Appendix A: Classifications

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 and it was fully phased in by 1906. Since 1906, the ICD has been revised nine times in response to the recognition of new diseases (e.g. acquired immunodeficiency syndrome (AIDS)), increased knowledge of diseases and changing terminology in the description of diseases. Comparability factors are sometimes required between revisions to make comparisons valid if a disease definition changed between the revisions. For ovarian cancer, a comparability factor of 0.98 applies to convert ICD-9 mortality data to ICD-10 data (ABS 2007), while a comparability factor of '1' applies to convert such data from ICD-8 to ICD-9 standards (ABS 1981).

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 2008b), 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. Compatibility with ICD-10 at the higher levels (i.e. 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 (i.e. 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 was 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.

International Classification of Diseases for Oncology

Cancers were originally classified solely under the ICD classification system, based on topographic site and behaviour. However, during the creation of the ninth revision of ICD in the late 1960s, working parties suggested the creation of a separate classification for cancers that included improved morphological information. The first edition of the International Classification of Diseases for Oncology (ICD-O) was subsequently released in 1976 and, in this classification, cancers were coded by both morphology (histology type and behaviour) and topography (site).

Since the first edition of the ICD-O, a number of revisions have been made, mainly in the area of lymphomas and leukaemias. The current (third) edition was released in 2000 (Fritz et al. 2000) and is currently used by most state and territory cancer registries in Australia, as well as by the AIHW in regard to the Australian Cancer Database.

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 2001). This classification divides all areas of Australia into five categories—namely, *Major cities*, *Inner regional*, *Outer regional*, *Remote* and *Very remote* (AIHW 2004). For the purposes of this report, the categories of *Remote* and *Very remote* were collapsed due to the small number of cases in these two subgroups.

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 2008a). 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 living in that area. 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 socioeconomic status.

Standard Australian Classification of Countries

The Standard Australian Classification of Countries (SACC) is the Australian statistical standard for statistics classified by country (ABS 2008c). It is a classification of countries which is essentially based on the concept of geographic proximity. In its structure, 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, while the second edition—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 them multiplying the result by a constant (e.g. 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, for example, new cases of cancer or deaths from cancer 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 cancer is heavily dependent 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 (e.g. between Indigenous and other Australians). This standardisation process effectively removes the influence of age structure on the summary rate.

There are two methods 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 with two exceptions. The exceptions are the calculation of incidence and mortality rates by Indigenous status and by country/region of birth. There are relatively small numbers of cases of, and deaths from, ovarian cancer among Indigenous women and among Australian women born in some overseas regions; indirect age-standardisation is commonly used in such circumstances.

To age-standardise using either the direct or the indirect method, the first step is to calculate population numbers and numbers of cases (or deaths) in age ranges—typically 5-year age ranges. If direct standardisation is used, a key step is to multiply the age-specific population numbers for the reference population (e.g. the Australian population as at 30 June 2001 or the WHO 2000 World Standard Population) 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*). This is then used to derive a standardised incidence rate (or death rate) for the population of interest.

When indirect standardisation is used, a key step is to estimate an 'expected' incidence rate (or death rate) for the population of interest (such as Indigenous women) from the age-specific rates in the reference population (e.g. non-Indigenous women) and the age-specific population numbers for the population of interest. Details of the age-standardisation method used and the reference population for each of the relevant incidence and mortality analyses are summarised in Table B.1 (and noted in the footnotes to the relevant tables and graphs).

Table B.1: Age-standardisation method and reference population for analyses of differences in incidence and mortality rates by group

Variable	Age-standardisation method used	Reference population
State and territory	Direct	Australian population as at 30 June 2001
Remoteness area	Direct	Australian population as at 30 June 2001
Socioeconomic status	Direct	Australian population as at 30 June 2001
Indigenous status	Indirect	Non-Indigenous population
Country of birth	Indirect	Australian-born population

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 which is too small to allow differentiation between a real difference and one which 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. Judgement should, however, be exercised in deciding whether or not the difference is of any practical significance.

With one exception, the confidence intervals presented in this report were calculated using a method developed by Dobson and associates (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 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:

$$95\%\ \text{CI approximation} = \text{AS rate} \pm 1.96 \times \sqrt{\frac{\text{AS rate}}{\text{Number of cases}}}$$

Since the GLOBOCAN data are based on the estimates of the number of new cases and deaths from ovarian 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).

Definition of ovarian cancer

Definitions of ovarian cancer differ considerably in the literature, with the following two factors varying between definitions: what ICD codes are included in the definition; and whether or not borderline tumours are included. These two factors are discussed below.

What ICD codes are included in the definition

In the 9th revision of the ICD, ovarian cancers were grouped with cancers of 'other uterine adnexa' and coded as '183'. Examples of 'other uterine adnexa' cancers are cancers of the fallopian tube and of the parametrium. While the actual ICD-9 name for code '183' is 'Malignant neoplasm of ovary and other uterine adnexa', this grouping of cancers is often simply referred to as 'ovarian cancer' in the literature.

In the 10th revision of the ICD, ovarian cancers were coded separately and assigned the code of 'C56', with the remaining cancers from the ICD-9 code of '183' grouped with a number of other cancers in 'C57'. The code of 'C57' is labelled 'malignant neoplasm of other and unspecified female genital organs' (see Table B.2).

Table B.2: Codes for ovarian and associated cancers in the International Statistical Classification of Diseases and Related Health Problems, tenth revision (ICD-10)

ICD-10 codes	Type of cancer
C56	Malignant neoplasm of ovary
C57	Malignant neoplasm of other and unspecified female genital organs
C57.0	Fallopian tube (oviduct, uterine tube)
C57.1	Broad ligament
C57.2	Round ligament
C57.3	Parametrium (uterine ligament NOS)
C57.4	Uterine adnexa, unspecified
C57.7	Other specified female genital organs (Wolffian body or duct)
C57.8	Overlapping lesion of female genital organs (malignant neoplasm of female genital organs whose point of origin cannot be classified to any one of the categories C51–C57.7, C58) (tubo-ovarian, utero-ovarian)
C57.9	Female genital organ, unspecified (female genitourinary tract NOS)

Source: WHO 1992.

Cancers coded as 'C56' in ICD-10 are included for the analyses of ovarian cancer shown in this report that utilise the Australian Cancer Database (Chapters 2, 4 and 5), the National Mortality Database (Chapter 3) and the National Hospital Morbidity Database (Chapter 7). This is the same definition as has been used for ovarian cancer by the cancer registries in Victoria (Thursfield et al. 2009), Queensland (Queensland Cancer Registry & Cancer Council

Queensland 2008) and Tasmania (Dalton et al. 2008). However, different definitions for ovarian cancer have been used by other state and territory registries. For example, New South Wales and the Australian Capital Territory include the ICD-10 codes of 'C56 and C57.0–C57.7' (ACT Health 2007; Tracey et al. 2006, 2008), Western Australia includes the ICD-10 codes of 'C56 and C57.0–C57.9' (Threllfall et al. 2005) and South Australia includes the ICD-9 code of '183' (South Australia Cancer Registry 2008).

For the analyses shown in this report that are based on GLOBOCAN data (in Chapters 2, 3 and 4), the burden of disease report (Chapter 6), and the Disease Expenditure Database (Chapter 8), ovarian cancer was defined as the ICD-10 codes of C56 and C57.0–C57.4 (see Table B.2). This grouping of cancers is referred to as 'ovarian and related cancers' in this report.

Whether or not borderline tumours are included

In the second edition of the ICD-O, ovarian tumours of borderline malignancy were considered malignant. However, in the third edition of the ICD-O, they are considered to be of uncertain behaviour and are no longer considered malignant. Thus the number of cases that are considered to be ovarian cancer will be less when ICD-O-3 coding rules are used rather than ICD-O-2 rules.

The third edition of ICD-O was released in 2000, and has been implemented in cancer registries from the early 2000s onwards. Furthermore, each of the cancer registries has recoded their cancer data holdings for all years based on the ICD-O-3 coding rules. Thus the Australian data shown in this report for all years are comparable over time and exclude borderline cases of ovarian cancer.

For the earlier edition of this report (AIHW & NBCC 2006), tumours were classified according to ICD-O-2 and thus the data presented in that report are not strictly comparable to the results shown in this report. As shown in the earlier report, 6% of the ovarian cancer cases diagnosed in 2002 were borderline tumours.

Due to the varying approaches used to define ovarian cancer in the literature, comparisons of data from different sources must be done with care.

Incidence projections

To calculate the incidence projections shown in Chapter 2, ovarian cancer incidence data for females for the 10-year period from 1997 to 2006 were divided into 18 series—one for each 5-year age group. The incidence numbers were divided by the age-specific mid-year populations to obtain the age-specific incidence rates. Least squares linear regression was used to find the straight line of best fit through the 1997 to 2006 rates and to compute the various quantities needed for the 95% prediction intervals. The projected incidence rates were then multiplied by the estimated resident population to obtain the projected incidence numbers. The populations used were the ABS projected populations from Series 29(B) (ABS 2008b).

Mortality data differences

The state and territory data on mortality due to ovarian cancer that are shown in this report may not be comparable with data published by individual state and territory cancer registries for a number of reasons, including the following (Cancer Council Queensland 2009; Tracy et al. 2008):

- The state and territory mortality data presented 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 (see Appendix C). Information on cause of death in the NMD is sourced from the ABS which makes use of death certificate information to assign cause of death. In contrast, the state and territory cancer registries tend to make use of information from a number of different sources, including pathology reports and other notifications, to assign a cause of death.

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 ovarian 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 4). 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. For example, an MIR of 0.42 in a given year for all types of cancers means that for every 100 new cancer cases diagnosed that year, there were 42 deaths due to cancer in the same year (though the deaths need not be of the same people as the cases). 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, and
- 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 4 were extracted from the 2002 GLOBOCAN database (Ferlay et al. 2004).

Relative survival analysis

Relative survival estimates compare the survival of persons diagnosed with ovarian cancer (i.e. the observed survival) with the survival of the entire Australian population of the same sex and age in the same calendar year as the cancer cohort (i.e. the expected survival). Note that the actual cause of death (whether it is from ovarian cancer or another cause) is not of importance in these analyses. Thus, relative survival is defined as follows:

$$\text{relative survival} = \frac{\text{observed survival for cancer cohort}}{\text{expected survival for 'matched' population}}$$

The resulting value is usually given as a proportion. For example, if the observed 5-year survival of a particular cohort diagnosed with ovarian cancer was 0.60 (that is, 60% of them were still alive 5 years after diagnosis) and their expected survival, based on Australian life-tables, was 0.90 (that is, 90% of people with the same age- and sex-profile as the cohort would be expected to be alive 5 years later), then the 5-year relative survival would be 0.6/0.9 = 0.67 or 67%. One way to interpret this figure is that the 'average' person in the cancer cohort has a 67% chance of being alive 5 years after diagnosis *relative to others of the same sex and age*.

In order for the relative survival estimate to be a valid approximation of the probability that a person will not die of their diagnosed cancer within the given time interval, the presence of the cancer is assumed to be the only factor that distinguishes the cancer cohort from the general population (Ries et al. 2008). The degree to which this is true is not known.

Relative survival proportions have traditionally been calculated using the 'cohort method', and NBOCC preferred the use of that method for this report. In the cohort method, a cohort of people diagnosed with cancer is followed over time to estimate the proportion surviving for a selected time frame (e.g. 1, 5 or 10 years). An alternative approach to calculating relative survival is the period method, which was developed by Brenner and Gefeller (1996). This method examines the survival experience of people who were alive at the beginning of a particular recent calendar period and who were diagnosed with cancer before this period. Therefore, the period method might provide more up-to-date estimates of survival, especially in the presence of temporal trends affected by improvements in cancer detection and treatment. However, the cohort method is thought to provide more precise estimates (i.e. estimates with narrower confidence intervals).

An alternative to the calculation of relative survival proportions is to use the 'cause-specific model' to derive survival estimates. This model calculates survival based on deaths due to cancer-related causes alone. There are various advantages and disadvantages to using the cause-specific model (Le Teuff et al. 2005). Because the 2006 version of the Australian Cancer Database that was utilised for this report included a limited amount of cause of death information, this approach could not be used to calculate survival estimates.

Data from the ACD on the incidence of ovarian cancer were used to calculate observed survival proportions. These incidence data were linked to the National Death Index in order to obtain information on those people with ovarian cancer who died and the date on which this occurred (see Appendix C for more information on the data sets). In order to calculate the expected survival belonging to the age-, sex- and calendar-year matched population, ABS life tables for the population under study were used (ABS 2009b).

When comparing relative (or crude) survival estimates over time and/or between population subgroups it would seem appropriate to age-standardise the figures in order to

remove potential confounding by different age-structures. However, there are some undesirable features of doing so, as well as some difficulties in interpreting directly age-standardised survival estimates (Brenner et al. 2004; Brenner & Hakulinen 2003). For example, when numbers are small the age-specific survival for a certain age group and population subgroup may be undefined; hence the age-standardisation procedure breaks down. Also, the calculation of age-standardised survival can produce a figure that differs substantially from the unadjusted survival, even if it is adjusted to the original age distribution of the study population. In light of these and related shortcomings in the procedure, it was decided not to age-standardise the survival estimates produced for this report.

The software used to calculate the relative survival proportions was written by Dickman (2004). It uses the Ederer II method of calculating the interval-specific expected survivals. Further details on the approach used to calculate the relative survival estimates, including rules which were applied during data preparation, can be found in the 2008 report prepared by the AIHW on cancer survival and prevalence (AIHW, CA & AACR 2008).

Risk to age 75 and 85 years

The calculations of risk shown in this report are measures that approximate the risk of developing (or dying from) ovarian cancer before a given age, assuming that the risks at the time of estimation remained throughout life. It is based on a mathematical relationship with the cumulative rate. Note that in these risk factors, no account is taken of specific ovarian cancer risk factors. Further details on how the risks were calculated can be found in the 2008 *Cancer in Australia* report (AIHW & AACR 2008).

Appendix C: Data sources

To provide a comprehensive picture of national ovarian cancer statistics in this report, a range of data sources were used, including AIHW and external data sources. These data sources are described in this appendix.

Australian Cancer Database

The Australian Cancer Database (ACD) is a database that holds information about 1.8 million cancer cases of Australian residents who were diagnosed with cancer (other than basal call and squamous cell carcinomas of the skin) between 1982 and 2006. Data from this source are used in Chapters 2, 4 and 5.

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 call 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, and the characteristics of the cancer (see Table C.1). In addition to the agreed set of items, registries often provide other data which 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; this process reduces 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) in order 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 such that 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 they are updated as required. In order 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.

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
Indigenous status	Statistical local area at diagnosis
Country of birth	Postcode at diagnosis
Date of death	Melanoma thickness
Age at death	
Cause of death	

(a) International Classification of Diseases for Oncology, 3rd edition (see Appendix A).

(b) International Statistical Classification of Diseases and Related Health Problems, 10th revision (see Appendix A).

Source: AIHW 2009b.

Non-melanoma skin cancers

Data on all types of cancer, other than two types of non-melanoma skin cancer (NMSC), are reportable and collected by the state and territory registries. The two most common types of NMSC—namely, basal cell carcinoma (BCC) and squamous cell carcinoma (SCC)—are not reportable and are thus not generally recorded in cancer registries in Australia. These two types of skin cancers are by far the most frequently diagnosed cancers in Australia for both males and females (AIHW & CA 2008). A number of other, rarer types of cancer also fall within the NMSC category (e.g. Merkel cell lesions, Kaposi sarcoma and cutaneous lymphoma) and these are reportable cancers.

In the past, the agreed approach was to exclude all NMSC cases from the cancer incidence data produced by the AIHW. However, for the first time this year, a new approach was used whereby all cases that pertained to reportable forms of NMSC were included in the incidence data; as previously, no data on BCC and SCC were included. To implement this change, the state and territory registries were asked to supply, along with the usual data, information on all NMSC cases other than BCC and SCC for 2006 and for all previous years, where possible. All of the registries were able to provide such data for 2001 to 2006, with only some being able to provide such data for earlier years. Thus the data on non-melanoma skin cancers other than BCC and SCC may be incomplete before 2001.

Burden of disease data

Information on the burden of disease from ovarian cancer is shown in Chapter 6 of this report.

The first study that provided a comprehensive overview of disease and injury burden in Australia was published in 1999 (AIHW: Mathers et al. 1999). The second and most recent such study was published in 2007, and it provides burden of disease information in relation to 2003 (Begg et al. 2007a,b). 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 and associates (2007a).

In the burden of disease study, ovarian cancer was defined to include the ICD-10 codes of 'C56 and C57.0–C57.4'; this set of codes is referred to as 'ovarian and related cancers' in this report (see Appendix B).

Disease Expenditure Database

Expenditure data are used in Chapter 8 of this report to describe health expenditure on ovarian cancer. These data were obtained from the Disease Expenditure Database which is maintained by the AIHW.

Since 1984, the AIHW has had responsibility for developing estimates of national health expenditure. Data for this purpose are obtained from a wide variety of sources in the public and private sectors, with most of the data being 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 workers compensation and compulsory third-party motor vehicle insurers in each state and territory.

The definition of ovarian cancer used in this database is the ICD-10 codes of 'C56 and C57.0–C57.4', which we refer to as 'ovarian and related cancers' (see Appendix B). Expenditure data for just the ICD-10 code of 'C56' were not available.

In the Disease Expenditure Database (and unlike the approach taken in Chapter 7 of this report), ovarian and related cancer hospitalisations are defined as those hospitalisations for which the *principal diagnosis* was ovarian and related cancer. Therefore, hospitalisations that involved same-day chemotherapy administration for ovarian and related cancer patients (with ovarian cancer coded as an *additional diagnosis* rather than a principal diagnosis) are not

included. In turn, any spending related to these latter hospitalisations is not included in the expenditure data for hospital admitted patient services for ovarian and related cancers. Thus, the data shown are a minimum estimate of total admitted patient services expenditure on ovarian and related cancer patients. Note that in future expenditure analysis work done by the AIHW, further work to identify the costs of chemotherapy that are due to specific types of cancers may be undertaken.

The definition of 'all cancers' used in Chapter 8 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 (see AIHW & AACR 2008), 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 2008b).

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. 2004). 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 2002, with these estimates based on cancer incidence rates from approximately 3 to 5 years earlier. GLOBOCAN data are shown in Chapters 2, 3 and 4 of this report.

For the GLOBOCAN data, ovarian cancer was defined as those cancers that were coded as 'C56 and C57.0–C57.4' in ICD-10. Thus the definition used in those data is broader than that used in most other sections of this report. While not clearly stated, we presume that borderline ovarian tumours have not been included since IARC indicates that the third edition of ICD-O was used. As noted in Chapter 1, in the third edition of ICD-O (and unlike the previous edition), borderline ovarian tumours were not considered to be malignant tumours.

In the GLOBOCAN database, age-standardised incidence and mortality rates are provided, with the data standardised to the Doll et al. (1966) World Standard Population. However, the database does not include confidence intervals. In order to provide some guidance in terms of whether the differences were statistically significant, the AIHW calculated approximate confidence intervals (with the methodology for doing so explained in Appendix B).

National Death Index

Cancer incidence data were linked to the National Death Index (NDI) in order to provide survival and prevalence information (Chapters 4 and 5). The NDI is a database that is maintained by the AIHW; it contains information on all deaths that have occurred 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; Indigenous status; state or territory of death

registration; and death registration number. Cause of death information in a coded form is also available. For records to 1996, only the code for the 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 gaining epidemiological mortality information on individuals in a particular cohort, or with a known disease state. Ethics approval is required for the NDI to be utilised for any particular research project.

National Hospital Morbidity Database

Data from the National Hospital Morbidity Database (NHMD) are used in Chapter 7 to examine the number of ovarian cancer–related hospitalisations. 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 psychiatric hospitals; and private free-standing day hospital facilities. The database is episode-based and it is not possible to count patients individually.

Data are held in the NHMD for the years from 1993–94 to 2007–08. However, around 1998–99, hospitals across Australia began to implement a change in the classification system used to code the diagnosis for hospitalisations (i.e. from ICD-9-AM to ICD-10-AM). The first full year for which national data are available using ICD-10-AM is 1999–00. Hence, in Chapter 7, data from 1999–00 onwards are presented.

The hospitalisations data presented in this report exclude those hospitalisations for which the care type was reported as *newborn*, *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*.

Comprehensive hospital statistics from the NHMD are released by the AIHW on an annual basis (AIHW 2009a). Further information about this data source is available in those reports.

National Mortality Database

Data from the National Mortality Database are used in Chapter 3 to provide statistical information on mortality in Australia due to ovarian cancer.

The registration of deaths has been compulsory since the mid-1850s and this information is registered with the relevant state and territory Registrar of Births, Deaths and Marriages. Since 1906, the Commonwealth Statistician has compiled the information collected by the Registrars and published national death information.

The National Mortality Database, which is maintained by the AIHW, currently contains information for all deaths in Australia registered from 1964 to 2006.

The information on deaths from the Registrars is coded nationally by the ABS according to rules set forward in various versions of the ICD. Deaths are coded to reflect the underlying cause of death. As well, since 1997, multiple causes of death have been added to the mortality data.

Over time, changes have been made to the coding and processing of mortality data and these have affected the comparability of the data. For instance, data holdings on cause of death for

1987 to 1996 were manually coded using the ninth revision of the ICD, while the corresponding data for 1997 onwards were coded using ICD-10, using an automated system with slightly different coding rules. The change to the coding and processing of mortality data introduced a break in the time series. Where possible, the ABS has developed comparability factors so that a time series may still be derived (ABS 2009d). As noted in Appendix A, for ovarian cancer, the comparability factor for ICD-9 to ICD-10 is 0.98.

Note, though, that due to changes in classifications over time and the way in which diseases were grouped in these classifications, data on deaths due to ovarian cancer are only available from 1968 onwards. Before 1968, the data on deaths due to ovarian cancer were grouped together with deaths due to cancers of 'other uterine adnexa' (which are coded separately from C56 in ICD-10).

In the National Mortality Database, information on the dates of death is provided in two different ways: one is based on the year in which people *died* and the other is based on the year in which the deaths were *registered*. For the purposes of this report, mortality data are shown based on the year of *death*, except for the most recent year (namely, 2006) where the number of people whose death was *registered* in that year is used. Previous investigation has shown that the year of death and year of registration, for the most part, coincide. However, in some instances, deaths at the end of each calendar year may be held over until the following year, as are deaths whose cause requires further examination by a coroner (e.g. possible suicides). Thus, year of death information for the latest available year generally underestimates the true number of deaths, with the number of deaths registered in that year being closer to the true value.

Population data

Throughout this report, population data were used to derive rates of, for example, cancer incidence and mortality. The population data were sourced from the ABS Demography section using the most up-to-date estimates available at the time of analysis.

To derive estimates of the resident populations, the ABS uses the 5-yearly Census of Population and Housing data as follows:

- all respondents to the Census are coded in relation to 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 (approximately 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 Indigenous comparisons presented in this report (Chapters 2, 3 and 4), the most recently released Indigenous experimental estimated resident populations, as released by the ABS, were used (ABS 2009f). Those estimates were based on the 2006 Census.

Appendix D: Additional tables

Additional tables for Chapter 2: Incidence of ovarian cancer

Table D2.1: Incidence of ovarian cancer by age at diagnosis, 2006

Age group (years)	Number of cases	Age-specific rate[(a)]	95% confidence interval
<20	13	0.5	0.3–0.8
20–24	10	1.4	0.7–2.5
25–29	13	1.9	1.0–3.2
30–34	16	2.1	1.2–3.5
35–39	33	4.3	3.0–6.0
40–44	45	5.8	4.3–7.8
45–49	99	13.1	10.7–16.0
50–54	128	18.7	15.6–22.2
55–59	137	21.5	18.1–25.5
60–64	119	24.1	20.0–28.9
65–69	162	41.0	34.9–47.8
70–74	120	36.7	30.4–43.8
75–79	119	39.7	32.9–47.5
80–84	115	48.0	39.6–57.6
85+	97	44.5	36.1–54.3
Total[(b)]	**1,226**	**10.7**	**10.1–11.4**

(a) Number of cases per 100,000 females.

(b) The rate shown in this row was age-standardised to the Australian population as at 30 June 2001 and is expressed per 100,000 females.

Source: Australian Cancer Database, AIHW.

Table D2.2: Incidence of ovarian cancer, 1982 to 2006

Year	Number of cases	ASR (A)[a]	95% confidence interval	ASR (W)[b]	95% confidence interval	Per cent of gynaecological cancer cases[c]	Per cent of female cancer cases[d]
1982	833	12.4	11.6–13.3	9.9	9.2–10.6	28.3	3.8
1983	857	12.4	11.6–13.3	9.8	9.1–10.5	28.6	3.8
1984	875	12.5	11.7–13.4	9.8	9.2–10.5	27.9	3.7
1985	881	12.3	11.5–13.2	9.7	9.0–10.4	27.7	3.6
1986	873	11.9	11.1–12.7	9.4	8.7–10.0	27.2	3.5
1987	905	12.1	11.3–12.9	9.5	8.9–10.2	27.3	3.4
1988	895	11.7	10.9–12.5	9.2	8.6–9.9	27.5	3.3
1989	1,015	12.8	12.0–13.6	10.0	9.4–10.7	30.2	3.6
1990	1,006	12.6	11.8–13.4	9.8	9.2–10.4	29.6	3.5
1991	1,013	12.4	11.7–13.2	9.6	9.0–10.3	28.3	3.3
1992	1,036	12.5	11.8–13.3	9.9	9.3–10.5	29.0	3.3
1993	1,077	12.6	11.9–13.4	9.9	9.3–10.5	29.8	3.3
1994	1,064	12.3	11.6–13.1	9.6	9.1–10.3	27.5	3.1
1995	1,079	12.2	11.5–13.0	9.4	8.9–10.0	29.2	3.0
1996	1,076	11.9	11.2–12.6	9.1	8.5–9.7	29.6	3.0
1997	1,057	11.4	10.7–12.1	8.7	8.2–9.3	29.4	2.9
1998	1,123	11.8	11.1–12.5	9.1	8.6–9.7	30.2	3.0
1999	1,135	11.6	11.0–12.3	9.0	8.4–9.5	30.6	3.0
2000	1,137	11.3	10.7–12.0	8.6	8.1–9.2	29.8	2.8
2001	1,125	10.9	10.3–11.6	8.3	7.8–8.8	29.8	2.7
2002	1,228	11.7	11.0–12.3	8.9	8.4–9.4	31.2	2.9
2003	1,128	10.6	9.9–11.2	8.2	7.7–8.7	28.8	2.7
2004	1,267	11.5	10.9–12.2	8.8	8.3–9.4	30.3	2.9
2005	1,219	10.9	10.2–11.5	8.3	7.8–8.8	28.9	2.7
2006	1,226	10.7	10.1–11.4	8.3	7.8–8.8	28.9	2.7

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

(d) The age-standardised rates were standardised using the WHO 2000 World Standard Population and are expressed per 100,000 females.

(c) Includes cancers coded in ICD-10 as C51–C58.

(b) Includes cancers coded in ICD-10 as C00–C97, D45, D46, D47.1 and D47.3 with the exception of those C44 codes which indicate a basal or squamous cell carcinoma of the skin. Due to changes over time in which cancers were reportable, the data on cancers that begin with an ICD-10 code of 'D' may be incomplete before 2003 and data on C44 codes other than basal or squamous cell carcinomas may be incomplete before 2001.

Source: Australian Cancer Database, AIHW.

Table D2.3: Incidence of ovarian cancer by age at diagnosis, 1982 to 2006

	<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	3.9	3.3–4.5	32.7	29.7–35.9	35.8	31.1–41.0	12.4	11.6–13.3
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	30.6	27.7–33.6	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	27.9	25.3–30.8	39.2	34.6–44.2	11.9	11.1–12.7
1987	3.5	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	3.3–4.3	28.0	25.4–30.9	38.8	34.4–43.7	11.7	10.9–12.5
1989	3.6	3.1–4.1	31.9	29.1–34.9	44.2	39.4–49.3	12.8	12.0–13.6
1990	3.9	3.4–4.5	28.1	25.5–30.9	46.7	41.9–51.9	12.6	11.8–13.4
1991	3.6	3.1–4.1	29.8	27.1–32.7	44.9	40.2–49.9	12.4	11.7–13.2
1992	4.1	3.6–4.6	29.7	27.1–32.6	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	45.3	40.8–50.2	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	3.1–4.0	28.1	25.5–30.8	46.5	42.1–51.3	12.2	11.5–13.0
1996	3.2	2.8–3.7	26.4	24.0–29.1	48.4	43.9–53.2	11.9	11.2–12.6
1997	3.1	2.7–3.6	25.9	23.6–28.5	44.7	40.5–49.3	11.4	10.7–12.1
1998	3.1	2.7–3.5	27.6	25.2–30.2	45.8	41.6–50.4	11.8	11.1–12.5
1999	3.1	2.7–3.6	27.1	24.8–29.7	45.1	41.0–49.5	11.6	11.0–12.3
2000	3.0	2.6–3.4	25.5	23.2–27.9	46.6	42.4–51.0	11.3	10.7–12.0
2001	2.7	2.4–3.2	24.7	22.5–27.0	45.4	41.4–49.7	10.9	10.3–11.6
2002	3.2	2.8–3.7	25.4	23.2–27.8	48.4	44.2–52.8	11.7	11.0–12.3
2003	2.9	2.5–3.3	24.5	22.4–26.8	40.6	36.8–44.7	10.6	9.9–11.2
2004	3.2	2.8–3.7	25.3	23.2–27.6	47.0	43.0–51.4	11.5	10.9–12.2
2005	2.9	2.5–3.3	24.1	22.1–26.3	44.9	40.9–49.1	10.9	10.2–11.5
2006	3.1	2.7–3.5	24.6	22.6–26.8	40.9	37.1–44.9	10.7	10.1–11.4

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

Source: Australian Cancer Database, AIHW.

Table D2.4: Projected ovarian cancer incidence, 2007 to 2015

Year	Projected number of cases[a]	95% prediction interval	Age-standardised rate (A)[b]	95% prediction interval	Age-standardised rate (W)[c]	95% prediction interval
2007	1,265	1,166–1,363	10.8	10.0–11.6	8.2	7.6–8.9
2008	1,284	1,177–1,390	10.7	9.8–11.5	8.2	7.5–8.8
2009	1,304	1,189–1,419	10.6	9.7–11.5	8.1	7.4–8.8
2010	1,324	1,200–1,449	10.5	9.6–11.4	8.0	7.3–8.7
2011	1,345	1,210–1,480	10.4	9.5–11.4	8.0	7.2–8.7
2012	1,368	1,223–1,514	10.3	9.3–11.4	7.9	7.1–8.7
2013	1,390	1,233–1,548	10.3	9.2–11.3	7.8	7.0–8.7
2014	1,412	1,243–1,581	10.2	9.0–11.3	7.8	6.9–8.6
2015	1,434	1,252–1,616	10.1	8.9–11.3	7.7	6.8–8.6

(a) The projections were based on ovarian cancer incidence data for 1997 to 2006.

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

(c) The age-standardised rates were standardised using the WHO 2000 World Standard Population and are expressed per 100,000 females.

Source: Australian Cancer Database, AIHW.

Table D2.5: Grouping of ovarian cancer histology types

Type of ovarian cancer[a]	Corresponding ICD-O-3 histology codes
1: Carcinoma (epithelial tumours)	All codes included in groups 1.1 to 1.7
1.1: Serous carcinoma	8441, 8442, 8450, 8460–8463, 9014
1.2: Mucinous carcinoma	8470–8490, 9015
1.3: Endometrioid carcinoma	8380–8383, 8560, 8570
1.4: Clear cell carcinoma	8310–8313, 9110
1.5: Adenocarcinoma not otherwise specified	8140–8147, 8170–8190, 8211–8231, 8260, 8384, 8440, 8576
1.6: Other specified carcinoma	Includes 8041, 8050, 8070, 8120, 8323, 9000 and all other specified carcinomas
1.7: Unspecified carcinoma	8010–8035
2: Sex cord-stromal tumours	8590–8671, 8810
3: Germ cell tumours	8240–8246, 8340, 9060–9102, 9473, 9501
4: Other specified malignant neoplasm	Includes 8800, 8890, 8930, 8935, 8950, 8951, 8980 and all other specified tumours
5: Unspecified malignant neoplasm	8000–8005

(a) For the purposes of this study, the grouping of ovarian cancer histology types was based primarily on those recommended by the International Agency for Research on Cancer (Curado et al. 2007) with additional input from National Breast and Ovarian Cancer Centre. All cases included in each of the groups were coded by state and territory cancer registries as primary site, invasive ovarian cancers.

Table D2.6: Incidence by type of ovarian cancer, women aged less than 50 years at diagnosis, 1982–1987 to 2000–2006

	Number of cases				Per cent			
Type of ovarian cancer[(a)]	**1982–1987**	**1988–1993**	**1994–1999**	**2000–2006**	**1982–1987**	**1988–1993**	**1994–1999**	**2000–2006**
1: Carcinoma (epithelial tumours)	895	1,094	1,062	1,189	81.0	82.3	82.3	79.3
1.1: Serous carcinoma	327	454	444	522	29.6	34.2	34.4	34.8
1.2: Mucinous carcinoma	157	207	222	173	14.2	15.6	17.2	11.5
1.3: Endometrioid carcinoma	123	149	163	202	11.1	11.2	12.6	13.5
1.4: Clear cell carcinoma	43	82	92	120	3.9	6.2	7.1	8.0
1.5: Adenocarcinoma NOS	185	143	94	91	16.7	10.8	7.3	6.1
1.6: Other specified carcinoma	11	17	15	47	1.0	1.3	1.2	3.1
1.7: Unspecified carcinoma	49	42	32	34	4.4	3.2	2.5	2.3
2: Sex cord-stromal tumours	32	30	27	31	2.9	2.3	2.1	2.1
3: Germ cell tumours	131	172	161	216	11.9	12.9	12.5	14.4
4: Other specified malignant neoplasm	16	20	22	34	1.5	1.5	1.7	2.3
5: Unspecified malignant neoplasm	31	13	18	29	2.8	1.0	1.4	1.9
Total	**1,105**	**1,329**	**1,290**	**1,499**	**100.0**	**100.0**	**100.0**	**100.0**

(a) All cases were coded as primary site, invasive ovarian cancers. Appendix Table D2.5 provides a list of the histology types included in each group.

Source: Australian Cancer Database, AIHW.

Table D2.7: Incidence by type of ovarian cancer, women aged 50 to 69 years at diagnosis, 1982–1987 to 2000–2006

	Number of cases				Per cent			
Type of ovarian cancer[(a)]	**1982–1987**	**1988–1993**	**1994–1999**	**2000–2006**	**1982–1987**	**1988–1993**	**1994–1999**	**2000–2006**
1: Carcinoma (epithelial tumours)	2,396	2,545	2,594	3,268	92.5	93.0	93.2	92.5
1.1: Serous carcinoma	826	1,119	1,422	1,872	31.9	40.9	51.1	53.0
1.2: Mucinous carcinoma	289	300	238	240	11.2	11.0	8.6	6.8
1.3: Endometrioid carcinoma	289	287	252	343	11.2	10.5	9.1	9.7
1.4: Clear cell carcinoma	141	164	182	234	5.4	6.0	6.5	6.6
1.5: Adenocarcinoma NOS	692	528	382	387	26.7	19.3	13.7	11.0
1.6: Other specified carcinoma	16	23	28	91	0.6	0.8	1.0	2.6
1.7: Unspecified carcinoma	143	124	90	101	5.5	4.5	3.2	2.9
2: Sex cord-stromal tumours	48	39	37	35	1.9	1.4	1.3	1.0
3: Germ cell tumours	15	12	11	35	0.6	0.4	0.4	1.0
4: Other specified malignant neoplasm	60	99	83	129	2.3	3.6	3.0	3.7
5: Unspecified malignant neoplasm	72	42	57	67	2.8	1.5	2.1	1.9
Total	**2,591**	**2,737**	**2,782**	**3,534**	**100.0**	**100.0**	**100.0**	**100.0**

(a) All cases were coded as primary site, invasive ovarian cancers. Appendix Table D2.5 provides a list of the histology types included in each group.

Source: Australian Cancer Database, AIHW.

Table D2.8: Incidence by type of ovarian cancer, women aged 70 years and over at diagnosis, 1982–1987 to 2000–2006

	Number of cases				Per cent			
Type of ovarian cancer[(a)]	**1982–1987**	**1988–1993**	**1994–1999**	**2000–2006**	**1982–1987**	**1988–1993**	**1994–1999**	**2000–2006**
1: Carcinoma (epithelial tumours)	1,296	1,716	2,110	2,683	84.8	86.8	86.8	81.4
1.1: Serous carcinoma	386	622	862	1,161	25.3	31.5	31.5	35.2
1.2: Mucinous carcinoma	151	166	167	173	9.9	8.4	8.4	5.3
1.3: Endometrioid carcinoma	110	123	142	134	7.2	6.2	6.2	4.1
1.4: Clear cell carcinoma	33	61	55	83	2.2	3.1	3.1	2.5
1.5: Adenocarcinoma NOS	432	490	591	692	28.3	24.8	24.8	21.0
1.6: Other specified carcinoma	18	28	21	40	1.2	1.4	1.4	1.2
1.7: Unspecified carcinoma	166	226	272	400	10.9	11.4	11.4	12.1
2: Sex cord-stromal tumours	18	19	23	11	1.2	1.0	1.0	0.3
3: Germ cell tumours	9	4	8	19	0.6	0.2	0.2	0.6
4: Other specified malignant neoplasm	43	71	98	130	2.8	3.6	3.6	3.9
5: Unspecified malignant neoplasm	162	166	223	454	10.6	8.4	8.4	13.8
Total	**1,528**	**1,976**	**2,462**	**3,297**	**100.0**	**100.0**	**100.0**	**100.0**

(a) All cases were coded as primary site, invasive ovarian cancers. Appendix Table D2.5 provides a list of the histology types included in each group.

Source: Australian Cancer Database, AIHW.

Table D2.9: Incidence of ovarian cancer by remoteness area, 2002–2006

Remoteness area[(a)]	Annual average number of cases[(b)]	Total number of cases	Age-standardised rate[(c)]	95% confidence interval
Major cities	842	4,211	11.4	11.0–11.7
Inner regional	244	1,218	10.4	9.8–11.0
Outer regional	105	527	10.3	9.4–11.2
Remote and very remote	22	109	12.2	9.9–14.7
Not stated	1	4	. .	. .
Total	**1,214**	**6,068**	**11.1**	**10.8–11.3**

(a) Classified according to the Australian Standard Geographical Classification (ASGC) Remoteness Areas (see Appendix A).

(b) Numbers may not sum to the total due to rounding.

(c) 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 2002–2006.

Source: Australian Cancer Database, AIHW.

Table D2.10: Incidence of ovarian cancer by socioeconomic status, 2002–2006

Socioeconomic status[(a)]	Annual average number of cases[(b)]	Total number of cases	Age-standardised rate[(c)]	95% confidence interval
1 (lowest)	254	1,269	11.6	10.9–12.2
2	241	1,204	10.5	9.9–11.1
3	238	1,189	11.2	10.5–11.8
4	226	1,128	10.8	10.2–11.4
5 (highest)	253	1,266	11.3	10.7–11.9
Not stated	2	12	. .	. .
Total	**1,214**	**6,068**	**11.1**	**10.8–11.3**

(a) Classified using the ABS Index of Relative Socio-economic Disadvantage (see Appendix A).

(b) Numbers may not sum to the total due to rounding.

(c) 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 2002–2006.

Source: Australian Cancer Database, AIHW.

Table D2.11: Incidence of ovarian cancer by country/region of birth, 2002–2006

Country/region of birth[a]	Annual average number of cases[b]	Total number of cases	Age-standardised rate[c,d]	95% confidence interval[c]
Americas	14	70	13.7	10.7–17.3
Sub-Saharan Africa	11	55	12.1	9.1–15.8
Southern and Central Asia	15	74	11.8	9.2–14.8
North-West Europe	163	814	11.2	10.4–12.0
Oceania and Antarctica, excl. Australia	26	130	10.7	8.9–12.7
South-East Asia	32	161	10.6	9.1–12.4
North Africa and the Middle East	15	75	10.3	8.1–12.9
Australia	767	3,833	9.9	. .
Southern and Eastern Europe	92	461	9.6	8.7–10.5
North-East Asia	18	92	9.3	7.5–11.4
Not stated	61	303	. .	. .
Total	**1,214**	**6,068**	**10.7**	**. .**

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

(b) Numbers may not sum to the total due to rounding.

(c) Indirectly age-standardised to the 2002–2006 Australian-born population (see Appendix B).

(d) The rates are expressed per 100,000 females and based on the total number of cases over the 5-year period from 2002–2006. Countries/regions of birth are ordered in descending order according to the age-standardised rate.

Source: Australian Cancer Database, AIHW.

Table D2.12: International comparison of estimated incidence of ovarian and related cancers[a], 2002[b]

Country or region	Estimated number of cases	Age-standardised rate[c]	95% confidence interval[d]
Northern Europe	10,531	13.3	13.0–13.6
New Zealand	320	12.4	11.0–13.8
Western Europe	17,650	11.3	11.1–11.5
Northern America	25,162	10.7	10.6–10.8
Central and Eastern Europe	23,637	10.2	10.1–10.3
Southern Europe	11,649	9.7	9.5–9.9
Australia	***1,235***	***8.9***	***8.4–9.4***
South America	12,794	7.7	7.6–7.8
Polynesia	18	7.7	4.1–11.3
Central America	4,009	7.2	7.0–7.4
South-Eastern Asia	16,880	7.2	7.1–7.3
World	***204,499***	***6.6***	***6.6–6.6***
Melanesia	153	6.6	5.6–7.6
Micronesia	12	6.0	2.6–9.4
Eastern Africa	4,706	5.8	5.6–6.0
Western Asia	4,058	5.3	5.1–5.5
South-Central Asia	32,559	5.3	5.2–5.4
Southern Africa	1,003	5.2	4.9–5.5
Western Africa	3,601	4.6	4.4–4.8
Caribbean	838	4.3	4.0–4.6
Eastern Asia	30,617	3.7	3.7–3.7
Middle Africa	1,182	3.3	3.1–3.5
Northern Africa	1,892	2.6	2.5–2.7

(a) The data pertain to cancers coded in ICD-10 as C56 and C57.0–C57.4.

(b) The data were estimated for 2002 by the International Agency for Research on Cancer (IARC) and are based on data from approximately 3 to 5 years earlier.

(c) 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.

(d) The confidence intervals are approximations and were calculated by the AIHW (see Appendix B).

Source: Ferlay et al. 2004.

Additional tables for Chapter 3: Mortality from ovarian cancer

Table D3.1: Mortality from ovarian cancer by age at death, 2006

Age group	Number of deaths	Age-specific rate[a]	95% confidence interval
<20	1	0.0	0.0–0.2
20–24	1	0.1	0.0–0.8
25–29	1	0.1	0.0–0.8
30–34	2	0.3	0.0–1.0
35–39	6	0.8	0.3–1.7
40–44	14	1.8	1.0–3.0
45–49	35	4.6	3.2–6.5
50–54	39	5.7	4.0–7.8
55–59	83	13.1	10.4–16.2
60–64	69	14.0	10.9–17.7
65–69	95	24.0	19.4–29.4
70–74	107	32.7	26.8–39.5
75–79	124	41.4	34.4–49.3
80–84	112	46.7	38.5–56.3
85+	106	48.7	39.9–58.9
Total[b]	**795**	**6.7**	**6.2–7.2**

(a) Number of deaths per 100,000 females.

(b) The rate shown in this row was age-standardised to the Australian population as at 30 June 2001 and is expressed per 100,000 females.

Source: National Mortality Database, AIHW.

Table D3.2: Mortality from ovarian cancer, 1968 to 2006

Year	Number of deaths	Age-standardised rate (A)[a]	95% confidence interval	Age-standardised rate (W)[b]	95% confidence interval
1968	451	9.1	8.2–10.0	7.1	6.4–7.8
1969	434	8.6	7.8–9.4	6.6	6.0–7.3
1970	433	8.3	7.6–9.2	6.5	5.9–7.2
1971	436	8.1	7.3–8.9	6.2	5.6–6.8
1972	484	8.8	8.0–9.6	6.8	6.2–7.4
1973	501	8.9	8.1–9.7	6.8	6.2–7.4
1974	493	8.6	7.9–9.4	6.7	6.1–7.3
1975	497	8.5	7.7–9.3	6.5	6.0–7.2

(continued)

Table D3.2 (continued): Mortality from ovarian cancer, 1968 to 2006

Year	Number of deaths	Age-standardised rate (A)[a]	95% confidence interval	Age-standardised rate (W)[b]	95% confidence interval
1976	513	8.7	7.9–9.5	6.6	6.0–7.2
1977	545	9.0	8.2–9.8	6.9	6.3–7.5
1978	533	8.7	7.9–9.4	6.4	5.9–7.0
1979	527	8.4	7.7–9.1	6.4	5.8–6.9
1980	559	8.8	8.0–9.5	6.5	6.0–7.1
1981	549	8.4	7.7–9.1	6.4	5.8–6.9
1982	575	8.6	7.9–9.3	6.4	5.9–7.0
1983	583	8.5	7.8–9.2	6.4	5.9–6.9
1984	624	8.8	8.1–9.6	6.6	6.1–7.2
1985	549	7.6	7.0–8.3	5.7	5.2–6.2
1986	623	8.5	7.8–9.2	6.3	5.8–6.9
1987	612	8.2	7.5–8.8	6.1	5.6–6.6
1988	590	7.6	7.0–8.3	5.7	5.3–6.2
1989	624	7.9	7.3–8.5	5.8	5.4–6.3
1990	705	8.8	8.1–9.5	6.5	6.0–7.0
1991	696	8.4	7.8–9.0	6.2	5.7–6.7
1992	650	7.7	7.1–8.3	5.7	5.2–6.2
1993	690	7.9	7.3–8.5	5.7	5.3–6.2
1994	715	8.2	7.6–8.9	6.1	5.6–6.6
1995	702	7.8	7.2–8.4	5.6	5.2–6.1
1996	768	8.3	7.8–9.0	6.0	5.6–6.5
1997	729	7.7	7.1–8.3	5.5	5.1–5.9
1998	750	7.7	7.2–8.3	5.5	5.1–5.9
1999	731	7.3	6.8–7.8	5.2	4.8–5.6
2000	780	7.6	7.1–8.1	5.4	5.0–5.8
2001	837	7.9	7.4–8.4	5.6	5.2–6.0
2002	842	7.8	7.3–8.4	5.6	5.2–6.0
2003	781	7.1	6.6–7.6	5.1	4.7–5.5
2004	852	7.6	7.1–8.1	5.4	5.1–5.8
2005	888	7.6	7.1–8.1	5.3	5.0–5.7
2006	795	6.7	6.2–7.2	4.7	4.4–5.1

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

(b) The age-standardised rates were standardised using the WHO 2000 World Standard Population and are expressed per 100,000 females.

Note: The 1968 to 1996 data were adjusted from earlier ICD standards to ICD-10 standards using a factor of 0.98.

Source: National Mortality Database, AIHW.

Table D3.3: Mortality from ovarian cancer by age at death, 1982 to 2006

	<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	1.3–2.2	20.7	18.4–23.2	36.6	31.8–41.9	8.6	7.9–9.3
1983	1.2	0.9–1.6	22.3	19.9–25.0	36.3	31.6–41.5	8.5	7.8–9.2
1984	1.4	1.1–1.8	21.6	19.2–24.1	39.4	34.6–44.6	8.8	8.1–9.6
1985	0.9	0.6–1.2	20.1	17.8–22.5	33.5	29.2–38.3	7.6	7.0–8.3
1986	1.7	1.3–2.1	18.8	16.6–21.2	39.7	35.0–44.8	8.5	7.8–9.2
1987	1.5	1.2–1.9	20.3	18.0–22.7	34.2	29.9–38.9	8.2	7.5–8.8
1988	1.4	1.1–1.7	18.2	16.1–20.5	34.2	30.0–38.8	7.6	7.0–8.3
1989	1.2	0.9–1.6	18.6	16.5–20.9	37.2	32.9–42.0	7.9	7.3–8.5
1990	1.5	1.2–1.8	19.5	17.3–21.8	43.4	38.7–48.4	8.8	8.1–9.5
1991	1.3	1.0–1.7	18.9	16.8–21.2	41.0	36.6–45.8	8.4	7.8–9.0
1992	1.2	0.9–1.5	18.1	16.1–20.4	36.2	32.1–40.6	7.7	7.1–8.3
1993	1.0	0.7–1.2	17.5	15.6–19.7	41.3	37.0–46.0	7.9	7.3–8.5
1994	1.3	1.0–1.6	19.1	17.0–21.4	39.1	35.0–43.6	8.2	7.6–8.9
1995	1.2	0.9–1.5	16.8	14.8–18.8	40.4	36.3–44.9	7.8	7.2–8.4
1996	1.2	0.9–1.4	17.7	15.7–19.9	44.7	40.4–49.4	8.3	7.8–9.0
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	12.7	11.3–14.3	40.3	36.6–44.3	6.7	6.2–7.2

(a) The age-standardised rates were standardised to the Australian population as at 30 June 2001 and are expressed per 100,000 females. The 1982 to 1996 data were adjusted from ICD-9 to ICD-10 standards using a factor of 0.98.

Source: National Mortality Database, AIHW.

Table D3.4: Mortality from ovarian cancer by remoteness area, 2002–2006

Remoteness area[a]	Average annual number of deaths[b]	Total number of cases	Age-standardised rate[c]	95% confidence interval
Major cities	549	2,744	7.2	6.9–7.4
Inner regional	185	926	7.6	7.1–8.1
Outer regional	82	408	7.8	7.1–8.6
Remote and very remote	15	76	9.6	7.5–12.0
Not stated	1	4	. .	. .
Total	**832**	**4,158**	**7.3**	**7.1–7.6**

(a) Classified using the ABS Australian Standard Geographical Classification (ASGC) Remoteness Areas (see Appendix A).

(b) Numbers may not sum to the total due to rounding.

(c) 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 2002–2006.

Source: National Mortality Database, AIHW.

Table D3.5: Mortality from ovarian cancer by socioeconomic status, 2002–2006

Socioeconomic status[a]	Average annual number of deaths[b]	Total number of cases	Age-standardised rate[c]	95% confidence interval
1 (Lowest)	164	819	7.2	6.7–7.7
2	185	926	7.7	7.2–8.2
3	156	779	7.1	6.6–7.6
4	143	716	6.8	6.3–7.3
5 (Highest)	180	899	7.8	7.3–8.3
Not stated	4	19	. .	. .
Total	**832**	**4,158**	**7.3**	**7.1–7.6**

(a) Classified using the ABS Index of Socio-economic Disadvantage (see Appendix A).

(b) Numbers may not sum to the total due to rounding.

(c) 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 2002–2006.

Source: National Mortality Database, AIHW.

Table D3.6: Mortality from ovarian cancer by country/region of birth, 2002–2006

Country/region of birth[a]	Annual average number of deaths[b]	Total number of cases	Age-standardised rate[c,d]	95% confidence interval[c]
Sub-Saharan Africa	8	42	10.6	7.6–14.3
North-West Europe	128	640	8.4	7.7–9.0
North Africa and the Middle East	10	50	7.4	5.5–9.8
Southern and Central Asia	9	43	7.4	5.3–9.9
Southern and Eastern Europe	75	377	7.3	6.6–8.1
Australia	553	2,767	7.2	. .
Oceania and Antarctica, excl. Australia	15	74	7.2	5.7–9.0
North-East Asia	10	52	6.0	4.5–7.8
South-East Asia	15	74	6.0	4.7–7.5
Americas	5	26	5.9	3.8–8.6
Inadequately described, not stated or unknown	3	13	. .	. .
Total	**832**	**4,158**	**7.3**	**. .**

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

(b) Numbers may not sum to the total due to rounding.

(c) Indirectly age-standardised to the 2002–2006 Australian-born population (see Appendix B).

(d) The rates are expressed per 100,000 females and based on the total number of cases over the 5-year period from 2002–2006. Countries/regions of birth are ordered in descending order according to the age-standardised rate.

Source: National Mortality Database, AIHW.

Table D3.7: International comparison of estimated mortality from ovarian and related cancers[a], 2002[b]

Region or country	Estimated number of deaths	Age-standardised rate[c]	95% confidence interval[d]
Northern Europe	7,188	7.9	7.7–8.1
New Zealand	184	6.4	5.5–7.3
Western Europe	12,162	6.3	6.2–6.4
Northern America	16,005	6.1	6.0–6.2
Central and Eastern Europe	15,243	6.0	5.9–6.1
Australia	***772***	***4.9***	***4.6–5.2***
Southern Europe	6,431	4.5	4.4–4.6
Polynesia	11	4.4	1.8–7.0
Eastern Africa	3,340	4.1	4.0–4.2
South-Eastern Asia	9,262	4.1	4.0–4.2
World	***124,860***	***4.0***	***4.0–4.0***
Melanesia	87	3.9	3.1–4.7
South-Central Asia	22,813	3.8	3.8–3.8
South America	6,108	3.7	3.6–3.8
Central America	1,901	3.6	3.4–3.8
Micronesia	6	3.5	0.7–6.3
Western Asia	2,484	3.4	3.3–3.5
Western Africa	2,551	3.2	3.1–3.3
Southern Africa	612	3.2	2.9–3.5
Caribbean	496	2.6	2.4–2.8
Middle Africa	841	2.3	2.1–2.5
Northern Africa	1,343	1.8	1.7–1.9
Eastern Asia	15,019	1.8	1.8–1.8

(a) The data pertain to cancers coded in ICD-10 as C56 and C57.0–C57.4.

(b) The data were estimated for 2002 by the International Agency for Research on Cancer (IARC) and are based on data from approximately 3 to 5 years earlier

(c) 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.

(d) The confidence intervals are approximations and were calculated by the AIHW (see Appendix B).

Source: Ferlay et al. 2004.

Additional tables for Chapter 4: Survival after a diagnosis of ovarian cancer

Table D4.1: Relative survival, 10 most commonly diagnosed cancers[a], females, 1998–2004

	1-year relative survival		5-year relative survival	
Cancer type (ICD-10 codes)	**RS (%)**	**95% CI**	**RS (%)**	**95% CI**
Breast (C50)	97.2	97.1–97.4	87.8	87.5–88.1
Bowel (C18–C20)	80.0	79.5–80.4	62.4	61.8–63.1
Melanoma of skin (C4)	98.4	98.2–98.6	94.1	93.6 –94.6
Lung (C33–C34)	38.8	38.1–39.4	14.0	13.4 –14.5
Uterus, body (C54)	92.6	92.1–93.2	82.1	81.1–83.0
Non-Hodgkin lymphoma (C82–C85, C96)	77.5	76.7–78.3	62.6	61.5–63.6
Unknown primary site (C26, C39, C76, C80)	15.8	15.2–16.4	7.6	7.1–8.0
Ovary (C56)	73.2	72.2–74.2	39.8	38.6–41.0
Thyroid (C73)	96.9	96.4–97.3	95.3	94.5–96.0
Leukaemia (C91–C95)	65.7	64.6–66.8	47.3	46.0–48.6
All cancers[b]	**78.7**	**78.5–78.8**	**64.1**	**63.9–64.3**

(a) Determined by most commonly diagnosed cancers in 2004 and ordered accordingly. Excludes non-melanoma skin cancer (C44).

(b) Includes cancers coded in ICD-10 as C00–C97 (except for C44), D45, D46, D47.1 and D47.3.

Source: AIHW, CA & AACR 2008; Australian Cancer Database, AIHW.

Table D4.2: Relative survival by age at diagnosis, ovarian cancer, 2000–2006

Age at diagnosis (years)	Number of cases[a]	1-year relative survival		5-year relative survival	
		RS (%)	**95% CI**	**RS (%)**	**95% CI**
<30	240	95.9	92.4–97.8	86.4	81.0–90.3
30–39	321	91.1	87.4–93.7	70.6	64.8–75.6
40–49	938	91.5	89.5–93.1	61.0	57.5–64.4
50–59	1,712	88.7	87.1–90.2	49.8	47.1–52.4
60–69	1,812	81.4	79.5–83.1	41.1	38.5–43.6
70–79	1,842	60.4	58.2–62.6	23.5	21.3–25.7
80+	1,350	35.8	33.4–38.2	14.8	12.5–17.3
All ages	**8,215**	**73.7**	**72.7–74.7**	**40.0**	**38.8–41.2**

(a) Equals the total number of cases diagnosed in the period considered.

Source: Australian Cancer Database, AIHW.

Table D4.3: Relative survival by period of diagnosis, ovarian cancer, 1982–1987 to 2000–2006

Years after diagnosis	1982–1987		1988–1993		1994–1999		2000–2006	
	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI	RS (%)	95% CI
1	63.1	61.8–64.4	67.4	66.2–68.6	72.0	70.9–73.1	73.7	72.7–74.7
2	46.1	44.7–47.5	51.9	50.6–53.2	57.4	56.1–58.6	60.0	58.9–61.0
3	38.6	37.2–40.0	43.8	42.5–45.1	47.9	46.6–49.1	51.0	49.8–52.1
4	34.8	33.5–36.2	39.5	38.2–40.8	42.0	40.8–43.3	44.3	43.1–45.4
5	33.0	31.6–34.3	36.8	35.5–38.1	38.8	37.5–40.0	40.0	38.8–41.2
6	31.5	30.1–32.8	34.6	33.3–35.9	36.3	35.1–37.6	37.0	35.7–38.2
7	30.1	28.8–31.5	33.5	32.2–34.7	34.7	33.4–35.9	34.8	33.5–36.2
8	29.3	28.0–30.7	32.4	31.1–33.7	33.3	32.1–34.5	32.8	31.3–34.3
9	28.6	27.2–29.9	31.5	30.3–32.8	32.3	31.1–33.6	31.2	29.3–33.1
10	28.2	26.9–29.6	30.6	29.3–31.9	31.6	30.4–32.9	. .	. .
11	27.9	26.5–29.2	30.2	28.9–31.5	31.1	29.9–32.4	. .	. .
12	27.2	25.9–28.6	29.8	28.5–31.1	30.5	29.2–31.8	. .	. .
13	27.2	25.8–28.6	29.3	28.0–30.6	30.3	29.0–31.7	. .	. .
14	26.9	25.5–28.3	29.0	27.7–30.4	29.8	28.4–31.2	. .	. .
15	26.5	25.2–28.0	28.6	27.3–29.9	29.1	27.4–30.8	. .	. .
16	26.5	25.1–27.9	28.2	26.9–29.6	. .	. .	. .	. .
17	26.2	24.8–27.7	27.9	26.6–29.3	. .	. .	. .	. .
18	25.8	24.4–27.3	27.7	26.3–29.1	. .	. .	. .	. .
19	25.9	24.4–27.4	27.6	26.1–29.0	. .	. .	. .	. .
20	26.0	24.5–27.5	27.1	25.5–28.6	. .	. .	. .	. .
21	25.7	24.2–27.2	26.7	24.8–28.7	. .	. .	. .	. .
22	25.7	24.2–27.3	. .	. .	. .	. .	. .	. .
23	25.8	24.2–27.4	. .	. .	. .	. .	. .	. .
24	25.9	24.3–27.6	. .	. .	. .	. .	. .	. .
25	26.0	24.4–27.8	. .	. .	. .	. .	. .	. .
26	26.1	24.3–28.0	. .	. .	. .	. .	. .	. .
27	26.2	24.1–28.4	. .	. .	. .	. .	. .	. .

Source: Australian Cancer Database, AIHW.

Table D4.4: Five-year relative survival by age at diagnosis, ovarian cancer, 1982–1987 to 2000–2006

Age at diagnosis (years)	1982–1987			1988–1993			1994–1999			2000–2006		
	Number of cases[(a)]	Relative survival (%)	95% confidence interval	Number of cases[(a)]	Relative survival (%)	95% confidence interval	Number of cases[(a)]	Relative survival (%)	95% confidence interval	Number of cases[(a)]	Relative survival (%)	95% confidence interval
<30	192	81.4	75.1–86.2	226	85.6	80.3–89.6	220	85.6	80.2–89.6	240	86.4	81.0–90.3
30–39	281	66.2	60.3–71.5	329	71.0	65.7–75.6	298	70.3	64.8–75.2	321	70.6	64.8–75.6
40–49	627	44.7	40.8–48.6	771	51.3	47.6–54.8	770	59.0	55.4–62.4	938	61.0	57.5–64.4
50–59	1,185	35.6	32.9–38.4	1,120	44.2	41.2–47.1	1,338	45.5	42.8–48.2	1,712	49.8	47.1–52.4
60–69	1,383	27.0	24.6–29.4	1,602	29.2	26.9–31.5	1,434	37.1	34.5–39.7	1,812	41.1	38.5–43.6
70–79	1,027	18.4	15.9–21.0	1,307	22.7	20.3–25.2	1,542	24.2	22.0–26.6	1,842	23.5	21.3–25.7
80+	419	14.7	10.8–19.3	609	13.4	10.4–16.9	863	11.1	8.8–13.7	1,350	14.8	12.5–17.3
All ages	**5,114**	**33.0**	**31.6–34.3**	**5,964**	**36.8**	**35.5–38.1**	**6,465**	**38.8**	**37.5–40.0**	**8,215**	**40.0**	**38.8–41.2**

(a) Equals the total number of diagnosed cases in the period considered.

Source: Australian Cancer Database, AIHW.

Table D4.5: Five-year relative survival by type of ovarian cancer and age at diagnosis, 1982–2006

Type of ovarian cancer[a]	<50 years			50–69 years			70+ years			All ages		
	Number of cases[b]	RS (%)	95% CI	Number of cases[b]	RS (%)	95% CI	Number of cases[b]	RS (%)	95% CI	Number of cases[b]	RS (%)	95% CI
1: Carcinoma (epithelial tumours)	4,236	58.7	57.1–60.2	10,778	38.5	37.5–39.5	7,669	20.8	19.8–21.9	22,683	36.7	36.1–37.4
1.1: Serous carcinoma	1,747	52.5	50.1–54.9	5,237	34.5	33.2–35.9	3,027	24.0	22.3–25.8	10,011	34.8	33.8–35.8
1.2: Mucinous carcinoma	759	74.4	71.0–77.4	1,067	53.1	49.9–56.1	657	36.9	32.6–41.2	2,483	55.8	53.7–57.9
1.3: Endometrioid carcinoma	637	74.0	70.3–77.4	1,171	63.9	60.9–66.8	509	51.5	46.0–56.9	2,317	64.2	62.0–66.3
1.4: Clear cell carcinoma	337	62.7	57.2–67.8	721	58.8	54.9–62.5	232	49.6	41.7–57.4	1,290	58.3	55.3–61.1
1.5: Adenocarcinoma NOS	512	37.2	33.0–41.4	1,987	19.9	18.2–21.8	2,197	7.3	6.2–8.5	4,696	16.0	14.9–17.1
1.6: Other specified carcinoma	90	49.9	38.8–60.1	158	44.5	36.0–52.7	107	26.1	17.1–36.6	355	40.6	35.0–46.2
1.7: Unspecified carcinoma	154	54.9	46.7–62.4	437	27.9	23.7–32.2	940	8.2	6.5–10.1	1,531	18.4	16.5–20.4
2: Sex cord-stromal tumours	120	84.3	76.2–89.9	159	75.7	67.5–82.3	71	67.0	51.6–80.7	350	77.0	71.6–81.7
3: Germ cell tumours	680	91.1	88.6–93.1	73	76.4	64.0–85.4	40	40.7	23.3–59.4	793	87.5	84.9–89.8
4: Other specified malignant neoplasm	92	47.4	36.8–57.3	371	30.5	25.7–35.5	342	18.5	14.1–23.5	805	27.5	24.3–30.8
5: Unspecified malignant neoplasm	85	72.8	61.8–81.2	205	35.5	29.2–42.0	837	4.0	2.9–5.4	1,127	13.8	12.0–15.8
Total	**5,213**	**63.5**	**62.1–64.8**	**11,586**	**39.0**	**38.0–39.9**	**8,959**	**19.5**	**18.6–20.5**	**25,758**	**37.7**	**37.1–38.3**

(a) All cases were coded as primary site, invasive ovarian cancers. Appendix Table D2.5 provides a list of the histology types included in each group.

(b) Equals the total number of diagnosed cases in the period considered.

Source: Australian Cancer Database, AIHW.

Table D4.6: International comparison of mortality-to-incidence ratios for ovarian and related cancers, 2002

Region or country	Mortality: ASR	Incidence: ASR	Mortality-to-incidence ratio
South-Central Asia	3.8	5.3	0.72
Eastern Africa	4.1	5.8	0.71
Middle Africa	2.3	3.3	0.70
Western Africa	3.2	4.6	0.70
Northern Africa	1.8	2.6	0.69
Western Asia	3.4	5.3	0.64
Southern Africa	3.2	5.2	0.62
World	***4.0***	***6.6***	***0.61***
Caribbean	2.6	4.3	0.60
Northern Europe	7.9	13.3	0.59
Melanesia	3.9	6.6	0.59
Central and Eastern Europe	6.0	10.2	0.59
Micronesia	3.5	6.0	0.58
Polynesia	4.4	7.7	0.57
Northern America	6.1	10.7	0.57
South-Eastern Asia	4.1	7.2	0.57
Western Europe	6.3	11.3	0.56
Australia	***4.9***	***8.9***	***0.55***
New Zealand	6.4	12.4	0.52
Central America	3.6	7.2	0.50
Eastern Asia	1.8	3.7	0.49
South America	3.7	7.7	0.48
Southern Europe	4.5	9.7	0.46

Notes

1. The data pertain to cancers coded in ICD-10 as C56 and C57.0–C57.4 (see Appendix B for more details).
2. The mortality and incidence rates were derived from estimates of the number of new ovarian and related cancer cases and deaths for 2002; those estimates were based on data from approximately 3 to 5 years earlier.
3. 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.
4. The mortality-to-incidence ratio equals the age-standardised mortality rate divided by the age-standardised incidence rate.

Source: Ferlay et al. 2004.

Additional table for Chapter 6: Burden of disease due to ovarian cancer

Table D6.1: Leading cancer causes of burden of disease by age group, females, 2003

Age group (years)	Breast cancer	Lung cancer	Bowel cancer	Pancreas cancer	Ovarian and related cancers	Total from all cancers	Ovarian and related cancers as a % of all cancers
	Number (Disability-adjusted life years (DALYs))						
<1	0	0	0	1	0	99	0.0
1–4	0	0	0	0	0	417	0.0
5–9	0	0	1	0	2	605	0.3
10–14	0	1	1	0	8	456	1.8
15–19	0	0	11	0	70	804	8.7
20–24	25	30	41	0	94	1,122	8.4
25–29	260	33	78	2	101	2,116	4.8
30–34	1,132	90	370	3	278	3,855	7.2
35–39	2,680	208	473	35	308	6,459	4.8
40–44	4,971	1,042	963	422	465	11,651	4.0
45–49	6,878	1,553	1,671	426	898	16,642	5.4
50–54	8,382	3,031	2,240	659	1,089	22,157	4.9
55–59	9,135	3,926	2,533	1,186	1,619	26,676	6.1
60–64	7,618	4,965	3,364	1,439	1,672	28,003	6.0
65–69	5,835	4,813	3,599	1,711	1,395	27,127	5.1
70–74	4,610	5,125	3,913	1,312	1,236	26,702	4.6
75–79	4,102	4,890	4,028	1,821	1,492	26,951	5.5
80–84	2,686	2,735	3,112	1,267	801	18,896	4.2
85–89	1,524	1,121	1,779	728	338	10,140	3.3
90–94	554	271	654	200	108	3,445	3.1
95–99	115	36	124	33	19	653	2.9
100+	14	5	7	1	0	58	0.0
All ages[(a)]	**60,520**	**33,876**	**28,962**	**11,246**	**11,994**	**235,034**	**5.1**

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

Source: Begg et al. 2007b.

Additional tables for Chapter 7: Hospitalisations for ovarian cancer

Table D7.1: Hospitalisations for ovarian cancer by age group, 2007–08

Age group (years)	Number of hospitalisations	Age-specific rate[(a)]	95% confidence interval
<20	120	0.04	0.04–0.05
20–24	139	0.19	0.16–0.22
25–29	37	0.05	0.04–0.07
30–34	180	0.24	0.21–0.28
35–39	229	0.29	0.25–0.33
40–44	449	0.59	0.53–0.64
45–49	806	1.04	0.97–1.11
50–54	1,441	2.04	1.94–2.15
55–59	2,177	3.39	3.25–3.54
60–64	2,384	4.35	4.18–4.53
65–69	2,208	5.33	5.11–5.56
70–74	1,635	4.82	4.59–5.06
75–79	1,266	4.26	4.02–4.50
80–84	846	3.47	3.24–3.71
85+	360	1.53	1.38–1.70
Total[(b)]	**14,277**	**1.22**	**1.20–1.24**

(a) Number of cases per 1,000 females.

(b) The rate shown in this row was age-standardised to the Australian population as at 30 June 2001; it is expressed per 1,000 females.

Source: National Hospital Morbidity Database, AIHW.

Table D7.2: Hospitalisations for ovarian cancer by same-day and overnight status, 1999–00 to 2007–08

	Same-day hospitalisations			Overnight hospitalisations			Total hospitalisations		
Year	Number	ASR[(a)]	95% CI	Number	ASR[(a)]	95% CI	Number	ASR[(a)]	95% CI
1999–00	7,434	0.77	0.76–0.79	3,170	0.32	0.31–0.34	10,604	1.10	1.08–1.12
2000–01	7,913	0.80	0.78–0.82	3,063	0.31	0.30–0.32	10,976	1.11	1.09–1.13
2001–02	9,095	0.90	0.88–0.92	2,978	0.29	0.28–0.30	12,073	1.19	1.17–1.21
2002–03	8,794	0.85	0.84–0.87	2,646	0.25	0.24–0.26	11,440	1.11	1.09–1.13
2003–04	9,407	0.89	0.87–0.91	2,710	0.25	0.24–0.26	12,117	1.14	1.12–1.16
2004–05	9,955	0.92	0.90–0.94	2,631	0.24	0.23–0.25	12,586	1.16	1.14–1.18
2005–06	10,317	0.93	0.91–0.95	2,942	0.26	0.25–0.27	13,259	1.19	1.17–1.22
2006–07	10,940	0.96	0.94–0.98	3,132	0.27	0.26–0.28	14,072	1.23	1.21–1.26
2007–08	11,296	0.97	0.95–0.99	2,981	0.25	0.25–0.26	14,277	1.22	1.20–1.24

(a) The age-standardised rates were standardised to the Australian population as at 30 June 2001 and are expressed per 1,000 females.

Source: National Hospital Morbidity Database, AIHW.

Table D7.3: Hospitalisations for ovarian cancer by age group, 1999–00 to 2007–08

	<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
1999–00	0.28	0.27–0.29	3.10	3.02–3.19	3.19	3.08–3.31	1.10	1.08–1.12
2000–01	0.28	0.27–0.29	2.97	2.89–3.05	3.59	3.48–3.72	1.11	1.09–1.13
2001–02	0.26	0.25–0.27	3.51	3.43–3.60	3.52	3.40–3.64	1.19	1.17–1.21
2002–03	0.26	0.25–0.27	3.21	3.13–3.29	3.20	3.09–3.31	1.11	1.09–1.13
2003–04	0.26	0.25–0.28	3.26	3.18–3.34	3.50	3.38–3.62	1.14	1.12–1.16
2004–05	0.30	0.28–0.31	3.23	3.15–3.31	3.51	3.39–3.63	1.16	1.14–1.18
2005–06	0.29	0.28–0.30	3.34	3.26–3.42	3.67	3.55–3.79	1.19	1.17–1.22
2006–07	0.27	0.26–0.29	3.55	3.47–3.63	3.79	3.67–3.91	1.23	1.21–1.26
2007–08	0.26	0.25–0.27	3.49	3.41–3.56	3.90	3.78–4.02	1.22	1.20–1.24

(a) The age-standardised rates were standardised to the Australian population as at 30 June 2001 and are expressed per 1,000 females.

Source: National Hospital Morbidity Database, AIHW.

Table D7.4: Average length of stay (ALOS) for ovarian cancer-related hospitalisations by same-day and overnight status, 1999–00 to 2007–08

Year	ALOS of same-day hospitalisations (days)	ALOS of overnight hospitalisations (days)	Total ALOS (days)
1999–00	1.0	7.3	2.9
2000–01	1.0	7.5	2.8
2001–02	1.0	8.2	2.8
2002–03	1.0	8.3	2.7
2003–04	1.0	8.7	2.7
2004–05	1.0	8.8	2.6
2005–06	1.0	7.8	2.5
2006–07	1.0	7.7	2.5
2007–08	1.0	7.6	2.4

Source: National Hospital Morbidity Database, AIHW.

Additional table for Chapter 8: Expenditure on ovarian cancer

Table D8.1: Hospital admitted patient services expenditure and number of hospitalisations for ovarian and related cancers by age group, 2004–05

Age group (years)	Hospital admitted patient expenditure		Number of admitted patient hospitalisations	Expenditure per hospitalisation ($)
	($ million)	Per cent		
<35	1	3.6	131	6,860
35–44	2	6.0	210	7,237
45–54	4	16.2	546	7,506
54–64	6	23.4	872	6,790
65–74	6	23.4	841	7,029
75–84	5	20.8	588	8,945
85+	2	6.5	159	10,379
Total	**25**	**100.0**	**3,347**	**7,547**

Note: Data pertain to those hospitalisations for which the principal diagnosis was ovarian and related cancers (i.e. codes of C56 and C57.0–C57.4 in ICD-10). Does not pertain to hospitalisations for which ovarian and related cancers was an additional diagnosis, with the principal diagnosis relating specifically to the type of cancer treatment or care received.

Source: Disease Expenditure Database, AIHW.

Appendix E: Stage at diagnosis

A number of staging systems are used to classify ovarian cancers. These systems are described in this appendix.

FIGO staging system

The International Federation of Gynecology and Obstetrics (FIGO) system is the conventional measure used to stage ovarian cancer, as well as other types of gynaecological cancers, with staging decisions mainly based on findings from surgical exploration. Ovarian tumours are given a value from I to IV, with each of the first three stages divided further into three sub-stages (Odicino et al. 2008; Pecorelli et al. 2000). Table E.1 provides a description of each of these stages and sub-stages.

Table E.1: Carcinoma of the ovary: FIGO nomenclature (Rio de Janeiro 1998)

Stage	Description
Stage I	Growth limited to the ovaries
Ia	Growth limited to one ovary: no ascites present containing malignant cells. No tumour on the external surface; capsule intact
Ib	Growth limited to both ovaries: no ascites present containing malignant cells. No tumour on the external surfaces; capsules intact
Ic[(a)]	Tumour either Stage Ia or Ib, but with tumour on surface of one or both ovaries, or with capsule ruptured, or with ascites present containing malignant cells, or with positive peritoneal washings
Stage II	Growth involving one or both ovaries with pelvic extension
IIa	Extension and/or metastases to the uterus and/or tubes
IIb	Extension to other pelvic tissues
IIc	Tumour either Stage IIa or IIb, but with tumour on surface of one or both ovaries, or with capsule(s) ruptured, or with ascites present containing malignant cells, or with positive peritoneal washings
Stage III	Tumour involving one or both ovaries with histologically-confirmed peritoneal implants outside the pelvis and/or positive retroperitoneal or inguinal nodes. Superficial liver metastases equals Stage III. Tumour is limited to the true pelvis, but with histologically-proven malignant extension to small bowel or omentum
IIIa	Tumour grossly limited to the true pelvis, with negative nodes, but with histologically-confirmed microscopic seeding of abdominal peritoneal surfaces, or histologic proven extension to small bowel or mesentery
IIIb	Tumour of one or both ovaries with histologically confirmed implants, peritoneal metastasis of abdominal peritoneal surfaces, none exceeding 2 cm in diameter: nodes are negative
IIIc	Peritoneal metastasis beyond the pelvis N2 cm in diameter and/or positive retroperitoneal or inguinal nodes
Stage IV	Growth involving one or both ovaries with distant metastases. If pleural effusion is present, there must be positive cytology to allot a case to Stage IV. Parenchymal liver metastasis equals Stage IV

(a) In order to evaluate the impact on prognosis of the different criteria for allotting cases to Stage Ic or IIc, it would be of value to know if rupture of the capsule was spontaneous or caused by the surgeon, and if the source of malignant cells detected was peritoneal washings or ascites.

Source: Heintz et al. 2006.

TNM staging system

Ovarian cancers can also be staged according to the TNM system which was initially developed by the International Union Against Cancer (UICC). This staging system describes the size of the primary tumour (T), the absence or presence of metastasis to nearby lymph nodes (N) and the absence or presence of distant metastasis (M). The TNM system is considered to be virtually identical to the FIGO system (ACS 2009; Pecorelli et al. 2000). Further information about the TNM staging system can be found on the UICC website (UICC 2009).

Summary staging system

The Surveillance Epidemiology End Results (SEER) Summary staging system (or 'summary staging system' for short) is a simpler method to stage ovarian cancers. According to Tracey and associates (2009), this summary measure is preferred by a number of cancer registries overseas and in Australia (such as the New South Wales registry) since the required information can be sourced more readily from the pathology and clinical reports to which the registries have access. In this staging system, tumours are allocated to one of three categories, as well as an 'unknown' category, as shown in Table E.2.

Table E.2: Summary staging system—extent of disease at diagnosis

Stage	Description
Localised	A malignancy limited to the organ of origin; it has spread no farther than the organ in which it started. There is infiltration past the basement membrane of the epithelium into the functional part of the organ, but there is no spread beyond the boundaries of the organ
Regional	There is tumour extension beyond the limits of the organ of origin. There is invasion through the entire wall of the organ into surrounding organs and/or adjacent issues or by direct extension or contiguous spread to nearby lymph nodes
Distant metastases	Tumour cells that have broken away from the primary tumour, have travelled to other parts of the body and have begun to grow at the new location. Distant stage is also called remote, diffuse, disseminated, metastatic or secondary disease. In most cases there is no continuous trail of tumour cells between the primary site and the distant site
Unknown	There are cases for which sufficient evidence is not available to adequately assign a stage. Examples include occasions when the patient dies before workup is completed, when a patient refuses a diagnostic or treatment procedure, and when there is limited workup due to the patient's age or a simultaneous contraindicating condition. If there is insufficient information the case cannot be assigned a stage

Source: Tracey et al. 2006.

Appendix F: Definition of ovarian cancer–related hospitalisations

Due to the method in which the principal diagnosis for hospitalisations of cancer patients is coded, it is insufficient to simply select those hospitalisations for which ovarian cancer was the principal diagnosis. Most importantly, when a patient receives same-day chemotherapy as a treatment for cancer, the Australian Coding Standards (NCCH 2008a) indicate that the principal diagnosis is to be coded to reflect the fact that the patient received chemotherapy, with the type of cancer listed as an additional diagnosis. The same coding practice is used for a number of other same-day cancer-related interventions—such as the implanting of chemotherapy ports. Hence, the number of hospitalisations would be greatly underestimated if only those for which the principal diagnosis was listed as ovarian cancer (i.e. ICD-10-AM code of C56) were included.

Thus, for the purposes of examining the number of admitted patient separations that arose specifically due to invasive ovarian cancer and were directly related to treatment/care for ovarian cancer, 'ovarian cancer–related hospitalisations' were identified in this report as follows:

- **either** a *principal* diagnosis of ovarian cancer (ICD-10-AM code of C56)
- **or** an *additional* diagnosis of ovarian cancer (ICD-10-AM code of C56) and a principal diagnosis of one of the following ICD-10-AM 'Z' codes (with these Z codes falling within ICD-10-AM Chapter 21 'Factors influencing health status and contact with health services'):
  - follow-up examination after treatment for malignant neoplasms (Z08)
  - prophylactic immunotherapy (Z29.1)
  - other prophylactic immunotherapy (Z29.2)
  - prophylactic surgery for risk-factors related to malignant neoplasm—ovary (Z40.01)
  - adjustment and management of drug delivery or implanted device (Z45.1)
  - adjustment and management of vascular access device (Z45.2)
  - radiotherapy session (Z51.0)
  - pharmacotherapy session for neoplasm (Z51.1)
  - convalescence following radiotherapy (Z54.1)
  - convalescence following chemotherapy (Z54.2).

Using data from the National Hospital Morbidity Database (NHMD) for 2007–08, Table F.1 shows the number of hospitalisations for each of the relevant Z code principal diagnoses, as well as for those hospitalisations in which ovarian cancer was the principal diagnosis.

The number of hospitalisations that pertain to each of the inclusions in the definition of ovarian cancer–related hospitalisations is shown in Table F.1. The principal diagnosis was 'ovarian cancer' for one in four (26%) of all ovarian cancer–related hospitalisations. Thus, if one were to define ovarian cancer hospitalisations based solely on this disease being classified as the principal diagnosis, 74% of hospitalisations due to this disease would be missed. For almost two in three (65%) ovarian cancer–related hospitalisations, the principal diagnosis was 'pharmacotherapy session for neoplasm' (e.g. chemotherapy) with ovarian cancer listed as an additional diagnosis.

Table F.1: Hospitalisations for ovarian cancer by same-day and overnight status, 2007–08

	Same-day hospitalisations		Overnight hospitalisations		Total hospitalisations	
Diagnosis (ICD-10-AM code)	**Number**	**Per cent**	**Number**	**Per cent**	**Number**	**Per cent**
Ovarian cancer as principal diagnosis (C56)	836	7.4	2,938	98.6	3,774	26.4
Ovarian cancer as additional diagnosis (C56) AND principal diagnosis of:						
Follow-up examination after treatment for malignant neoplasms (Z08)	0	0.0	0	0.0	0	0.0
Prophylactic immunotherapy (Z29.1)	0	0.0	0	0.0	0	0.0
Other prophylactic immunotherapy (Z29.2)	0	0.0	0	0.0	0	0.0
Prophylactic surgery for risk-factors related to malignant neoplasm—ovary (Z40.01)	0	0.0	0	0.0	0	0.0
Adjustment and management of implantable infusion device or pump (Z45.1)	640	5.7	15	0.5	655	4.6
Adjustment and management of vascular access device (Z45.2)	499	4.4	6	0.2	505	3.5
Radiotherapy session (Z51.0)	3	0.0	0	0.0	3	0.0
Pharmacotherapy session for neoplasm (Z51.1)	9,314	82.5	14	0.5	9,328	65.3
Convalescence following radiotherapy (Z54.1)	2	0.0	0	0.0	2	0.0
Convalescence following chemotherapy (Z54.2)	2	0.0	8	0.3	10	0.1
Total ovarian cancer-related hospitalisations	**11,296**	**100.0**	**2,981**	**100.0**	**14,277**	**100.0**

Source: National Hospital Morbidity Database, AIHW.

As noted in Chapter 7, not all hospitals in all states and territories formally admit patients for same-day chemotherapy services. Instead, in three states and territories, some patients are provided same-day chemotherapy on an outpatient (or non-admitted patient) basis. Such services are not captured in the NHMD. In particular, during the 1990s, hospitals in New South Wales began to apply this change in admission processes. In addition, hospitalisations data for the Australian Capital Territory from approximately 2003–04 reflect changed admission practices, as do data for South Australia from 2007–08. Thus, the recorded data on this type of admitted patient service is not comparable over time.

To illustrate the effect on the data of this change in admission processes, data on the number of hospitalisations for same-day chemotherapy sessions (referred to as 'pharmacotherapy sessions for neoplasms' in ICD-10-AM) for ovarian cancer are shown for each state and territory over time in Table F.2. While the number of such sessions increased by more than 50% between 1999–00 and 2007–08 in some of the jurisdictions—including Tasmania (186%), the Northern Territory (667%), 95% in Victoria (95%) and Western Australia (76%)—the number of chemotherapy sessions decreased by 8% in New South Wales over the period considered. Furthermore, the drop in the number of such sessions in the Australian Capital Territory is evident from 2004 –05 onwards, as is the more recent drop in South Australia between 2006–07 and 2007–08.

Table F.2: Number of ovarian cancer–related hospitalisations for same-day 'Pharmacotherapy sessions for neoplasm'[(a)] by state and territory, 1999–00 to 2007–08

Year	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
1999–00	1,227	1,861	1,867	843	653	63	110	6	6,630
2000–01	1,210	1,878	2,217	779	767	15	197	26	7,089
2001–02	877	2,168	2,594	1,166	789	114	160	84	7,952
2002–03	760	2,701	2,083	1,138	738	124	157	105	7,806
2003–04	938	3,341	2,044	1,010	593	131	211	59	8,327
2004–05	917	3,782	1,943	1,193	737	81	97	60	8,810
2005–06	940	3,582	2,098	1,212	704	250	86	88	8,960
2006–07	980	3,526	2,208	1,256	855	265	101	68	9,259
2007–08	1,133	3,624	2,284	1,486	441	180	120	46	9,314

(a) ICD-10-AM code of Z51.1.

Source: National Hospital Morbidity Database, AIHW.

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. The disease rates that would have occurred with that structure are then calculated and compared.

Associated cause of death: any other condition or event that was not related to the underlying cause of death but was still considered to contribute to the individual's death.

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.

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 ovary.

Confidence interval: 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.

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 ovarian cancer.

DALYs (disability-adjusted life years): the sum of years of life lost due to premature mortality (YLL) in the population and the equivalent years of 'healthy' life lost due to disability (YLD).

Death due to cancer: see *Mortality due to cancer*.

Heath expenditure: includes expenditure on health goods and services (e.g. 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.

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 A).

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 ovarian 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.

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 ovarian cancer to the age-standardised incidence rate for ovarian 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.

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 total number of days for admitted patients who separated during a specified reference period. A same-day patient is allocated a length of stay of 1 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 C).

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 ovarian cancer.

Primary cancer: a tumour that is at the site where it first formed (also see *Secondary cancer*).

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

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 ovarian 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 (e.g. 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 twenty times or less often (see Appendix B).

Stage: the extent of a cancer in the body. Staging is usually based on the size of the tumour, whether lymph nodes contain cancer, and whether the cancer has spread from the original site to other parts of the body (see Appendix E).

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, YLD equals the average duration of the disease (to remission or death) multiplied by a severity weight for that disease (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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List of tables

List of figures