

1 Introduction

Breast cancer is an important disease in the female population of Australia and, based on the current risks, 1 in 11 women are expected to be diagnosed with it before the age of 75. In 1996, it is estimated that 9,556 new cases of breast cancer were diagnosed in Australia. In the same year there were 2,623 deaths attributed to this cause. Breast cancer ranks as the most common cancer in women, after the less serious but more numerous non-melanocytic skin cancers. Breast cancer represents around 29% of all cancers diagnosed in women (excluding non-melanocytic skin cancers) and 18.6% of all cancer deaths; and it results in approximately 31,000 person-years of life lost. Its impact is predominantly in women aged above 50, however it is an important concern for women of all ages, and particularly so for women with a family history of the disease. Breast cancer incidence has increased steadily between 1982 and 1990, rising more sharply to a peak in 1995 and then falling in 1996. While this fall in incidence is welcomed, the present state of knowledge offers little for the primary prevention of breast cancer, and consequently a large number of women will be affected, as will their families and the community. Despite this, breast cancer's impact, in terms of morbidity and mortality, can be significantly reduced if the disease is detected at an early stage in its development.

Most interventions to detect and control breast cancer are directed at (a) extending the length of survival following diagnosis (through either cure or remission) and (b) maximising the quality of life during that survival period. A third level of control is through palliative care where treatment is not primarily targeted at extending life. Given the importance placed on survival from breast cancer, it has long been recognised that it should be a key measure that is examined regularly at both a population level and a clinical level to monitor the effectiveness of the various interventions. This recognition has recently been given by the National Health Priority Areas report on cancer (DHFS & AIHW 1998) and by the National Cancer Control Initiative (NCCI 1998), both stating that survival measurements are among the key indicators for measuring the health system performance in reducing the impact of cancer.

This report addresses this issue and focuses on reporting survival patterns in Australia on a population level. It follows the publication of survival measures in South Australia (SAHC 1997), New South Wales (Taylor et al. 1994, Supramaniam et al. 1998) and Victoria (in press) and anticipates those in Western Australia and Tasmania. In order to conduct a national survival analysis three elements must exist:

- (a) a comprehensive national cancer registration system;
- (b) a comprehensive national mortality database; and
- (c) the technical ability and social environment that allows for the drawing together of confidential information for the public good under ethical guidance and regulatory controls.

The cancer registry incidence information was made available at a national level by combining State and Territory cancer registry data into a national database, the National Cancer Statistics Clearing House, located at the Australian Institute of Health and Welfare (AIHW). Deaths data, provided by the Registrars of Births, Deaths and Marriages via the cancer registries, were combined with the National Death Index (also at the AIHW) to

provide a mechanism for identifying which women diagnosed with breast cancer from 1982 onwards were:

- (a) still alive in each calendar year up until the end of 1994; or
- (b) had died of breast cancer or other causes.

The probabilistic record linkage to bring the incidence and mortality data together was undertaken by the AIHW, after ethical review, with cases confirmed by the cancer registries according to local registry practice. These processes are described further in Chapter 2 and Appendix A.

It should be noted that at the closing date for inclusion of data in this report, Queensland data on breast cancer incidence and deaths was incomplete and hence not suitable for survival analysis. Therefore, Queensland data have been excluded from all analyses. It is anticipated that future versions of this report will include Queensland survival estimates.

It is important to note the differences between the survival estimates at a population level and those at a clinical level. Survival estimates at a population level are an average of all the outcomes of women diagnosed with breast cancer (good and bad) and also take into account the underlying risk of competing causes of death (e.g. cardiovascular disease). While the 5-year relative survival proportion for Australia is estimated at 76.8%, it cannot be inferred that all women will experience this survival proportion as an individual woman's survival time is dependent on many factors. These factors include age at diagnosis, stage of disease, family history, access to and use of treatment and further monitoring services, general health, and other complicating conditions. These factors are relevant to the clinical management and survival of women diagnosed with breast cancer. The tables and graphs in this report show the variation in survival in relation to some of these factors.

One major factor in survival that is not accounted for in this report, but is available in survival analyses in other countries, is stage at diagnosis. Three States currently collect staging information. New South Wales collects and stages all breast cancers to a broad staging system – local, regional and distant (Taylor et al. 1994, Supramaniam et al. 1998). South Australia collects staging information for all breast cancers collected through the hospital-based cancer registry system and codes them to the tumour, nodes and metastases (TNM) staging system. Victoria has been staging all breast cancers over the last several years to the TNM system. The National Breast Cancer Centre recently initiated and commissioned the development of a protocol for recording the size, grade and nodal status of breast cancers. It was developed by the cancer registries and published by the National Breast Cancer Centre (Marr et al. 1998). This protocol should be implemented in most States and Territories in collections beginning in 1999, which will enable future versions of this report to include analyses by stage at diagnosis. Nevertheless, it is known that the survival of women diagnosed with advanced cancers is significantly worse than the survival of those with cancer detected at an early stage (Taylor et al. 1994, Supramaniam et al. 1998).

The information contained in this report is expected to be used by agencies guiding policy and activities related to cancer treatment services, research and health promotion (e.g. governments, hospitals and other treatment centres, clinicians and cancer councils). The information is also expected to be useful for women diagnosed with breast cancer and for well women considering taking up the screening services.

Report structure

The remainder of this report is structured as follows:

- Chapter 2: Methods summary – a brief summary of the methods used;
- Chapter 3: Relative survival analysis results – a description and discussion of the patterns;
- Appendix A – a detailed description of the materials and methods used; and
- Appendix B – a description of incidence and mortality patterns for the breast cancer cohort.

The report is available on the Institute's web site (www.aihw.gov.au) and on the National Breast Cancer Centre's web site (www.nbcc.org.au).