

13 Cancer

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13.1 Background

Cancer was one of the original National Health Priority Areas. It made up the largest portion (19.4%) of the total burden of disease and injury in Australia in 2003¹, and accounted for 30% of all deaths in 2006.² The National Health Priority Area Initiative for cancer control focuses on eight types of cancer: lung cancer, melanoma, non-melanocytic skin cancers (including basal cell and squamous cell carcinomas), colorectal cancer, prostate cancer, non-Hodgkin lymphoma, cervical cancer and breast cancer. These eight cancers accounted for about 53% of all cancer deaths in Australia in 2005.³

Knox et al. (2008) estimated that in the Australian population, the prevalence of malignant neoplasms currently under medical management was 2.0% (95% CI: 1.7–2.3).⁴ This equates to about 400,000 Australians being managed for a malignant neoplasm. Of these, 78% also suffered from one or more comorbidities, the most common being vascular disease with 47% of people with cancer also having vascular disease.⁵ In 2005, the risk of being diagnosed with cancer before the age of 75 was one in three for males, and one in four for females.⁶

13.2 Policies and initiatives

In response to the 1981 World Health Organization's Global Strategy for Health for All by the Year 2000, cancer was identified as a priority area in the *Health for all Australians* report (1988). In 1993, the *Goals and targets for Australia's health in the Year 2000 and beyond* report set revised goals, which included cancer control as a priority for improving health.⁷

Policies relating to cancer mainly aim to prevent cancer, and detect it in its early stages rather than manage it. The following list describes some of the main policies to emerge following the recognition of cancer as a health priority.

- BreastScreen Australia was established by the Commonwealth and the states and territories in 1991, with an aim to reduce mortality from breast cancer by providing free screening mammograms to women aged 50–69 years.⁸
- Since 1991, the National Cervical Screening Program has aimed to reduce mortality from cervical cancer by encouraging women aged 18–69 years to have regular Pap smears and this resulted in an increase over time in the number of Pap smears performed.⁹
- In 1997, the first *Cancer control* report was produced, identifying the general practitioner as a key player in the prevention and early detection of cancer.¹⁰
- In 1998, the National Cancer Strategies Group was set up to bring together clinicians, governments and consumers to develop the National Cancer Control Plan as a national approach to controlling cancer.¹¹
- Priorities for Action in Cancer Control 2001–2003 was created by the National Cancer Strategies Group, and identified 13 interventions and priorities for action in cancer control.^{12,13}

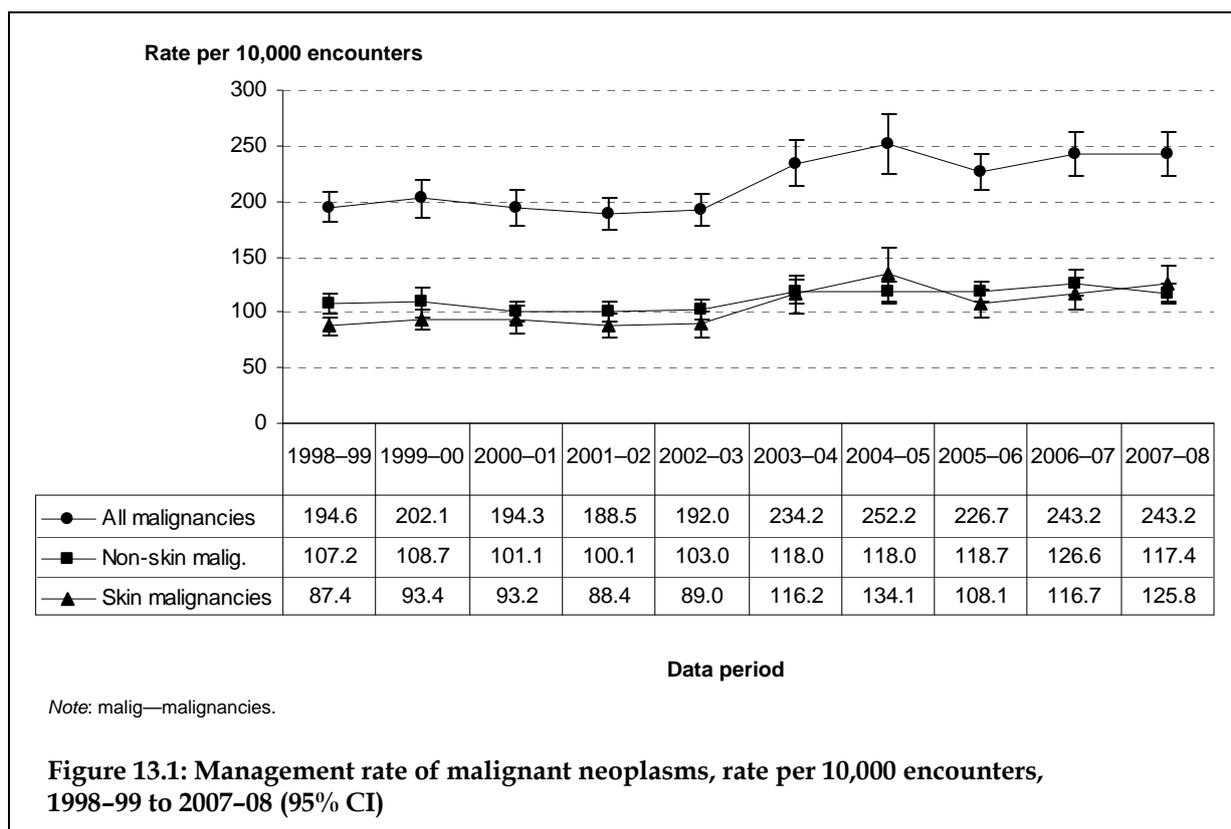
- The Australian National Tobacco Strategy 2004–09, a continuation of the National Tobacco Strategy 1999 to 2003–04 aims to reduce the burden of disease that smoking causes, including cancer.¹⁴
- The National Skin Cancer Awareness Campaign (2006) aimed to educate young people about the risks of sun exposure.¹⁵
- Phase 1 of the National Bowel Cancer Screening Program was launched in August 2006, offering free testing to people turning 55 or 65 years between May 2006 and June 2008. Phase 2 offers free testing to people turning 50, 55 or 65 years between January 2008 and December 2010.¹⁶
- The Cancer Council Australia’s National Cancer Prevention Policy 2007–09 provides a plan for cancer prevention and early detection, by focusing on lifestyle issues as risk factors for cancer. This policy followed four prior policies beginning in 1987.¹⁷
- From mid-2007 to June 2009, the Australian Government subsidised Human Papillomavirus vaccine for females aged 12–26 years as part of the National HPV Vaccination Program.¹⁸
- As a result of the 2020 Summit, the National Health Preventative Taskforce was created. It aims to reduce the burden of chronic disease-related to lifestyle factors, such as obesity, smoking, alcohol consumption and lack of physical activity.¹⁹

13.3 Management rates in general practice

Management rates are presented per 10,000 encounters, as numbers are small. Skin neoplasms (including melanomas and other skin malignancies) are analysed separately from non-skin malignancies, as they contribute to a large proportion of the neoplasms managed in general practice. Some problem and concept labels include grouped ICPC-2 and ICPC-2 PLUS codes (see Chapter 2). A full list of code groups is provided in Appendix 3.

In 2007–08, all malignancies (including skin) were managed at a rate of 243.2 per 10,000 encounters. This was significantly higher than the 1998–99 rate of 194.6 per 10,000 encounters (Figure 13.1). When skin neoplasms were excluded, the management rate of other malignant neoplasms remained relatively stable over the 10 years recorded in BEACH, showing no significant change.

However, the management rate of skin malignancies significantly increased from 87.4 per 10,000 encounters in 1998–99, peaking in 2004–05 at 134.1 per 10,000 encounters, then decreasing (though the decrease was not significant) to 125.8 per 10,000 in 2007–08 (Figure 13.1). This pattern of change mirrors the requests for complete skin check-ups. In 1998–99, patients requested a skin check-up at a rate of 83.2 per 10,000 encounters (95% CI: 75.0–94.4). This rate reached its lowest point in 2001–02 (64.2 per 10,000 encounters, 95% CI: 55.5–72.9), then increased significantly between 2003 and 2005, before settling at 153.6 per 10,000 encounters (95% CI: 124.5–182.7) in 2007–08. As a result of the increased demand, complete skin check-ups were performed more frequently in 2007–08 at a rate of 517.3 per 10,000 encounters (95% CI: 386.6–648.1) than in 1998–99 (211.4 per 10,000 encounters; 95% CI: 174.6–248.2) (results not shown). This patient-driven increase is likely to be due to public education campaigns, but may also be associated with the growth of general practice skin clinics at about the same time.



The primary contributors to the increase in the management rate of all malignant neoplasms are shown in Table 13.1, which lists the malignant neoplasms managed most frequently in general practice. Management rates of prostate cancer, breast cancer and cervical cancer all increased significantly. Unspecified/multiple malignancies, which includes metastases and cancer of an unknown site also showed a significant increase.

Table 13.1: Changes in management rates of malignant neoplasms, 1998–00 and 2006–08

Malignant neoplasm	1998–00 (<i>n</i> = 203,100)	2006–08 (<i>n</i> = 188,300)	Change ^(a)
	Rate per 10,000 encounters (95% CI)	Rate per 10,000 encounters (95% CI)	
Skin malignancies	90.5 (84.5–96.5)	121.3 (110.1–132.5)	↑
Melanoma	7.3 (6.0–8.6)	9.9 (8.2–11.6)	—
Other skin malignancies (non-melanoma)	82.5 (76.7–88.2)	110.7 (100.1–121.4)	↑
Respiratory malignancies	12.1 (9.8–14.3)	9.9 (8.2–11.7)	—
Lung/bronchus malignancy	9.9 (7.9–11.9)	8.6 (7.0–10.1)	—
Digestive malignancies	20.6 (17.5–23.6)	19.4 (17.2–21.6)	—
Colon/rectum malignancy	12.8 (10.8–14.8)	12.3 (10.5–14.0)	—
Male genital malignancies	23.8 (21.0–26.5)	29.6 (26.7–32.4)	↑
Prostate cancer	23.3 (20.6–26.0)	28.9 (26.1–31.8)	↑
Female genital malignancies	22.2 (19.8–24.5)	28.7 (25.7–31.7)	↑
Breast cancer	17.6 (15.5–19.6)	22.8 (20.3–25.4)	↑
Cervical cancer	1.0 (0.6–1.4)	2.3 (1.6–3.1)	↑
Blood malignancies	14.6 (12.7–16.5)	15.9 (13.9–17.9)	—
Non-Hodgkin lymphoma	2.0 (1.4–2.7)	2.2 (1.4–3.0)	—
Hodgkin lymphoma	3.9 (3.0–4.8)	4.3 (3.3–5.2)	—
Myeloma	2.4 (1.6–3.2)	2.3 (1.6–3.0)	—
Leukaemia	5.5 (4.3–6.6)	5.9 (4.7–7.1)	—
Urological malignancies	5.2 (4.0–6.3)	5.1 (4.0–6.2)	—
Bladder	2.9 (2.0–3.7)	2.8 (2.0–3.5)	—
Kidney	2.1 (1.3–2.8)	2.3 (1.5–3.0)	—
Unspecified/multiple malignancies	6.0 (4.7–7.2)	9.7 (8.1–11.3)	↑
<i>Subtotal</i>	194.8 (184.2–205.4)	239.5 (225.7–253.3)	↑
Total malignant neoplasms	198.5 (187.7–209.2)	243.2 (229.3–257.2)	↑

(a) The direction and type of change is indicated for each result: ↑/↓ indicates a statistically significant change; — indicates no change.

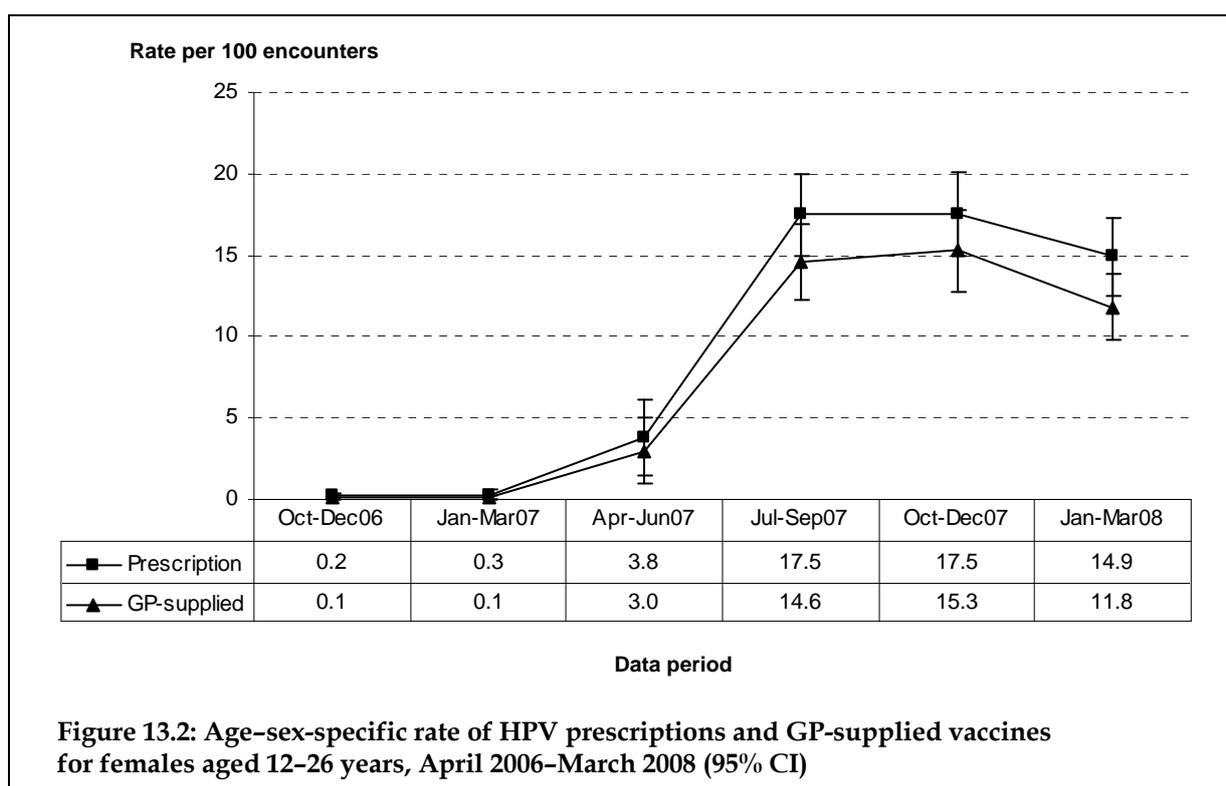
Note: CI—confidence interval.

13.4 Management rates by patient sex

The management rate of malignant neoplasms was significantly higher among men than among women in all years, and it increased significantly from 1998 to 2008 for both males and females. In 1998–99, GPs managed cancer in males at a rate of 255.3 (95% CI: 233.6–277.0) per 10,000 encounters, increasing to 322.2 (95% CI: 293.0–351.4) per 10,000 in 2007–08. A similar growth was seen in females, where cancer management rates rose from 152.5 (95% CI: 139.8–165.2) per 10,000 encounters in 1998–99 to 190.6 (95% CI: 172.1–209.2) per 10,000 in 2007–08 (results not tabled).

13.5 Human Papillomavirus vaccine

The Australian Government-funded subsidisation of the Human Papillomavirus (HPV) vaccine for females aged 12–26 years, encouraged a rapid uptake of the vaccine. The vaccine was available from November 2006; however the campaign and subsidisation began in mid-2007.²⁰ Figure 13.2 shows the rate of HPV vaccines given to female patients aged 12–26 years by a GP before and after the subsidisation of the vaccine. The rate of vaccines has already begun to drop as the number of new entrants into this age group is small, and the campaign has probably encouraged patients to get their injections early. The rate is likely to settle once subsidisation for those who have not had their first dose ceases from July 2009.²¹



13.6 Referrals to medical specialists

Although there were no significant changes in the total referral rates for both non-skin and skin malignancies, there were significant increases in referrals to oncologists and gynaecologists for non-skin malignancies and to clinics/centres for skin malignancies. Referrals to surgeons for skin malignancies significantly decreased, while referrals to dermatologists showed no significant change (Table 13.2).

Table 13.2: Changes in rates of referral to specialists by malignancy, 1998–00 and 2006–08

Medical specialist	1998–00 (n = 203,100)	2006–08 (n = 188,300)	Change ^(a)
	Rate per 10,000 encounters (95% CI)	Rate per 10,000 encounters (95% CI)	
Referrals for non-skin malignancies	1,308.7 (1,152.0–1,465.0)	1,589.7 (1,418.0–1,761.0)	—
Oncologist	218.9 (154.0–283.8)	387.6 (306.2–469.0)	↑
Specialist (unspecified)	150.5 (100.2–200.7)	34.8 (10.7–59.0)	↓
Gynaecologist	36.5 (11.2–61.7)	104.5 (63.2–145.9)	↑
Referrals for skin malignancies	2,236 (2,015.0–2,457.0)	1,843.3 (1,629.0–2,058.0)	—
Surgeon	598.5 (484.6–712.4)	315.2 (238.4–392.0)	↓
Dermatologist	995.7 (839.2–1152.0)	888.8 (738.1–1039.0)	—
Clinic/centre	5.4 (0.0 [†])	52.5 (22.7–82.2)	↑

(a) The direction and type of change is indicated for each result: ↑/↓ indicates a statistically significant change, and — indicates no change.

Note: CI—confidence interval

Earlier investigations into the management of skin malignancies across Australian Standard Geographical Classification areas²² found that GPs practising in Inner and Outer Regional areas managed skin malignancies almost twice as often as GPs in Major Cities, but were far less likely to refer their patients to a dermatologist or plastic surgeon. Inner/Outer Regional GPs were more likely to refer their patients to a surgeon.²³ This difference is probably due to varying availability of dermatologists and plastic surgeons in rural areas.

13.7 Procedural treatments

Procedural treatments for malignant neoplasms increased over the 10 years of BEACH. In the management of non-skin malignancies, procedures significantly increased from 373.9 (95% CI: 283.6–464.2) per 10,000 problem contacts in 1998–00 to 797.3 (95% CI: 680.1–914.4) per 10,000 in 2006–08. A large increase was seen in local injection/infiltration (22.8 per 10,000 contacts, 95% CI: 2.8–42.8, in 1998–00 to 387.2, 95% CI: 306.6–467.9, in 2006–08), of which more than half were given in the management of prostate cancer.

Preventive check-ups for prostate and cervical cancer both increased significantly. Prostate examinations almost doubled from 4.7 (95% CI: 3.2–6.1) per 10,000 encounters in 2003–04 to 8.4 (95% CI: 6.5–10.4) per 10,000 encounters in 2007–08 (data not available pre-2003). Similarly, Pap smears have been previously reported as significantly increasing from 60 per 10,000 encounters in 1998–99 to 110 per 10,000 encounters in 2007–08.²⁴

Procedures undertaken in the management of skin neoplasms increased from 4,575.6 (95% CI: 4,281.0–4,870.0) per 10,000 skin neoplasm problems in 1998–00 to 5,192.6 (95% CI: 4,821.0–5,564.0) in 2006–08 (results not tabled). Excisions accounted for about 75% of these procedures.

13.8 Pathology test orders

While BEACH began in April 1998, pathology test ordering data from the first 2 years are not comparable to later data because the pathology codes were expanded to incorporate greater specificity from April 2000 onward. Between 2000–01 and 2007–08, there were no significant changes in the pathology test ordering rate where non-skin malignancies were managed; however, the prostate specific antigen test, which aims to detect prostate cancer, increased significantly from 46.8 (95% CI: 40.0–53.7 per 10,000 encounters in 2000–01 to 85.7 (95% CI: 77.5–94.0) in 2007–08 for all BEACH encounters. Similarly, the faecal occult blood test which is currently the most reliable pathology screening test for bowel cancer, significantly increased from 37.3 (95% CI: 21.1–53.5) per 10,000 encounters in 2000–01 to 109.4 (95% CI: 85.2–133.7) in 2007–08. An apparent trend for increased pathology order rates in the management of skin malignancies did not reach statistical significance (results not tabled).

13.9 Discussion

The management rate of malignant neoplasms increased over the study period; however, this was due to increased management of skin neoplasms with no change in management rates of non-skin malignancies as a group. Males were managed for malignant neoplasms significantly more often than females, although both sexes experienced significant increases in management rates over the 10 years.

There were significant increases in the management rates of prostate cancer, breast cancer and cervical cancer. In the case of prostate cancer, this may be the result of higher detection rates emanating from increased prostate specific antigen testing. However, the increased management rate of cervical cancer is more likely to be due to improved survival rates (72%)²⁵ leading to long-term follow-up of the problem. Breast examinations are recorded at BEACH encounters, but do not indicate increasing rates of breast screening. Some may be 'hidden' under the label of female genital checks where the breast examination itself is not specifically mentioned. In addition, there are many screening facilities available that do not require GP involvement, particularly the BreastScreen Australia Program. Although the National Bowel Cancer Screening Program only invited a specific group of patients to take part in the program, it seemed to have generated increased awareness, as faecal occult blood tests were ordered more often. However, so far this has not led to the increased management rate of bowel cancer, seen with cervical and prostate cancers.

The controversy over use of prostate specific antigen testing as a population-based screening tool for prostate cancer²⁶ has not prevented GPs from increasingly ordering the test. This may be in response to increased patient demand, as there has been considerable media attention given to the risks of prostate cancer. The higher rate of injections administered in the management of prostate cancer suggest that GPs are not only diagnosing the cancer, but are continuing to manage it through regular hormonal injections.

The data indicate that the subsidised Human Papillomavirus vaccine has been strongly taken up by females aged 12–26 years, who are required to have their first dose by July 2009 if they are to take advantage of the subsidisation.

The management rate of skin malignancies increased by about 30% over the decade. This trend matches the increase in complete skin check-ups, indicating that the check-ups may have led to improved detection. Complete skin check-ups increased sharply in 2002, and then settled at a significantly higher rate than in the first 5 years of BEACH (1998–2002). This may be linked to public health campaigns increasing awareness of skin cancer, and to the emergence of GP skin clinics in recent years.

Although skin neoplasms were referred to other services equally as often a decade ago as they were in 2007–08, GPs increased their referrals to clinics/centres, and decreased their referrals to surgeons, while referral rates to dermatologists did not change. Unfortunately, it is not clear whether these clinics/centres were GP skin clinics.

Though not significant, there was a trend towards increasing rates of skin excisions and skin histopathology orders. This result, together with the lack of change in the overall proportion of skin malignancies referred, may indicate that GPs are beginning to perform more excisions themselves. Future BEACH data will allow testing of this hypothesis.

Referral rates for skin malignancies differed between rural and metropolitan areas. Patients living in Inner Regional/Remote areas were more likely to be referred to surgeons than to dermatologists or plastic surgeons, to whom Major City patients were more likely to be referred. This is likely to be an access issue for people living in some country areas.

13.10 Conclusion

It appears that policies that aim to minimise the effects of cancer, and the registers (which send regular reminders to be tested) of patients are increasing patient demand for screening tests, and resulting in GPs being more involved in the cancer detection process. In particular, the increased management rate of skin neoplasms suggests that GPs are increasingly detecting and managing skin malignancies with less frequent referral of the patient to specialists. With a greater emphasis on GP contribution to cancer care²⁷, their role is evolving towards that of the primary coordinator of the cancer patient's care.

Suggested chapter citation

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