30.4–36.8	35.9	33.2–38.6	40.1	37.6–42.5	39.0	36.4–41.6
All ages	**59.6**	**58.5–60.6**	**63.3**	**62.6–64.0**	**64.9**	**64.2–65.6**	**65.3**	**64.6–66.0**	**67.3**	**66.6–68.1**

n.p. Not published (due to small number of cases).

Note: Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.

Source: AIHW Australian Cancer Database 2008.

Table D8.10: Five-year relative survival by remoteness area, ovarian, uterine and cervical cancer, and all gynaecological cancers combined, Australia, 2006–2010

Remoteness area[(a)]	Ovarian cancer		Uterine cancer		Cervical cancer		All gynaecological cancers combined	
	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI
Major cities	44.9	43.1–46.8	82.3	80.9–83.6	73.8	71.5–76.0	68.3	67.3–69.3
Inner regional	40.4	37.1–43.8	80.5	77.8–82.9	70.2	65.4–74.6	65.4	63.4–67.3
Outer regional	36.3	31.1–41.6	81.8	77.8–85.3	65.6	58.4–72.0	65.4	62.4–68.3
Remote and very remote	48.7	34.6–61.7	86.2	77.5–92.7	58.3	45.1–69.5	71.3	65.0–76.8
Total	**43.3**	**41.8–44.9**	**82.0**	**80.8–83.1**	**72.1**	**70.1–74.0**	**67.5**	**66.7–68.4**

(a) Remoteness is classified according to the Australian Standard Geographical Classification (ASGC) Remoteness Areas (see Appendix A).

Note: Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.

Source: AIHW Australian Cancer Database 2007.

Table D8.11: Five-year relative survival by socioeconomic status, ovarian, uterine and cervical cancer, and all gynaecological cancers combined, Australia, 2006–2010

Socioeconomic status[(a)]	Ovarian cancer		Uterine cancer		Cervical cancer		All gynaecological cancers combined	
	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI
1 (lowest)	40.3	36.8–43.7	82.2	79.7–84.5	65.6	61.1–69.8	66.6	64.8–68.5
2	40.8	37.3–44.2	81.4	78.7–83.8	67.6	63.1–71.7	65.8	63.9–67.7
3	43.4	39.8–46.9	80.6	77.8–83.1	74.7	70.2–78.7	67.0	65.0–68.9
4	45.2	41.6–48.7	82.1	79.4–84.7	77.5	73.2–81.3	69.3	67.4–71.2
5 (highest)	46.9	43.6–50.3	83.7	81.0–86.1	77.0	72.3–81.1	69.2	67.3–71.1
Total	**43.3**	**41.8–44.9**	**82.0**	**80.8–83.1**	**72.1**	**70.1–74.0**	**67.5**	**66.7–68.4**

(a) Socioeconomic status is classified according to the ABS Socio-Economic Indexes for Areas (SEIFA) Index of Relative Socio-economic Disadvantage (see Appendix A).

Note: Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.

Source: AIHW Australian Cancer Database 2007.

Table D8.12: International comparison of mortality-to-incidence ratios for ovarian, uterine and cervical cancer [(a)][(b)], 2008

Country or region	Ovarian cancer			Uterine cancer			Cervical cancer		
	Mortality: ASR	Incidence: ASR	Mortality-to-incidence ratio	Mortality: ASR	Incidence: ASR	Mortality-to-incidence ratio	Mortality: ASR	Incidence: ASR	Mortality-to-incidence ratio
Micronesia	5.2	6.1	0.9	5.3	8.0	0.7	3.4	9.5	0.4
Middle Africa	3.6	4.3	0.8	0.7	1.9	0.4	17.0	23.0	0.7
Eastern Africa	3.3	4.0	0.8	0.8	2.4	0.3	25.3	34.5	0.7
Melanesia	4.2	5.1	0.8	2.0	5.2	0.4	16.6	23.7	0.7
Western Africa	3.1	3.8	0.8	0.7	1.9	0.4	24.0	33.7	0.7
Northern Africa	3.7	4.8	0.8	0.7	2.2	0.3	4.0	6.6	0.6
Polynesia	3.8	5.0	0.8	2.6	11.5	0.2	6.0	16.7	0.4
Western Asia	3.6	4.8	0.8	1.5	5.6	0.3	2.1	4.5	0.5
South-Central Asia	4.1	5.5	0.7	2.0	2.1	1.0	14.1	24.6	0.6
Southern Africa	2.8	3.8	0.7	2.1	6.9	0.3	14.8	26.8	0.6
South-Eastern Asia	4.4	6.6	0.7	2.0	5.7	0.4	8.3	15.8	0.5
Central America	3.4	5.2	0.7	2.5	6.1	0.4	11.1	22.2	0.5
Caribbean	2.7	4.3	0.6	3.3	9.0	0.4	9.4	20.8	0.5
Northern America	5.4	8.7	0.6	2.4	16.4	0.1	1.7	5.7	0.3
World	***3.8***	***6.3***	***0.6***	***2.0***	***8.2***	***0.2***	***7.8***	***15.3***	***0.5***
New Zealand	5.0	8.5	0.6	2.4	12.4	0.2	1.6	5.5	0.3
Australia	***4.5***	***7.7***	***0.6***	***1.5***	***11.3***	***0.1***	***1.4***	***4.9***	***0.3***
Northern Europe	6.5	11.8	0.6	2.2	13.8	0.2	2.5	8.4	0.3
Western Europe	4.9	8.9	0.6	1.8	11.2	0.2	2.0	6.9	0.3
South America	3.4	6.2	0.5	1.7	4.4	0.4	10.8	24.1	0.4
Central and Eastern Europe	5.9	11.0	0.5	3.4	14.6	0.2	6.2	14.7	0.4
Southern Europe	4.2	8.4	0.5	1.9	10.4	0.2	2.5	8.1	0.3
Eastern Asia	1.8	4.3	0.4	2.2	10.3	0.2	3.9	9.6	0.4

(a) The ratios were based on estimates for 2008 by the International Agency for Research on Cancer (IARC) and are based on data from about 3 to 5 years earlier. The GLOBOCAN data for ovarian cancer pertain to cancers coded in ICD-10 as C56, uterine cancer to cancers coded in ICD-10 as C54 and cervical cancer coded in ICD-10 as C53.

(b) The mortality-to-incidence ratio equals the age-standardised mortality rate divided by the age-standardised incidence rate.

Source: Ferlay et al. 2010a.

Table D8.13: Five-year relative survival by type of ovarian cancer and age at diagnosis, Australia, 1982–2010

	<50 years		50–69 years		70+ years		All ages	
Type of ovarian cancer	**RS (%)**	**95% CI**	**RS (%)**	**95% CI**	**RS (%)**	**95% CI**	**RS (%)**	**95% CI**
Carcinoma	59.5	58.0–61.0	39.5	38.6–40.4	21.4	20.4–22.4	37.5	36.9–38.2
Serous carcinoma	*52.9*	*50.5–55.2*	*35.8*	*34.4–37.1*	*25.0*	*23.2–26.7*	*35.7*	*34.7–36.7*
Mucinous carcinoma	*74.8*	*71.6–77.7*	*54.5*	*51.4–57.5*	*37.6*	*33.3–42.0*	*56.8*	*54.7–58.9*
Endometrioid carcinoma	*75.7*	*72.2–78.8*	*65.4*	*62.5–68.1*	*53.8*	*48.3–59.1*	*66.0*	*63.9–68.0*
Clear cell carcinoma	*63.4*	*58.2–68.2*	*59.1*	*55.4–62.6*	*50.8*	*43.1–58.2*	*58.8*	*56.0–61.6*
Adenocarcinoma not otherwise specified	*37.9*	*33.8–42.1*	*20.1*	*18.4–21.9*	*7.4*	*6.3–8.6*	*16.0*	*15.0–17.1*
Other carcinoma	*54.9*	*49.4–60.1*	*32.1*	*28.8–35.5*	*10.6*	*8.8–12.6*	*24.5*	*22.7–26.4*
Sex cord-stromal tumours	83.0	75.1–88.6	76.7	68.6–83.1	69.7	53.6–83.7	77.6	72.3–82.2
Germ cell tumours	91.9	89.7–93.7	82.9	71.7–90.4	n.p.	n.p.	89.4	87.1–91.5
Other specified malignant neoplasm	53.0	43.6–61.5	31.9	27.4–36.4	22.7	18.2–27.6	30.8	27.7–33.9
Unspecified malignant neoplasm	76.7	66.8–84.0	36.9	30.4–43.4	4.5	3.3–6.0	14.8	12.9–16.9
Total	**64.4**	**63.1–65.7**	**39.9**	**39.0–40.8**	**20.2**	**19.3–21.1**	**38.5**	**37.9–39.1**

n.p. Not published (due to small number of cases)

Notes

1. All cases were coded as primary site, invasive ovarian cancer. Appendix Table D2.14 provides a list of the histological types included in each group.
2. Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.

Source: AIHW Australian Cancer Database 2008.

Table D8.14: Five-year relative survival by type of uterine cancer and age at diagnosis, Australia, 1982–2010

Type of uterine cancer	<50 years RS (%)	<50 years 95% CI	50–69 years RS (%)	50–69 years 95% CI	70+ years RS (%)	70+ years 95% CI	All ages RS (%)	All ages 95% CI
Carcinoma	92.5	91.5–93.4	87.4	86.9–88.0	72.4	71.2–73.6	83.2	82.7–83.7
Adenocarcinoma	*92.5*	*91.5–93.4*	*87.9*	*87.3–88.4*	*74.0*	*72.8–75.2*	*84.0*	*83.5–84.6*
Other carcinoma	*92.7*	*87.4–96.0*	*71.2*	*66.5–75.4*	*42.8*	*37.7–48.0*	*61.5*	*58.2–64.7*
Sarcoma	63.0	58.1–67.5	39.8	35.4–44.1	25.1	18.1–33.0	46.5	43.4–49.5
Other and unspecified malignant neoplasm	88.2	84.8–90.9	54.3	51.2–57.3	30.0	26.9–33.1	50.3	48.2–52.3
Total	**89.1**	**88.1–90.0**	**84.3**	**83.7–84.8**	**67.6**	**66.4–68.7**	**79.5**	**79.0–80.0**

Notes

1. All cases were coded as primary site, invasive uterine cancer. Appendix Table D2.15 provides a list of the histological types included in each group.
2. Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.

Source: AIHW Australian Cancer Database 2008.

Table D8.15: Five-year relative survival by type of cervical cancer and age at diagnosis, Australia, 1982–2010

Type of cervical cancer	<50 years RS (%)	<50 years 95% CI	50–69 years RS (%)	50–69 years 95% CI	70+ years RS (%)	70+ years 95% CI	All ages RS (%)	All ages 95% CI
Carcinoma	83.1	82.4–83.8	65.7	64.5–66.8	44.5	42.6–46.4	71.8	71.1–72.4
Squamous cell carcinoma	*82.6*	*81.7–83.3*	*66.4*	*65.1–67.7*	*46.9*	*44.7–49.1*	*71.7*	*70.9–72.4*
Adenocarcinoma	*88.9*	*87.5–90.1*	*65.9*	*62.9–68.8*	*35.6*	*30.8–40.4*	*75.8*	*74.4–77.2*
Adenosquamous carcinoma	*72.8*	*69.0–76.2*	*60.8*	*54.9–66.3*	*45.9*	*34.7–57.3*	*66.4*	*63.2–69.4*
Other carcinoma	*78.9*	*75.5–81.8*	*57.6*	*52.1–62.8*	*31.3*	*24.7–38.4*	*64.4*	*61.5–67.1*
Sarcoma	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	44.2	31.2–56.6
Other and unspecified malignant neoplasm	88.8	83.0–92.8	58.7	48.9–67.3	23.0	15.6–31.6	59.7	54.5–64.6
Total	**83.2**	**82.5–83.8**	**65.5**	**64.3–66.6**	**43.6**	**41.8–45.5**	**71.5**	**70.9–72.1**

n.p. Not published (due to small number of cases)

Notes

1 All cases were coded as primary site, invasive cervical cancer. Appendix Table D2.16 provides a list of the histological types included in each group.

2. Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.

Source: AIHW Australian Cancer Database 2008.

Table D8.16: Five-year relative survival by type of vaginal cancer, Australia, 1982–2010

Type of vaginal cancer	Relative survival (%)	95% confidence interval
Carcinoma	49.2	46.1–52.2
Squamous cell carcinoma	*50.6*	*47.2–54.0*
Adenocarcinoma	*45.7*	*37.4–53.8*
Other carcinoma	*37.8*	*26.8–49.1*
Melanoma	n.p.	n.p.
Other and unspecified malignant neoplasm	53.3	41.9–63.6
Total	**47.4**	**44.5–50.2**

n.p. Not published (due to small number of cases)

Notes

1 All cases were coded as primary site, invasive vaginal cancer. Appendix Table D2.17 provides a list of the histological types included in each group.

2. Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.

Source: AIHW Australian Cancer Database 2008.

Table D8.17: Five-year relative survival by type of vulval cancer, Australia, 1982–2010

Type of vaginal cancer	Relative survival (%)	95% confidence interval
Carcinoma	72.1	70.4–73.7
Squamous cell carcinoma	*71.3*	*69.5–73.0*
Adenocarcinoma	*84.5*	*78.9–89.4*
Other carcinoma	*51.6*	*38.8–64.0*
Melanoma	47.5	41.1–53.7
Other and unspecified malignant neoplasm	55.0	44.3–65.0
Total	**70.2**	**68.6–71.8**

Notes

1 All cases were coded as primary site, invasive vulval cancer. Appendix Table D2.18 provides a list of the histological types included in each group.

2. Relative survival was calculated using the period method. More information about the period method can be found in Box 8.1 and Appendix B.

Source: AIHW Australian Cancer Database 2008.

Additional tables for Chapter 9: Mortality from gynaecological cancer

Table D9.1: Mortality from ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by age at death, Australia, 2007

	Ovarian cancer			Uterine cancer			Cervical cancer			All gynaecological cancers combined		
Age group (years)	Deaths	Age-specific rate[(a)]	95% CI	Deaths	Age-specific rate[(a)]	95% CI	Deaths	Age-specific rate[(a)]	95% CI	Deaths	Age-specific rate[(a)]	95% CI
<50	69	0.9	0.7–1.2	13	0.2	0.1–0.3	52	0.7	0.5–0.9	139	1.9	1.6–2.2
50–54	47	6.7	4.9–8.9	11	1.6	0.8–2.8	26	3.7	2.4–5.5	84	12.0	9.6–14.9
55–59	80	12.6	10–15.6	30	4.7	3.2–6.7	11	1.7	0.9–3.1	126	19.8	16.5–23.6
60–64	93	17.5	14.1–21.4	34	6.4	4.4–8.9	28	5.3	3.5–7.6	164	30.9	26.3–36.0
65–69	126	30.9	25.7–36.8	36	8.8	6.2–12.2	14	3.4	1.9–5.8	183	44.9	38.6–51.8
70–74	87	26.0	20.8–32.0	43	12.8	9.3–17.3	12	3.6	1.9–6.3	155	46.2	39.3–54.1
75–79	118	39.5	32.7–47.3	50	16.7	12.4–22.1	20	6.7	4.1–10.3	198	66.3	57.4–76.2
80–84	113	46.5	38.4–56.0	49	20.2	14.9–26.7	21	8.6	5.4–13.2	203	83.6	72.5–95.9
85+	115	50.2	41.4–60.3	72	31.4	24.6–39.6	24	10.5	6.7–15.6	250	109.1	96–123.5
All ages[(b)]	**848**	**7.0**	**6.5–7.5**	**338**	**2.7**	**2.4–3.0**	**208**	**1.8**	**1.5–2.0**	**1,502**	**12.2**	**11.6–12.9**

(a) The rates are expressed per 100,000 females.

(b) The rates shown in this row were age-standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.

Source: National Mortality Database, AIHW.

Table D9.2: Mortality from ovarian, uterine and cervical cancer, by year of death registration[a], Australia, 1920 to 2007

	Ovarian cancer		Uterine cancer		Cervical cancer	
Year	ASR[b]	95% CI	ASR[b]	95% CI	ASR[b]	95% CI
1920	1.9	1.3–2.5	. .	. .	. .	. .
1921	2.9	2.2–3.7	. .	. .	. .	. .
1922	3.0	2.2–3.8	. .	. .	. .	. .
1923	3.5	2.7–4.3	. .	. .	. .	. .
1924	4.0	3.1–4.9	. .	. .	. .	. .
1925	4.4	3.5–5.4	. .	. .	. .	. .
1926	3.5	2.7–4.3	. .	. .	. .	. .
1927	4.3	3.5–5.2	. .	. .	. .	. .
1928	4.4	3.6–5.3	. .	. .	. .	. .
1929	4.7	3.8–5.7	. .	. .	. .	. .
1930	5.3	4.4–6.3	. .	. .	. .	. .
1931	6.1	5.2–7.1	. .	. .	. .	. .
1932	6.8	5.8–7.9	. .	. .	. .	. .
1933	6.3	5.3–7.2	. .	. .	. .	. .
1934	6.4	5.4–7.4	. .	. .	. .	. .
1935	6.8	5.8–7.9	. .	. .	. .	. .
1936	7.9	6.8–9.0	. .	. .	. .	. .
1937	6.3	5.3–7.2	. .	. .	. .	. .
1938	5.9	5.0–6.7	. .	. .	. .	. .
1939	7.7	6.7–8.7	. .	. .	. .	. .
1940	7.2	6.2–8.2	. .	. .	. .	. .
1941	6.7	5.8–7.6	. .	. .	. .	. .
1942	6.1	5.2–7.0	. .	. .	8.5	7.4–9.5
1943	6.6	5.7–7.6	. .	. .	9.4	8.3–10.5
1944	6.7	5.8–7.6	. .	. .	9.5	8.4–10.6
1945	7.7	6.7–8.6	. .	. .	8.2	7.2–9.2
1946	7.2	6.2–8.1	. .	. .	9.4	8.3–10.5
1947	7.8	6.8–8.7	. .	. .	9.7	8.6–10.8
1948	7.6	6.7–8.6	. .	. .	7.9	7.0–8.9
1949	8.6	7.6–9.6	. .	. .	9.8	8.7–10.8
1950	7.9	7.0–8.9	9.3	8.3–10.4	7.2	6.3–8.2
1951	8.0	7.1–8.9	8.6	7.6–9.6	8.0	7.1–9.0
1952	8.3	7.3–9.2	8.1	7.2–9.1	8.8	7.8–9.7
1953	8.4	7.4–9.3	8.9	7.9–9.9	8.2	7.3–9.1
1954	8.3	7.4–9.2	8.3	7.3–9.2	8.1	7.2–9.1
1955	7.6	6.7–8.5	7.3	6.4–8.2	7.9	7.0–8.8
1956	9.6	8.6–10.6	7.6	6.7–8.5	8.6	7.6–9.5
1957	9.2	8.3–10.1	7.5	6.6–8.4	9.0	8.1–10.0
1958	8.6	7.7–9.5	6.7	5.9–7.5	8.1	7.2–9.0
1959	8.9	8.0–9.8	7.0	6.1–7.8	8.3	7.5–9.2
1960	8.6	7.7–9.5	5.3	4.6–6.0	9.2	8.2–10.1
1961	8.4	7.5–9.2	5.3	4.6–6.1	8.7	7.8–9.6
1962	7.7	6.9–8.6	5.6	4.9–6.4	9.0	8.1–9.9
1963	9.7	8.8–10.6	5.2	4.5–5.9	8.3	7.5–9.2
1964	8.9	8.1–9.8	4.8	4.2–5.5	7.8	7.0–8.6
1965	8.4	7.6–9.2	5.1	4.5–5.8	7.8	7.0–8.7
1966	9.1	8.2–9.9	4.0	3.5–4.6	8.0	7.2–8.8

(Continued)

Table D9.2 (continued): Mortality from ovarian, uterine and cervical cancer, by year of death registration[a], Australia, 1920 to 2007

	Ovarian cancer		Uterine cancer		Cervical cancer	
Year	ASR[b]	95% CI	ASR[b]	95% CI	ASR[b]	95% CI
1967	8.8	8.0–9.7	4.8	4.2–5.5	7.8	7.0–8.6
1968	9.3	8.5–10.2	4.7	4.1–5.3	7.8	7.0–8.6
1969	8.9	8.1–9.8	4.4	3.8–5.0	7.2	6.4–7.9
1970	8.5	7.7–9.3	4.7	4.1–5.3	7.8	7.0–8.6
1971	8.4	7.6–9.2	4.6	4.1–5.2	6.9	6.2–7.6
1972	9.1	8.3–9.9	4.7	4.1–5.3	6.8	6.1–7.5
1973	9.1	8.3–9.8	4.1	3.6–4.7	7.1	6.4–7.8
1974	8.8	8.1–9.6	3.7	3.1–4.2	6.4	5.8–7.1
1975	8.9	8.2–9.7	4.0	3.5–4.6	6.5	5.8–7.1
1976	8.9	8.2–9.7	4.1	3.6–4.6	6.3	5.6–6.9
1977	9.2	8.5–10.0	3.6	3.1–4.1	5.4	4.9–6.0
1978	9.0	8.2–9.7	3.7	3.2–4.2	5.8	5.2–6.4
1979	8.8	8.0–9.5	3.6	3.1–4.0	5.3	4.7–5.8
1980	8.9	8.1–9.6	3.7	3.2–4.1	4.8	4.3–5.4
1981	8.8	8.0–9.5	3.5	3.1–4.0	5.5	5.0–6.1
1982	8.9	8.2–9.6	3.3	2.8–3.7	5.3	4.7–5.8
1983	8.9	8.2–9.6	3.5	3.1–4.0	5.0	4.4–5.5
1984	9.1	8.4–9.8	3.0	2.6–3.4	4.8	4.3–5.3
1985	8.0	7.4–8.7	3.9	3.4–4.4	5.1	4.6–5.6
1986	8.7	8.0–9.4	3.6	3.2–4.1	4.8	4.3–5.3
1987	8.3	7.6–8.9	3.2	2.8–3.6	4.4	4.0–4.9
1988	8.0	7.4–8.7	2.9	2.5–3.3	4.6	4.1–5.1
1989	8.2	7.6–8.9	3.5	3.1–3.9	4.6	4.1–5.1
1990	9.2	8.6–9.9	2.6	2.2–2.9	4.3	3.8–4.7
1991	8.8	8.1–9.4	3.0	2.7–3.4	4.1	3.7–4.5
1992	7.9	7.3–8.5	2.8	2.4–3.1	3.8	3.4–4.3
1993	8.1	7.5–8.7	2.9	2.6–3.3	3.7	3.3–4.1
1994	8.7	8.0–9.3	2.7	2.3–3.0	3.9	3.5–4.3
1995	8.0	7.4–8.5	3.1	2.7–3.4	3.8	3.4–4.2
1996	8.8	8.2–9.5	2.9	2.6–3.3	3.3	2.9–3.6
1997	7.8	7.2–8.4	2.8	2.4–3.1	3.1	2.8–3.5
1998	7.7	7.2–8.3	2.6	2.3–2.9	2.7	2.4–3.1
1999	7.4	6.9–8.0	2.5	2.2–2.8	2.2	1.9–2.5
2000	7.6	7.1–8.1	2.5	2.2–2.8	2.6	2.3–3.0
2001	8.0	7.4–8.5	2.8	2.4–3.1	2.5	2.2–2.8
2002	8.1	7.5–8.6	3.1	2.8–3.5	2.1	1.9–2.4
2003	7.2	6.7–7.7	2.6	2.3–2.9	2.2	1.9–2.5
2004	7.6	7.1–8.1	2.8	2.5–3.2	1.9	1.6–2.1
2005	7.6	7.1–8.1	3.0	2.7–3.3	1.9	1.7–2.2
2006	6.7	6.3–7.2	2.8	2.5–3.1	1.9	1.7–2.2
2007	7.0	6.5–7.5	2.7	2.4–3.0	1.8	1.5–2.0

. . Not applicable

(a) The data are based on year of registration of death rather than year of death.

(b) The rates shown in this row were age-standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.

Source: AIHW National General Record of Incidence of Mortality (GRIM) Books (AIHW 2011b)

Table D9.3: Mortality from ovarian, uterine and cervical cancer, and all gynaecological cancers combined, Australia, 1982 to 2007

	Ovarian cancer			Uterine cancer			Cervical cancer			All gynaecological cancers		
Years	Deaths	ASR[(a)]	95% CI	Deaths	ASR[(a)]	95% CI	Deaths	ASR[(a)]	95% CI	Deaths	ASR[(a)]	95% CI
1982	587	8.8	8.1–9.5	222	3.3	2.9–3.7	346	5.2	4.7–5.8	1,235	18.5	17.5–19.6
1983	595	8.7	8.0–9.4	244	3.5	3.1–4.0	343	5.0	4.5–5.6	1,250	18.2	17.2–19.3
1984	637	9.0	8.3–9.7	222	3.2	2.8–3.6	339	4.9	4.4–5.4	1,302	18.6	17.6–19.6
1985	560	7.8	7.1–8.4	282	3.9	3.4–4.4	363	5.1	4.6–5.6	1,290	17.9	16.9–18.9
1986	636	8.6	8.0–9.3	266	3.5	3.1–4.0	341	4.6	4.2–5.2	1,320	17.9	16.9–18.9
1987	624	8.3	7.7–9.0	250	3.3	2.9–3.7	348	4.6	4.1–5.1	1,303	17.3	16.3–18.3
1988	602	7.8	7.2–8.5	227	2.9	2.6–3.3	345	4.5	4.0–5.0	1,250	16.2	15.3–17.2
1989	637	8.0	7.4–8.7	275	3.4	3.0–3.9	369	4.7	4.2–5.2	1,360	17.2	16.3–18.1
1990	719	9.0	8.3–9.7	217	2.6	2.3–3.0	339	4.2	3.8–4.7	1,356	16.8	15.9–17.7
1991	710	8.5	7.9–9.2	251	3.0	2.6–3.4	331	4.0	3.6–4.5	1,378	16.6	15.7–17.5
1992	663	7.8	7.3–8.5	237	2.8	2.5–3.2	322	3.8	3.4–4.2	1,289	15.2	14.4–16.1
1993	704	8.0	7.4–8.6	253	2.9	2.5–3.2	318	3.7	3.3–4.2	1,367	15.7	14.9–16.5
1994	730	8.4	7.8–9.0	248	2.7	2.4–3.1	341	3.9	3.5–4.4	1,400	16.0	15.1–16.8
1995	716	7.9	7.4–8.5	290	3.2	2.8–3.5	334	3.8	3.4–4.2	1,426	15.8	15.0–16.6
1996	784	8.5	7.9–9.1	273	2.9	2.5–3.2	301	3.3	2.9–3.6	1,446	15.6	14.8–16.4
1997	729	7.7	7.1–8.3	270	2.8	2.5–3.1	285	3.0	2.7–3.4	1,376	14.4	13.6–15.2
1998	750	7.7	7.2–8.3	255	2.5	2.2–2.9	260	2.7	2.4–3.0	1,380	14.1	13.3–14.8
1999	731	7.3	6.8–7.8	262	2.6	2.3–2.9	226	2.3	2.0–2.6	1,304	12.9	12.2–13.7
2000	780	7.6	7.1–8.1	261	2.5	2.2–2.8	265	2.6	2.3–3.0	1,405	13.6	12.9–14.3
2001	837	7.9	7.4–8.4	299	2.8	2.5–3.2	271	2.6	2.3–2.9	1,527	14.4	13.7–15.1
2002	842	7.8	7.3–8.4	349	3.2	2.8–3.5	217	2.0	1.8–2.3	1,500	13.8	13.1–14.5
2003	781	7.1	6.6–7.6	297	2.7	2.4–3.0	239	2.2	1.9–2.5	1,415	12.8	12.1–13.5
2004	852	7.6	7.1–8.1	323	2.8	2.5–3.1	210	1.9	1.6–2.1	1,488	13.1	12.4–13.8
2005	888	7.6	7.1–8.1	346	2.9	2.6–3.3	221	2.0	1.7–2.2	1,562	13.4	12.7–14.0
2006	810	6.8	6.4–7.3	351	2.9	2.6–3.2	227	2.0	1.7–2.2	1,483	12.4	11.8–13.1
2007	848	7.0	6.5–7.5	338	2.7	2.4–3.0	208	1.8	1.5–2.0	1,502	12.2	11.6–12.9

(a) The rates were standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.

Source: National Mortality Database, AIHW

Table D9.4: Mortality from ovarian cancer, by age at death, 1982 to 2007

	<50 years		50–69 years		70+ years		All ages	
Year	ASR[(a)]	95% CI	ASR[(a)]	95% CI	ASR[(a)]	95% CI	ASR[(a)]	95% CI
1982	1.7	1.4–2.2	21.1	18.8–23.7	37.3	32.5–42.7	8.8	8.1–9.5
1983	1.2	0.9–1.6	22.8	20.3–25.4	37.0	32.3–42.3	8.7	8.0–9.4
1984	1.5	1.1–1.9	22.0	19.6–24.6	40.2	35.3–45.5	9.0	8.3–9.7
1985	0.9	0.6–1.2	20.5	18.2–23.0	34.2	29.8–39.0	7.8	7.1–8.4
1986	1.7	1.3–2.1	19.2	17.0–21.6	40.5	35.8–45.6	8.6	8.0–9.3
1987	1.5	1.2–1.9	20.7	18.4–23.2	34.9	30.6–39.7	8.3	7.7–9.0
1988	1.4	1.1–1.8	18.6	16.5–20.9	34.9	30.7–39.6	7.8	7.2–8.5
1989	1.2	1.0–1.6	19.0	16.9–21.3	38.0	33.6–42.8	8.0	7.4–8.7
1990	1.5	1.2–1.9	19.9	17.7–22.2	44.3	39.6–49.4	9.0	8.3–9.7
1991	1.4	1.1–1.7	19.3	17.2–21.6	41.9	37.4–46.7	8.5	7.9–9.2
1992	1.2	1.0–1.5	18.5	16.4–20.8	36.9	32.8–41.4	7.8	7.3–8.5
1993	1.0	0.7–1.3	17.9	15.9–20.1	42.2	37.8–46.9	8.0	7.4–8.6
1994	1.3	1.1–1.7	19.5	17.4–21.9	39.9	35.8–44.5	8.4	7.8–9.0
1995	1.2	0.9–1.5	17.1	15.2–19.2	41.3	37.1–45.8	7.9	7.4–8.5
1996	1.2	0.9–1.5	18.1	16.1–20.3	45.6	41.3–50.3	8.5	7.9–9.1
1997	1.0	0.8–1.3	15.6	13.8–17.6	42.9	38.8–47.4	7.7	7.1–8.3
1998	0.8	0.6–1.0	16.8	15.0–18.9	42.4	38.4–46.8	7.7	7.2–8.3
1999	0.9	0.7–1.2	14.6	12.9–16.5	41.5	37.6–45.8	7.3	6.8–7.8
2000	0.9	0.7–1.2	15.7	14.0–17.6	42.5	38.5–46.7	7.6	7.1–8.1
2001	0.9	0.7–1.2	15.5	13.8–17.4	46.5	42.4–50.9	7.9	7.4–8.4
2002	0.9	0.7–1.1	16.8	15.0–18.7	43.1	39.2–47.3	7.8	7.3–8.4
2003	1.0	0.8–1.3	14.4	12.8–16.1	39.0	35.3–42.9	7.1	6.6–7.6
2004	0.8	0.6–1.0	16.0	14.3–17.8	43.0	39.1–47.1	7.6	7.1–8.1
2005	0.9	0.7–1.1	14.6	13.1–16.3	45.2	41.3–49.4	7.6	7.1–8.1
2006	0.8	0.6–1.0	13.1	11.7–14.7	40.7	36.9–44.6	6.8	6.4–7.3
2007	0.9	0.7–1.2	14.9	13.4–16.6	37.5	34.0–41.3	7.0	6.5–7.5

(a) The age-standardised rates were standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.

Source: National Mortality Database, AIHW.

Table D9.5: Mortality from uterine cancer, by age at death, 1982 to 2007

	<50 years		50–69 years		70+ years		All ages	
Year	ASR[(a)]	95% CI	ASR[(a)]	95% CI	ASR[(a)]	95% CI	ASR[(a)]	95% CI
1982	0.2	0.1–0.3	6.7	5.4–8.2	20.4	16.8–24.5	3.3	2.9–3.7
1983	0.2	0.1–0.4	6.8	5.6–8.3	22.4	18.7–26.5	3.5	3.1–4.0
1984	0.3	0.2–0.5	6.3	5.1–7.7	19.1	15.8–22.9	3.2	2.8–3.6
1985	0.3	0.2–0.5	7.1	5.8–8.6	25.1	21.4–29.4	3.9	3.4–4.4
1986	0.3	0.2–0.5	7.4	6.1–8.9	20.5	17.2–24.3	3.5	3.1–4.0
1987	0.2	0.1–0.4	6.7	5.5–8.1	20.1	16.8–23.7	3.3	2.9–3.7
1988	0.1	0.1–0.3	5.4	4.2–6.7	19.6	16.4–23.2	2.9	2.6–3.3
1989	0.2	0.1–0.4	5.9	4.7–7.2	23.2	19.8–27.0	3.4	3.0–3.9
1990	0.1	0.1–0.3	4.8	3.8–6.0	17.6	14.7–20.9	2.6	2.3–3.0
1991	0.2	0.1–0.4	4.8	3.8–6.0	20.9	17.8–24.4	3.0	2.6–3.4
1992	0.1	0.1–0.3	5.0	4.0–6.3	19.0	16.1–22.3	2.8	2.5–3.2
1993	0.1	0.1–0.3	5.3	4.2–6.5	19.1	16.2–22.4	2.9	2.5–3.2
1994	0.2	0.1–0.3	5.3	4.3–6.6	17.3	14.6–20.4	2.7	2.4–3.1
1995	0.2	0.1–0.3	5.5	4.4–6.7	21.9	18.9–25.2	3.2	2.8–3.5
1996	0.2	0.1–0.3	4.8	3.9–6.0	19.8	17.0–22.9	2.9	2.5–3.2
1997	0.2	0.1–0.3	5.2	4.1–6.4	18.3	15.6–21.3	2.8	2.5–3.1
1998	0.1	0.0–0.2	4.3	3.4–5.4	18.2	15.6–21.1	2.5	2.2–2.9
1999	0.2	0.1–0.3	4.7	3.7–5.8	16.8	14.3–19.6	2.6	2.3–2.9
2000	0.1	0.1–0.2	4.8	3.9–5.9	16.1	13.7–18.8	2.5	2.2–2.8
2001	0.3	0.2–0.5	5.6	4.6–6.8	16.3	13.9–19.0	2.8	2.5–3.2
2002	0.2	0.1–0.4	6.3	5.2–7.5	19.6	17.0–22.5	3.2	2.8–3.5
2003	0.2	0.1–0.4	5.1	4.1–6.2	16.6	14.3–19.3	2.7	2.4–3.0
2004	0.2	0.1–0.4	5.1	4.2–6.2	18.1	15.6–20.8	2.8	2.5–3.1
2005	0.2	0.1–0.4	5.8	4.9–7.0	18.2	15.7–20.9	2.9	2.6–3.3
2006	0.2	0.1–0.3	5.1	4.2–6.2	18.9	16.4–21.6	2.9	2.6–3.2
2007	0.2	0.1–0.3	4.7	3.9–5.7	18.2	15.8–20.8	2.7	2.4–3.0

(a) The age-standardised rates were standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.

Source: National Mortality Database, AIHW.

Table D9.6: Mortality from cervical cancer, by age at death, 1982 to 2007

	<50 years		50–69 years		70+ years		All ages	
Year	ASR[(a)]	95% CI	ASR[(a)]	95% CI	ASR[(a)]	95% CI	ASR[(a)]	95% CI
1982	1.8	1.4–2.3	11.2	9.5–13.1	19.1	15.7–23.1	5.2	4.7–5.8
1983	2.0	1.6–2.5	10.9	9.2–12.8	16.1	13.0–19.6	5.0	4.5–5.6
1984	1.9	1.5–2.3	9.3	7.7–11.0	19.0	15.7–22.8	4.9	4.4–5.4
1985	1.7	1.3–2.1	10.4	8.8–12.2	20.2	16.9–24.0	5.1	4.6–5.6
1986	1.6	1.3–2.0	10.6	9.0–12.5	15.3	12.4–18.5	4.6	4.2–5.2
1987	1.6	1.3–2.0	9.5	7.9–11.2	17.8	14.8–21.3	4.6	4.1–5.1
1988	1.6	1.2–1.9	9.0	7.5–10.7	18.0	15.0–21.5	4.5	4.0–5.0
1989	1.9	1.5–2.3	9.0	7.6–10.7	17.3	14.4–20.7	4.7	4.2–5.2
1990	2.2	1.9–2.7	7.4	6.1–8.9	12.8	10.4–15.7	4.2	3.8–4.7
1991	1.6	1.3–1.9	7.1	5.9–8.6	16.8	14.0–19.9	4.0	3.6–4.5
1992	1.6	1.3–1.9	5.8	4.6–7.1	17.0	14.2–20.1	3.8	3.4–4.2
1993	1.5	1.2–1.9	7.1	5.8–8.6	14.0	11.6–16.8	3.7	3.3–4.2
1994	1.5	1.2–1.9	8.1	6.7–9.6	14.1	11.6–16.8	3.9	3.5–4.4
1995	1.2	1.0–1.5	8.2	6.9–9.8	14.1	11.7–16.8	3.8	3.4–4.2
1996	1.4	1.1–1.7	5.1	4.0–6.3	14.4	12.0–17.1	3.3	2.9–3.6
1997	1.0	0.8–1.3	5.4	4.4–6.6	13.5	11.3–16.1	3.0	2.7–3.4
1998	1.0	0.8–1.3	4.9	3.9–6.1	11.2	9.2–13.5	2.7	2.4–3.0
1999	0.9	0.7–1.2	3.7	2.9–4.7	9.9	8.0–12.1	2.3	2.0–2.6
2000	1.0	0.8–1.3	4.5	3.6–5.6	11.1	9.2–13.4	2.6	2.3–3.0
2001	0.9	0.7–1.1	4.9	4.0–6.0	11.1	9.2–13.4	2.6	2.3–2.9
2002	0.7	0.5–0.9	4.0	3.2–5.0	8.5	6.8–10.5	2.0	1.8–2.3
2003	0.9	0.7–1.2	3.7	2.9–4.6	9.3	7.6–11.4	2.2	1.9–2.5
2004	0.7	0.5–0.9	3.3	2.6–4.2	7.9	6.3–9.7	1.9	1.6–2.1
2005	0.8	0.6–1.0	3.7	2.9–4.6	7.5	5.9–9.3	2.0	1.7–2.2
2006	0.8	0.6–1.1	3.5	2.7–4.3	7.8	6.3–9.6	2.0	1.7–2.2
2007	0.7	0.5–0.9	3.5	2.7–4.3	6.5	5.1–8.2	1.8	1.5–2.0

(a) The age-standardised rates were standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.

Source: National Mortality Database, AIHW.

Table D9.7: Mortality from all gynaecological cancers combined, by age at death, 1982 to 2007

	<50 years		50–69 years		70+ years		All ages	
Year	ASR[(a)]	95% CI	ASR[(a)]	95% CI	ASR[(a)]	95% CI	ASR[(a)]	95% CI
1982	3.8	3.2–4.4	41.0	37.7–44.4	85.6	78.2–93.6	18.5	17.5–19.6
1983	3.5	3.0–4.1	42.1	38.8–45.6	82.3	75.1–90.0	18.2	17.2–19.3
1984	3.9	3.3–4.5	39.7	36.5–43.1	88.6	81.3–96.4	18.6	17.6–19.6
1985	3.0	2.5–3.5	39.2	36.0–42.6	89.4	82.2–97.1	17.9	16.9–18.9
1986	3.7	3.2–4.3	38.4	35.3–41.7	85.1	78.3–92.5	17.9	16.9–18.9
1987	3.5	3.0–4.0	38.6	35.5–41.9	80.0	73.4–87.0	17.3	16.3–18.3
1988	3.2	2.7–3.7	34.3	31.4–37.4	79.9	73.4–86.8	16.2	15.3–17.2
1989	3.5	3.1–4.1	35.5	32.6–38.6	84.9	78.3–91.9	17.2	16.3–18.1
1990	3.9	3.4–4.5	33.8	30.9–36.8	81.9	75.5–88.7	16.8	15.9–17.7
1991	3.2	2.7–3.7	33.1	30.3–36.0	86.9	80.4–93.8	16.6	15.7–17.5
1992	3.0	2.6–3.5	30.3	27.6–33.1	79.1	73.0–85.5	15.2	14.4–16.1
1993	2.8	2.4–3.2	31.6	28.9–34.5	83.0	76.9–89.5	15.7	14.9–16.5
1994	3.2	2.7–3.6	34.3	31.5–37.3	77.1	71.3–83.3	16.0	15.1–16.8
1995	2.6	2.3–3.1	31.9	29.2–34.8	84.3	78.3–90.7	15.8	15.0–16.6
1996	2.7	2.3–3.2	29.5	26.9–32.2	86.5	80.5–92.9	15.6	14.8–16.4
1997	2.3	1.9–2.7	27.4	24.9–29.9	81.7	76.0–87.8	14.4	13.6–15.2
1998	2.0	1.7–2.4	27.1	24.7–29.6	81.1	75.4–87.0	14.1	13.3–14.8
1999	2.1	1.7–2.4	24.2	22.0–26.6	74.2	68.9–79.8	12.9	12.2–13.7
2000	2.1	1.8–2.5	26.1	23.8–28.5	77.1	71.8–82.8	13.6	12.9–14.3
2001	2.3	2.0–2.7	27.2	24.9–29.6	82.2	76.7–87.9	14.4	13.7–15.1
2002	1.9	1.6–2.2	28.2	25.9–30.7	76.9	71.7–82.5	13.8	13.1–14.5
2003	2.2	1.9–2.6	24.3	22.2–26.5	71.4	66.4–76.7	12.8	12.1–13.5
2004	1.8	1.5–2.1	25.9	23.7–28.1	74.9	69.8–80.3	13.1	12.4–13.8
2005	2.0	1.7–2.3	24.8	22.8–27.0	78.3	73.2–83.8	13.4	12.7–14.0
2006	2.0	1.6–2.3	22.7	20.8–24.7	73.0	68.1–78.3	12.4	11.8–13.1
2007	1.9	1.6–2.2	24.0	22.1–26.1	68.7	64.0–73.7	12.2	11.6–12.9

(a) The age-standardised rates were standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.

Source: National Mortality Database, AIHW.

Table D9.8: Projected number of deaths[a][b] and age-standardised rates[c] with 95% prediction intervals, 2011–2020: ovarian, uterine and cervical cancer

	Estimated number of deaths			Estimated age-standardised rates		
Year	Deaths	Lower 95% PI	Upper 95% PI	Rates	Lower 95% PI	Upper 95% PI
			Ovarian cancer			
2011	1,020	905	1,130	7.5	6.8	8.3
2012	1,050	930	1,170	7.5	6.7	8.3
2013	1,080	950	1,200	7.5	6.7	8.3
2014	1,110	975	1,230	7.5	6.7	8.3
2015	1,140	1,000	1,270	7.5	6.7	8.3
2016	1,170	1,030	1,310	7.5	6.7	8.3
2017	1,200	1,060	1,350	7.5	6.7	8.4
2018	1,240	1,090	1,390	7.5	6.7	8.4
2019	1,280	1,120	1,430	7.6	6.7	8.4
2020	1,310	1,150	1,480	7.6	6.7	8.4
			Uterine cancer			
2011	380	340	425	2.8	2.5	3.1
2012	395	350	435	2.8	2.5	3.1
2013	405	355	450	2.8	2.5	3.1
2014	415	365	465	2.8	2.4	3.1
2015	425	370	480	2.8	2.4	3.2
2016	440	380	495	2.8	2.4	3.2
2017	450	390	510	2.8	2.4	3.2
2018	460	395	530	2.8	2.4	3.2
2019	475	405	545	2.8	2.4	3.3
2020	485	410	560	2.8	2.4	3.3
			Cervical cancer			
2011	220	185	255	1.7	1.5	2.0
2012	220	185	250	1.7	1.4	1.9
2013	215	180	250	1.6	1.4	1.9
2014	210	180	245	1.5	1.3	1.8
2015	210	175	240	1.5	1.3	1.7
2016	205	175	240	1.4	1.2	1.7
2017	205	170	235	1.4	1.2	1.6
2018	200	170	235	1.3	1.1	1.6
2019	200	165	230	1.3	1.1	1.5
2020	195	165	230	1.3	1.1	1.5

(a) Projected estimates are based on national cancer mortality data.

(b) Counts are rounded to the nearest 10. For counts less than 1,000 estimates are rounded to the nearest 5.

(c) Age-standardised rates are standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females.

Source: AIHW National Mortality Database.

Table D9.9: Mortality from ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by state and territory, Australia, 2003–2007

	Ovarian cancer			Uterine cancer			Cervical cancer			All gynaecological cancers combined		
State or territory	**Deaths**	**ASR[(a)]**	**95% CI**	**Deaths**	**ASR[(a)]**	**95% CI**	**Deaths**	**ASR[(a)]**	**95% CI**	**Deaths**	**ASR[(a)]**	**95% CI**
New South Wales	1,391	7.0	6.6–7.4	554	2.7	2.5–3.0	391	2.0	1.8–2.3	2,504	12.5	12.1–13.1
Victoria	1,177	8.0	7.6–8.5	409	2.7	2.4–3.0	225	1.6	1.4–1.8	1,938	13.1	12.5–13.7
Queensland	694	6.6	6.1–7.1	352	3.3	3.0–3.7	217	2.1	1.8–2.4	1,352	12.7	12.1–13.4
Western Australia	404	7.7	7.0–8.5	138	2.5	2.1–3.0	121	2.3	1.9–2.7	700	13.2	12.2–14.2
South Australia	325	6.4	5.7–7.2	132	2.5	2.1–3.0	87	1.8	1.5–2.3	614	12.1	11.1–13.1
Tasmania	118	7.8	6.4–9.3	37	2.4	1.7–3.3	41	2.9	2.1–4.0	209	13.9	12.1–16.0
Australian Capital Territory	62	8.4	6.4–10.7	25	3.4	2.2–5.1	12	1.4	0.7–2.5	102	13.6	11.0–16.5
Northern Territory	8	2.5	0.9–5.3	8	3.6	1.3–7.4	11	4.0	1.6–7.7	31	10.9	6.9–16.3
Total	**4,179**	**7.2**	**7.0–7.4**	**1,655**	**2.8**	**2.7–2.9**	**1,105**	**2.0**	**1.8–2.1**	**7,450**	**12.8**	**12.5–13.1**

(a) The age-standardised rates were standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females. The rates are based on the total number of deaths over the 5-year period from 2003–2007.

Source: AIHW National Mortality Database.

Table D9.10: Mortality from ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by remoteness area, Australia, 2003–2007

	Ovarian cancer			Uterine cancer			Cervical cancer			All gynaecological cancers combined		
Remoteness area[a]	**Deaths**	**ASR[b]**	**95% CI**	**Deaths**	**ASR[b]**	**95% CI**	**Deaths**	**ASR[b]**	**95% CI**	**Deaths**	**ASR[b]**	**95% CI**
Major cities	2,775	7.1	6.8–7.4	1,064	2.7	2.5–2.8	710	1.8	1.7–2.0	4,876	12.4	12.0–12.7
Inner regional	932	7.4	6.9–7.9	373	2.9	2.6–3.2	212	1.8	1.6–2.1	1,643	13.1	12.4–13.7
Outer regional	398	7.4	6.7–8.1	186	3.4	2.9–4.0	145	2.8	2.3–3.2	776	14.4	13.4–15.5
Remote and very remote	70	8.7	6.8–11.1	30	3.5	2.3–5.1	37	4.0	2.7–5.5	145	17.2	14.5–20.3
Not stated	4	. .	. .	2	. .	. .	2	. .	. .	10	. .	. .
Total	**4,179**	**7.2**	**7.0–7.4**	**1,655**	**2.8**	**2.7–2.9**	**1,105**	**2.0**	**1.8–2.1**	**7,450**	**12.8**	**12.5–13.1**

(a) Classified according to the Australian Standard Geographical Classification (ASGC) Remoteness Areas (see Appendix A).

(b) The age-standardised rates were standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females. The rates are based on the total number of deaths over the 5-year period from 2003–2007.

Source: National Mortality Database, AIHW.

Table D9.11: Mortality from ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by socioeconomic status, Australia, 2003–2007

Socioeconomic status[a]	Ovarian cancer			Uterine cancer			Cervical cancer			All gynaecological cancers combined		
	Deaths	ASR[b]	95% CI	Deaths	ASR[b]	95% CI	Deaths	ASR[b]	95% CI	Deaths	ASR[b]	95% CI
1 (Lowest)	814	7.0	6.5–7.5	368	3.1	2.8–3.4	274	2.5	2.2–2.8	1,553	13.3	12.7–14.0
2	903	7.3	6.8–7.8	363	2.9	2.6–3.2	249	2.1	1.9–2.4	1,637	13.2	12.6–13.9
3	804	7.1	6.7–7.7	300	2.6	2.3–3.0	221	2.0	1.8–2.3	1,429	12.6	12.0–13.3
4	745	6.9	6.4–7.4	308	2.8	2.5–3.1	204	1.9	1.6–2.1	1,352	12.3	11.7–13.0
5 (Highest)	894	7.6	7.1–8.1	305	2.5	2.2–2.8	149	1.3	1.1–1.5	1,438	12.1	11.4–12.7
Not stated	19	. .	. .	10	. .	. .	9	. .	. .	41	. .	. .
Total	**4,179**	**7.2**	**7.0–7.4**	**1,655**	**2.8**	**2.7–2.9**	**1,105**	**2.0**	**1.8–2.1**	**7,450**	**12.8**	**12.5–13.1**

(a) Classified using the ABS Index of Relative Socio-economic Disadvantage (see Appendix A).

(b) The age-standardised rates were standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females. The rates are based on the total number of deaths over the 5-year period from 2003–2007.

Source: National Mortality Database, AIHW.

Table D9.12: Mortality from ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by Aboriginal and Torres Strait Islander status, New South Wales, Queensland, South Australia and the Northern Territory, 2003–2007

	Ovarian cancer			Uterine cancer			Cervical cancer			All gynaecological cancers combined		
Indigenous status	**Deaths**	**ASR[(a)]**	**95% CI**	**Deaths**	**ASR[(a)]**	**95% CI**	**Deaths**	**ASR[(a)]**	**95% CI**	**Deaths**	**ASR[(a)]**	**95% CI**
Indigenous	25	7.0	4.3–10.8	23	6.6	4.0–10.3	43	9.0	6.1–12.6	97	24.1	18.9–30.1
Non-Indigenous	2,374	6.7	6.4–7.0	1,018	2.8	2.6–3.0	657	1.9	1.8–2.1	4,370	12.3	11.9–12.6
Not stated	19	. .	. .	5	. .	. .	6	. .	. .	34	. .	. .
Total	**2,418**	**6.7**	**6.5–7.0**	**1,046**	**2.9**	**2.7–3.1**	**706**	**2.0**	**1.9–2.2**	**4,501**	**12.5**	**12.2–12.9**

(a) The age-standardised rates were standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females. The rates are based on the total number of deaths over the 5-year period from 2003–2007.

Source: National Mortality Database, AIHW.

Table D9.13: Mortality from ovarian, uterine and cervical cancer, and all gynaecological cancers combined, by country/region of birth, 2003–2007

	Ovarian cancer			Uterine cancer			Cervical cancer			All gynaecological cancers combined		
Country/region of birth[a]	Deaths	ASR[b]	95% CI	Deaths	ASR[b]	95% CI	Deaths	ASR[b]	95% CI	Deaths	ASR[b]	95% CI
Americas	34	8.3	5.5–11.8	12	3.3	1.6–5.8	17	4.0	2.2–6.5	65	16.1	12.2–20.8
North-West Europe, excl. UK and Ireland	148	8.2	6.8–9.7	58	3.2	2.4–4.1	31	2.6	1.6–3.9	254	14.8	12.9–17.0
Southern and Eastern Europe	400	7.8	7.0–8.6	188	3.4	2.9–4.0	84	1.8	1.4–2.3	734	14.0	12.9–15.2
United Kingdom (UK) and Ireland	506	8.3	7.6–9.2	163	2.6	2.2–3.1	92	1.7	1.3–2.1	822	13.6	12.7–14.6
Oceania and Antarctica (excl. Australia)	66	6.2	4.7–8.1	36	3.6	2.5–5.1	35	2.5	1.7–3.5	148	13.4	11.1–15.9
Australia	2,749	7.0	6.8–7.3	1,101	2.8	2.6–3.0	769	2.0	1.9–2.2	4,966	12.7	12.3–13.0
Africa and Middle East	95	8.4	6.7–10.3	31	2.9	2.0–4.2	13	1.1	0.6–2.0	140	12.6	10.5–14.9
Asia	167	5.5	4.7–6.5	58	2.0	1.5–2.6	59	1.8	1.4–2.4	293	9.7	8.6–10.9
Inadequately described, not stated or unknown	14	. .	. .	8	. .	. .	5	. .	. .	28	. .	. .
Total	**4,179**	**7.2**	**7.0–7.4**	**1,655**	**2.8**	**2.7–2.9**	**1,105**	**2.0**	**1.8–2.1**	**7,450**	**12.8**	**12.5–13.1**

(a) Classified according to the Standard Australian Classification of Countries, second edition (see Appendix A).

(b) The age-standardised rates were standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females. The rates are based on the total number of deaths over the 5-year period from 2003–2007. Countries/regions of birth are ordered in descending order according to the age-standardised rate for all gynaecological cancers combined.

Source: National Mortality Database, AIHW.

Table D9.14: International comparison of estimated mortality from ovarian, uterine and cervical cancer, and all gynaecological cancers combined, 2008[a]

	Ovarian cancer			Uterine cancer			Cervical cancer		
Country or region	**Deaths**	**ASR[b]**	**95% CI[c]**	**Deaths**	**ASR[b]**	**95% CI[c]**	**Deaths**	**ASR[b]**	**95% CI[c]**
Northern Europe	6,739	6.5	6.3–6.7	2,744	2.2	2.1–2.3	2,141	2.5	2.4–2.6
Central and Eastern Europe	16,257	5.9	5.8–6.0	10,366	3.4	3.3–3.5	15,437	6.2	6.1–6.3
Northern America	17,197	5.4	5.3–5.5	8,075	2.4	2.3–2.5	4,413	1.7	1.6–1.8
Micronesia	11	5.2	2.1–8.3	11	5.3	2.2–8.4	8	3.4	1.0–5.8
New Zealand	186	5.0	4.3–5.7	90	2.4	1.9–2.9	53	1.6	1.2–2.0
Western Europe	11,351	4.9	4.8–5.0	4,714	1.8	1.7–1.9	3,837	2.0	1.9–2.1
Australia	***893***	***4.5***	***4.2–4.8***	***304***	***1.5***	***1.3–1.7***	***241***	***1.4***	***1.2–1.6***
South-Eastern Asia	11,913	4.4	4.3–4.5	5,146	2.0	1.9–2.1	22,495	8.3	8.2–8.4
Southern Europe	7,101	4.2	4.1–4.3	4,037	1.9	1.8–2.0	3,459	2.5	2.4–2.6
Melanesia	121	4.2	3.5–4.9	43	2.0	1.4–2.6	463	16.6	15.1–18.1
South-Central Asia	27,334	4.1	4.1–4.1	5,146	2	1.9–2.1	95,871	14.1	14.0–14.2
Polynesia	10	3.8	1.4–6.2	7	2.6	0.7–4.5	16	6	3.1–8.9
World	***140,163***	***3.8***	***3.8–3.8***	***73,854***	***2***	***2.0–2.0***	***275,008***	***7.8***	***7.8–7.8***
Northern Africa	2,959	3.7	3.6–3.8	515	0.7	0.6–0.8	3,101	4	3.9–4.1
Western Asia	3,016	3.6	3.5–3.7	1,246	1.5	1.4–1.6	1,800	2.1	2.0–2.2
Middle Africa	1,309	3.6	3.4–3.8	222	0.7	0.6–0.8	5,705	17	16.6–17.4
South America	6,831	3.4	3.3–3.5	3,583	1.7	1.6–1.8	21,836	10.8	10.7–10.9
Central America	2,242	3.4	3.3–3.5	1,654	2.5	2.4–2.6	7,631	11.1	10.9–11.3
Eastern Africa	2,889	3.3	3.2–3.4	661	0.8	0.7–0.9	21,649	25.3	25.0–25.6
Western Africa	2,641	3.1	3.0–3.2	507	0.7	0.6–0.8	19,412	24	23.7–24.3
Southern Africa	645	2.8	2.6–3.0	466	2.1	1.9–2.3	3,467	14.8	14.3–15.3
Caribbean	639	2.7	2.5–2.9	811	3.3	3.1–3.5	2,245	9.4	9.0–9.8
Eastern Asia	17,879	1.8	1.8–1.8	21,993	2.2	2.2–2.2	39,728	3.9	3.9–3.9

(a) The data were estimated for 2008 by the International Agency for Research on Cancer (IARC) and are based on data from about 3 to 5 years earlier. The GLOBOCAN data for ovarian cancer pertain to cancers coded in ICD-10 as C56, uterine cancer to cancers coded in ICD-10 as C54 and cervical cancer coded in ICD-10 as C53.

(b) The age-standardised rates were standardised by the IARC using the Doll et al. (1966) World Standard Population and are expressed per 100,000 females. Countries or regions are ordered in descending order according to the age-standardised rate for ovarian cancer.

(c) The confidence intervals are approximations and were calculated by the AIHW (see Appendix B).

Source: Ferlay et al. 2010a.

Glossary

This section provides a general description of the terms used in this report. The terms have been defined in the context of this report; some terms may have other meanings in other contexts.

Additional diagnosis: A condition or complaint either coexisting with the principal diagnosis or arising during the episode of care.

Administrative databases: Observations about events that are routinely recorded or required by law to be recorded. Such events include births, deaths, hospital separations and cancer incidence. Administrative databases include the Australian Cancer Database, the National Mortality Database and the National Hospital Morbidity Database.

Admitted patient: A person who undergoes a hospital's formal admission process to receive treatment and/or care. Such treatment or care can occur in hospital and/or in the person's home (as a 'hospital-in-home' patient).

Age-specific rate: A rate for a specific age group. The numerator and denominator relate to the same age group.

Age-standardisation: A method of removing the influence of age when comparing populations with different age structures. This is usually necessary because the rates of many diseases vary strongly (usually increasing) with age. The age structures of the different populations are converted to the same 'standard' structure; then the disease rates that would have occurred with that structure are calculated and compared.

Average length of stay: The average (mean) number of patient days for admitted patient episodes. Patients admitted and separated on the same date are allocated a length of stay of 1 day.

Benign: Non-cancerous tumours that may grow larger but do not spread to other parts of the body.

Burden of disease and injury: Term referring to the quantified impact of a disease or injury on an individual or population, using the *disability-adjusted life year* (DALY) measure.

Cancer (malignant neoplasm): A large range of diseases in which some of the body's cells become defective, begin to multiply out of control, can invade and damage the area around them, and can also spread to other parts of the body to cause further damage.

Carcinoma: A cancer that begins in the lining layer (epithelial cells) of organs such as the ovaries.

Chemotherapy: The use of drugs (chemicals) to prevent or treat disease, with the term being applied for treatment of cancer rather than for other uses.

Comorbidity: When a person has two or more health problems at the same time.

Confidence interval (CI): A statistical term describing a range (interval) of values within which we can be 'confident' that the true value lies, usually because it has a 95% or higher chance of doing so.

Constant prices: Dollar amounts for different years that are adjusted to reflect the prices in a chosen reference year. This provides a way of comparing expenditure over time on an equal value-for-value basis without the distorting effects of inflation. The comparison will reflect only the changes in the amount of goods and services purchased—changes in the 'buying power'—not the changes in prices of these goods and services caused by inflation.

Crude rate: The number of events in a given period divided by the size of the population at risk in a specified time period.

Crude survival: The proportion of people alive at a specified point in time subsequent to the diagnosis of cancer.

DALYs (disability-adjusted life years): A year of healthy life lost, either through premature death or equivalently through living with disability due to illness or injury. It is the basis unit used in *burden of disease and injury* estimates.

Death due to cancer: A death where the underlying cause is indicated as cancer.

Heath expenditure: Includes expenditure on health goods and services (for example, medications, aids and appliances, medical treatment, public health, research) which collectively are termed current expenditure; and on health-related investment which is often referred to as capital expenditure.

Hospitalisation: See *Separation*.

Incidence: The number of new cases (of an illness or event, and so on) occurring during a given period.

Indigenous: A person of Aboriginal and/or Torres Strait Islander descent who identifies as an Aboriginal and/or Torres Strait Islander.

International Statistical Classification of Diseases and Related Health Problems: The World Health Organization's internationally accepted classification of death and disease. The tenth revision (ICD-10) is currently in use. ICD-10-AM is the Australian modification of ICD-10; it is used for diagnoses and procedures recorded for patients admitted to hospitals (see Appendix E).

Invasive: See *Malignant*.

Length of stay: Duration of hospital stay, calculated by subtracting the date the patient was admitted from the day of separation. All leave days, including the day the patient went on leave, are excluded. A same-day patient is allocated a length of stay of 1 day.

Limited-duration prevalence: The number of people alive at a specific time who have been diagnosed with cancer over a specified period (such as the previous 5 or 25 years).

Malignant: A tumour with the capacity to spread to surrounding tissue or to other sites in the body.

Median: The midpoint of a list of observations that have been ranked from the smallest to the largest.

Metastasis: See *Secondary cancer*.

Mortality due to cancer: The number of deaths which occurred during a specified period (usually a year) for which the underlying cause of death was recorded as cancer.

Mortality-to-incidence ratio: The ratio of the age-standardised mortality rate for cancer to the age-standardised incidence rate for cancer.

New cancer case: See *Incidence*.

Neoplasm: An abnormal ('neo', new) growth of tissue. Can be 'benign' (not a cancer) or 'malignant' (a cancer). Also known as a tumour.

Non-Indigenous: People who have declared that they are not of Aboriginal or Torres Strait Islander descent.

Other Australians: Includes people who have declared that they are not of Aboriginal or Torres Strait Islander descent as well as those who have not stated their Indigenous status.

Overnight patient: An admitted patient who receives hospital treatment for a minimum of 1 night (that is, is admitted to, and separates from, hospital on different dates).

Patient days: The number of full or partial days of stay for patients who were admitted for an episode of care and who underwent separation during the reporting period. A patient who is admitted and separated on the same day is allocated one patient day.

Population estimates: Official population numbers compiled by the Australian Bureau of Statistics at both state and territory and statistical local area levels by age and sex, as at 30 June each year. These estimates allow comparisons to be made between geographical areas of differing population sizes and age structures (see Appendix E).

Prevalence (or complete prevalence): The total number of people alive at a specific date who have ever been diagnosed with a particular disease such as cancer.

Primary cancer: A tumour that is at the site where it first formed (also see *Secondary cancer*).

Principal diagnosis: The diagnosis listed in hospital records to describe the problem that was chiefly responsible for the patient's episode of care in hospital.

Procedure: A clinical intervention that is surgical in nature, carries a procedural risk, carries an anaesthetic risk, requires specialised training and/or requires special facilities or equipment available only in the acute care setting.

Relative survival: The ratio of observed survival of a group of persons diagnosed with cancer to expected survival of those in the corresponding general population after a specified interval following diagnosis (such as 5 or 10 years).

Risk factor: Any factor that represents a greater risk of a health disorder or other unwanted condition or event. Some risk factors are regarded as causes of disease, others are not necessarily so. Along with their opposites, namely protective factors, risk factors are known as 'determinants'.

Same-day patient: A patient who is admitted to, and separates from, hospital on the same date.

Secondary cancer: A tumour that originated from a cancer elsewhere in the body. Also referred to as a metastasis.

Separation: An episode of care for an admitted patient which may include a total hospital stay (from admission to discharge, transfer or death) or a portion of a hospital stay that begins or ends in a change of type of care (for example, from acute to rehabilitation). In this report, separations are also referred to as hospitalisations.

Statistical significance: An indication from a statistical test that an observed difference or association may be significant or 'real' because it is unlikely to be due just to chance. A

statistical result is usually said to be 'significant' if it would occur by chance only once in 20 times or less often (see Appendix B for more information about statistical significance).

Symptom: Any indication of a disorder that is apparent to the person affected.

Underlying cause of death: The disease or injury that initiated the sequence of events leading directly to death.

YLD (years of healthy life lost due to disability): For each new case of cancer, YLD equals the average duration of the cancer (to remission or death) multiplied by a severity weight for cancer (which depends upon its disabling effect over the disease duration).

YLL (years of life lost): For each new case, YLL equals the number of years between premature death and the standard life expectancy for the individual.

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Related publications

The following AIHW publications relating to gynaecological cancer might be of interest:

- AIHW 2012. Cervical screening in Australia 2009–2010. Cancer series no. 67. Cat. no. CAN 63. Canberra: AIHW.
- AIHW 2010. Gynaecological cancer projections 2010–2015. Cancer series no. 53. Cat. no. CAN 49. Canberra: AIHW.
- AIHW & NBOCC 2010. Ovarian cancer in Australia: an overview, 2010. Cancer series no. 52. Cat. no. CAN 48. Canberra: AIHW.

Other AIHW resources that might also be of interest:

- AIHW 2012. Cancer incidence projects, Australia 2011 to 2020. Cancer series no. 66. Cat. no. CAN 62. Canberra: AIHW.
- AIHW 2010. Cancer in Australia: an overview, 2010. Cancer series no. 60. Cat. no. CAN 56. Canberra: AIHW.
- AIHW 2011. ACIM (Australian Cancer Incidence and Mortality) Books. Canberra: AIHW.

Data in this report provide a comprehensive picture of gynaecological cancers in Australia including how gynaecological cancer rates differ by geographical area, socioeconomic status, Aboriginal and Torres Strait Islander status and country of birth.