

Executive Summary

In 2002 there were 7,708 new cases of cancer diagnosed, and 3,324 people died due to cancer in South Australia. This represents a very small increase in new cases over the previous year and 51 additional deaths.

The overall trend for cancer incidence in males and females over the last decades has been upwards, however the last five years has seen the rate stabilise as lung cancer and prostate cancer rates fall in males. In females, cervical cancer and a mix of other cancers have shown some falls, while breast cancer's rate of increase has slowed.

Looking forward, it is estimated that in 2005 there will be an additional 550 new cases of cancer and 140 deaths compared with 2002. This information can be used to adjust service delivery arrangements to meet the needs of patients. The incidence and mortality rates are expected to remain relatively stable.

Mortality rates have shown declines in males, mainly due to declines in lung cancer, while mortality trends in women remain stable.

- The most common cancers in South Australia are:
 - In males – Prostate, colorectal, lung and melanoma
 - In females – Breast, colorectal, melanoma and lung cancer
- Emerging trends of note are
 - The continued fall in lung cancer incidence in males and the increased incidence in females reflecting changing smoking patterns
 - The continued fall in cervical cancer incidence in females, to be one of the lowest rates in the world
 - The increases in melanoma for both sexes, reflecting skin damage early in life through excessive sun exposure
 - An increase in the rate of lymphomas in males, a pattern replicated across the developed countries of the world
- Cancer remains a disease predominantly of the older population with
 - 0-14 year olds accounting for <1% of cancers
 - 15-44 year olds accounting for 8% of cancers
 - 45-64 year olds accounting for 32% of cancers
 - 65+ year olds accounting for 59% of cancers

Survival rates over 5 years are poor for cancers such as pancreas (3%), lung (12%) and stomach (21%), but are good for melanoma (90%), lip (96%), prostate (73%) and breast cancers (78%). Overall survival for males after 5 years is 49.5% and for females 58.2%.

1 Introduction

Cancer remains one of the leading causes of morbidity and mortality in South Australia and is the second highest contributor to the loss of life after cardiovascular disease. One in three South Australians will be informed they have cancer at some time during their lives – a burden of 7,708 new cancer cases and 3,324 deaths in 2002.

This publication aims to give a broad picture of cancer incidence and mortality in South Australia. It continues the tradition of annual reports about cancer in South Australia since 1977, however presenting the information in a new format.

The first part of this report describes cancer surveillance in South Australia and examples of how this information is of value to Public Health. The nature of cancer and some known or suspected aetiological factors are discussed. The second section looks at the most common cancers in terms of incidence, mortality, age and sex differences and distribution by age.

The third section examines time trends in cancer incidence and mortality for each major cancer site and projections to the current year. This section also includes details of summary tables and cancers attributable to smoking and alcohol consumption. The fourth section gives details of methods used in the report and the fifth section lists references cited in the report. The major appendix to the report includes detailed tables of incidence and mortality by age and sex for each cancer site, and for a number of combined cancer sites.

1.1 What is cancer?

Cancer is a group of diseases characterised by the uncontrolled growth of abnormal cells that have the potential to spread from the site of origin and populate other tissues. If this spread becomes uncontrolled and involves vital organs, compromising their function, the disease can result in death. However, many cancers can be cured if detected early and treated promptly. Others can be controlled for many years using a variety of treatments including surgery, radiation therapy, chemotherapy, hormone therapy and immunotherapy.

Preventive measures have assumed a major role in cancer control as risk factors for various cancers have become increasingly recognised. Examples of causal associations include the links between tobacco smoking and lung cancer, human papilloma virus and cancer of the cervix, helicobacter pylori infection and stomach cancer, ultraviolet light and skin cancers, asbestos and pleural mesothelioma, and alcohol excess and liver cancer. The relationship between radiation exposure through occupational and other exposures and various forms of cancer e.g. leukaemia, is well known.

The increasing world-wide incidence observed during the latter half of the last century is largely attributable to longer life spans following advances in the management of infectious and cardiovascular diseases. Consequently last century, cancer became a major and world-wide issue of public health importance.

Population-based cancer registries are helping to address this public health issue by facilitating research where scientists hope to identify factors that increase or decrease the risk of cancer in groups of people. Surveillance of cancer incidence and mortality facilitates the monitoring of the current mainstays of cancer control, namely, prevention, early detection and intervention.

1.2 Cancer Surveillance in South Australia

The SACR provides population-based statistics about cancer incidence, mortality, and case fatality (survival) for the residents of South Australia. The data from the registry, the second oldest in the country, are now available for the diagnostic period 1977 to 2002.

The SACR data collection

The South Australian Cancer Registry (SACR) began operation in 1977 and records all new cases of invasive cancer diagnosed in South Australia (SA). In situ cancers of the bladder, female breast and in situ melanomas are also included in the collection. The very common non-melanocytic skin cancers, while of great significance, are not recorded due to imprecise recording of tumours (i.e. no histopathology confirmation), and the volume of resources required to undertake this work. These tumours are monitored through survey methods instead and are therefore considered 'non-registrable cancers'.

Primary sources of information include pathology laboratories, hospitals, treating radiotherapists, the Registrar of Births, Deaths and Marriages (BDM) and other supplementary sources (e.g. clinicians). These notifications are mandated by the SA Cancer Regulations. This information is refined through contact with the primary health care sector and with other Cancer Registries, resulting in near 100% ascertainment.

The course of any one case of cancer is continually updated as institutions are required to notify the case whenever it passes through their jurisdiction. The SACR is authorised to check with the Registrar of Births, Deaths and Marriages on a monthly basis for death certificates of persons who have died from cancer. Notification by death certificate (BDM) for SA deaths and linkage with the National Death Index for interstate deaths of SA cases, ensures that all deaths from cancers diagnosed in SA are included on the Registry database. Deaths are recorded as incident cancer-specific, from a non-cancer cause, or from another cancer, whichever is applicable.

The SACR is typical of the minimum data set for population-based cancer registries in Australia collecting information such as name, place of residence, sex, date of birth, date of diagnosis, cancer site and morphology, means of diagnosis, whether there are multiple primary sites of cancer, race, country of birth, and date, place and cause of death where applicable. These data elements can be reported on in various combinations to meet special research requirements.

Using SACR information

The Registry uses its data to give direction to cancer-control plans and programs in the areas of prevention, screening, treatment, rehabilitation, hospice and palliative care, and to monitor and evaluate the impact of these programs.

The SACR enables surveillance of trends in cancer incidence, mortality and survival within SA by cancer type and by age, sex, and geographic area of residence and diagnostic period. It also allows comparison nationally and internationally using agreed standards by providing SA cancer data to the National Cancer Statistics Clearing House, and to the International Agency for Research on Cancer.

This work permits a prompt response to public concerns about clusters of cancers or regional elevations, shows emerging cancer problems that require preventive interventions, assists in the evaluation of screening programs and identifies issues for population groups.

For example assessments of SACR data by Indigenous status are important for setting priorities, planning and evaluating cancer control programs in Aboriginal communities. Occupational assessments enable an informed response to concerns about work-related exposures and indicate where interventions should be directed. The high incidence of cancers of the lip, melanoma and, by inference, non-melanocytic skin cancers among rural workers, fishers and truck drivers, underscores the need to promote sun protection among these groups.

Researchers frequently make use of Registry data given appropriate Ethics Committee approval. The information is used to underpin examinations of cancer risk in particular populations e.g. occupational groups (veterans, particular industry workers), geographic regions, or population groups (e.g. indigenous, migrant). The provision of cancer data to researchers for the investigation of aetiological factors and factors which affect the natural history of disease enable studies of outcomes of preventive, treatment and rehabilitative procedures, and of the effectiveness of palliative and hospice services.

The SACR also supports large public health interventions such as SA Cervix Screening and BreastScreen SA. Mortality and case-survival data are important for assessing outcomes of screening and treatment programs at a population level, and for assessing the impact of new program initiatives and treatments. They indicate whether the cancer control effort in South Australia is having a comparable impact to control programs elsewhere.

Cancer registry information developments

At present the SACR is using computing and information technologies developed in the 1980s and early 1990s. The registry is looking to develop its work through the adoption of nationally agreed standards, new technologies for managing cancer registry information and examining opportunities to gather the information faster, more cost effectively and while maintaining high quality. It is looking to do this through developing improved electronic capture of cancer registrations. Investments are being made in these areas and are expected to be rolled out during 2005.

The one area of major deficiency in the current registry arrangements is the lack of additional information about stage and other prognostic factors. The collection of this additional information occurs in North America, Europe and New Zealand, however the additional information collection resources and mechanisms are not currently in place to support this work in South Australia. The collection of stage is important to better understand the effectiveness of prevention, screening and treatment programs and would make the registry a far more effective tool in cancer control. There are national developments in this area that may be of assistance to the registry in the longer term.

South Australia has a network of metropolitan Hospital-based Cancer Registries which helps fill this gap by collecting more detailed information including stage, grade, initial course of treatment, and a range of prognostic factors, for a range of specific tumour sites. The work of these registries supports the Central Population Based Registry, however is limited to the major teaching hospitals at present and is currently in need of similar development to the SACR.

These registries allow clinicians to add information on stage of progression of disease at diagnosis, other prognostic indicators, initial round of treatment, and initial response to care. These registries are used by clinicians to monitor changing patterns of care and effects of these changes on survival rates and other case outcomes. They can be used to support clinical epidemiological studies where more detailed information is required.

The aim of this work is to reduce, as far as is practicable, the burden of cancer on the South Australian population – directed by the information from the SACR.