

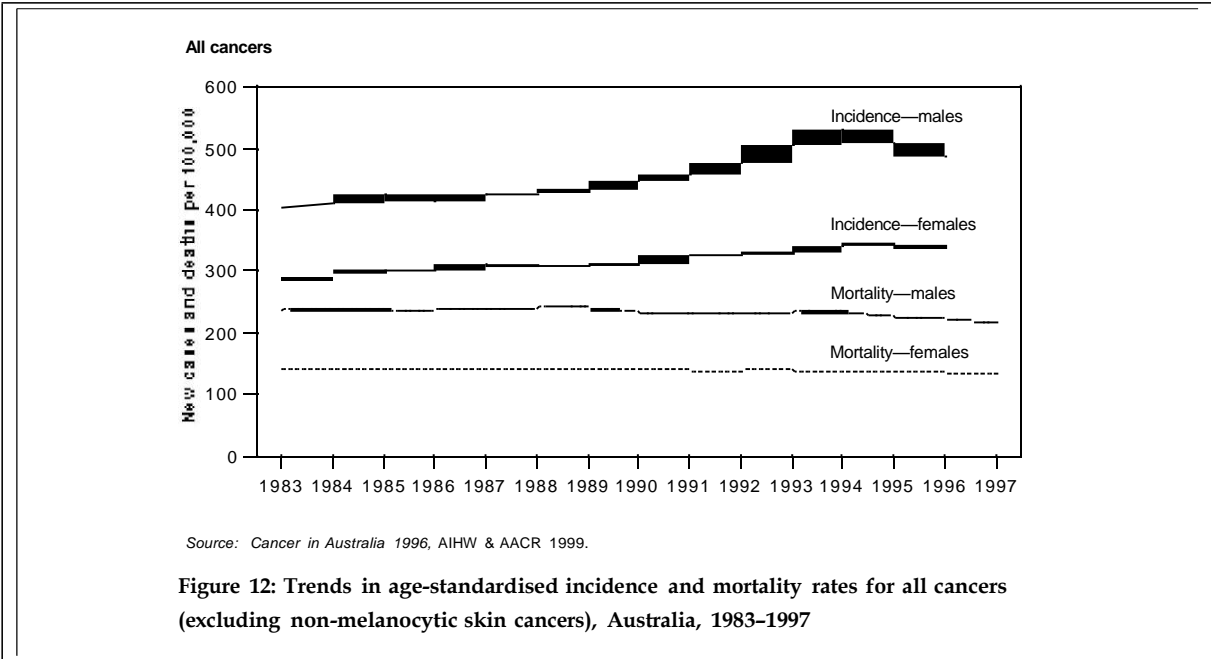
3 National trends in cancer incidence and mortality

Trends

National cancer incidence and mortality rates for the most common cancer sites are presented in Figures 12–18. Incidence data are presented for the period 1983–1996 while mortality data are presented for the period 1983–1997.

The trends in incidence and mortality rates vary with cancer site. Some rates have shown an increase since 1983 while others have remained relatively stable or decreased. In assessing these trends it is important to recognise that small changes in the trend in the most common cancers (e.g. breast, prostate) can mean a substantial shift in the numbers of new cases or deaths, whereas the same shift in less common cancers can have a relatively small impact. For example a 1% increase in the breast cancer incidence rate results in an increase of approximately 100 new cases whereas the same percentage increase in cervical cancer incidence would only result in approximately 9 new cases.

Between 1990 and 1996, age-standardised incidence rates for all cancers combined (excluding non-melanocytic skin cancers) rose for both males and females by an average of 2.1% and 1.4% per year respectively but death rates declined slightly, an average of 0.4% per year for both males and females (Figure 12). A significant proportion of the rises in incidence rates can be attributed to the recent upturn in prostate and breast cancer incidence.



Prostate cancer incidence rates were relatively stable up until 1989 but between 1990 and 1994 there was a dramatic rise in the number of new cases of prostate cancer registered

(Figure 13). This upward trend has been attributed to increased detection of the disease through increased investigations, particularly the introduction of prostate-specific antigen (PSA) testing (introduced around 1990). However, from 1994 to 1996 the age-standardised prostate cancer incidence rate fell by 26% and those States and Territories with data available for 1997 and 1998 indicate that the incidence rate will continue to fall. PSA tests are specifically designed to identify cancers before the onset of clinical symptoms. Many of these prevalent cancers may not show any symptoms, and therefore would not be detected except for PSA testing. Much of the rise in the incidence rate of prostate cancer can be attributed to detection of these prevalent cancers. The recent decline in the incidence rate indicates a return towards the underlying rate, removing the effect of these previously undetected cases. The incidence rate is also declining as the number of PSA tests conducted falls, reducing the number of prevalent cases detected (Smith et al. 1998; Threlfall et al. 1998). The death rate from prostate cancer, which is significantly lower than the incidence rate, has remained relatively stable since 1983.

Among females, breast cancer is the most frequently diagnosed cancer and it is the most common cause of cancer-related death. The incidence of breast cancer in females rose from 83.2 cases per 100,000 in 1990 to a peak of 101.1 cases per 100,000 in 1995. The breast cancer incidence rate increased on average 3.0% per annum between 1990 and 1997 (Figure 13). National breast cancer incidence data are available for 1997 because of the fast track monitoring of this cancer by the State and Territory cancer registries. The increase in incidence in the early 1990s was largely in women aged 50–69. The breast cancer mortality rates were stable from 1983 to 1994 but have declined slightly since then.

For colorectal cancer, there were marginal increases in incidence among both males and females between 1990 and 1996, an annual average increase of 1.0% and 0.2% respectively (Figure 13). In comparison, mortality rates have fallen slightly since 1990.

Between 1990 and 1996, the incidence and mortality of lung cancer among males fell by an average of 2.0% per year (Figure 14). These declining rates are attributed to decreased tobacco smoking among men. In contrast, lung cancer incidence among females increased at an average rate of 1.6% per annum between 1990 and 1996. However, the increase in lung cancer incidence is predominantly in women aged 65 years and over, while rates in younger women have generally remained stable or fallen. The death rate from lung cancer among females increased on average by 1.7% per annum between 1990 and 1996.

The incidence rate for melanoma among males increased sharply between 1983 and 1988, some of this increase due to improved registration of this cancer. Between 1988 and 1991, the rate remained stable then increased steadily until 1994 and increased sharply again in 1995 and 1996 (Figure 14). The pattern for women was similar although not quite as pronounced. The largest proportional increase for both males and females was in the 60+ age group whereas younger adults aged (25–39) had very slight increases. Mortality rates for melanoma have changed very little since 1983.

The incidence of non-Hodgkin's lymphoma increased by an average of 2.7% per year in females and 0.7% in males between 1990 and 1996 (Figure 15). Some of this rise in incidence may be linked to an increased number of cases of non-Hodgkin's lymphoma among people with HIV. A similar trend has been observed for Kaposi's sarcoma in HIV-affected people. The mortality rate in females with non-Hodgkin's lymphoma has risen steadily since 1983, while in males the mortality rate increased between 1990 and 1994, fell rapidly in 1995 and 1996, but returned to the 1994 level by 1997.

The incidence of bladder cancer for both males and females has generally declined between 1983 and 1996, although some annual fluctuation has been observed (Figure 15). It is likely that part of an increase in male incidence since 1991 is a result of the increased use of

screening for prostate cancer leading to a diagnosis of bladder cancer as part of the diagnostic work-up. Despite these changes in the incidence of bladder cancer, mortality rates for both males and females remained relatively stable throughout the period.

Stomach cancer incidence fell by an average of 4.2% and 4.4% per year for males and females respectively over the period 1983–1989. This decline has continued for males between 1990 and 1996 but at a much reduced rate while the female rate has remained fairly steady (Figure 15). Mortality rates decreased substantially for both sexes over the 1983–1997 period.

The incidence rate for leukaemias in males and females increased slightly between 1983 and 1996 although there were quite large annual fluctuations (Figure 16). At the same time the mortality rates for males and females decreased marginally.

Trends in brain cancer between 1983 and 1996 show only a minor increase in incidence and mortality in males while the incidence and mortality rates for females have remained steady (Figure 16).

Between 1990 and 1996, the male incidence and mortality rates for cancer of the pancreas fell by an average of 0.7%. In contrast, over the same period, the female incidence rate increased by an average of 0.5% per year and the female mortality rate increased by an average of 0.3% per year (Figure 16).

The age-standardised incidence rate for cervical cancer declined by an average of 4.1% per annum between 1990 and 1996 (Figure 17). This decline was achieved despite a sharp rise in new cases between 1993 and 1994. Mortality rates have fallen by an average of 3.3% per year since 1990. Some of the decline in mortality from cancer of the cervix can be attributed to the population-based cervical cancer screening program.

The incidence rates for cancer of the uterus remained fairly constant between 1983 and 1990 but have increased by 1.5% per annum since then. The 1995 and 1996 incidence rates, however, show a downward trend. Mortality rates remained relatively stable between 1983 and 1997 (Figure 17).

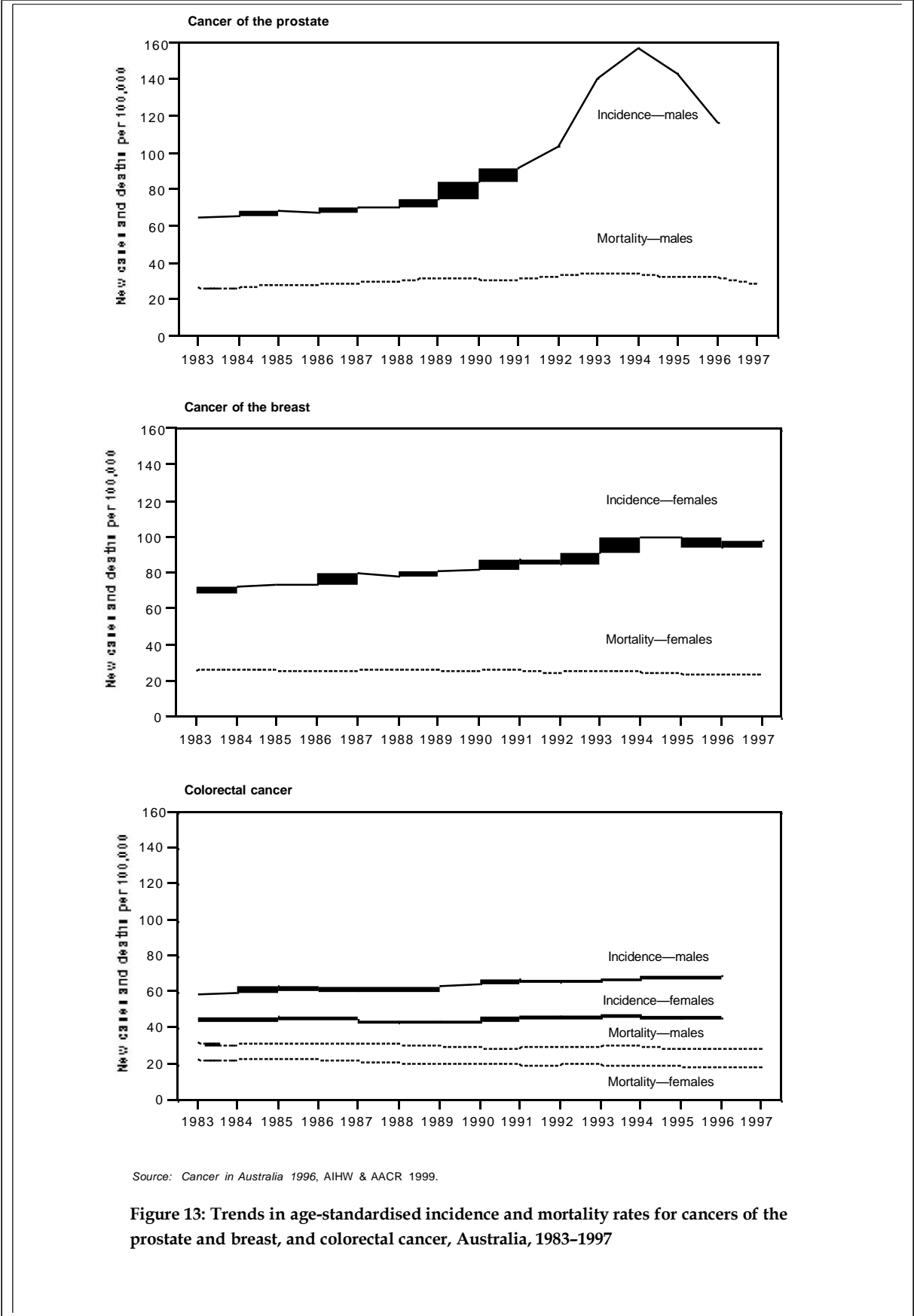
The incidence and mortality rates for cancer of the ovary have changed little since 1983 (Figure 17).

Between 1990 and 1996, incidence rates for cancer of the kidney rose annually by an average of 1.6% for males and 0.6% for females (Figure 18). Mortality rates for cancer of the kidney declined marginally in both males and females since 1990.

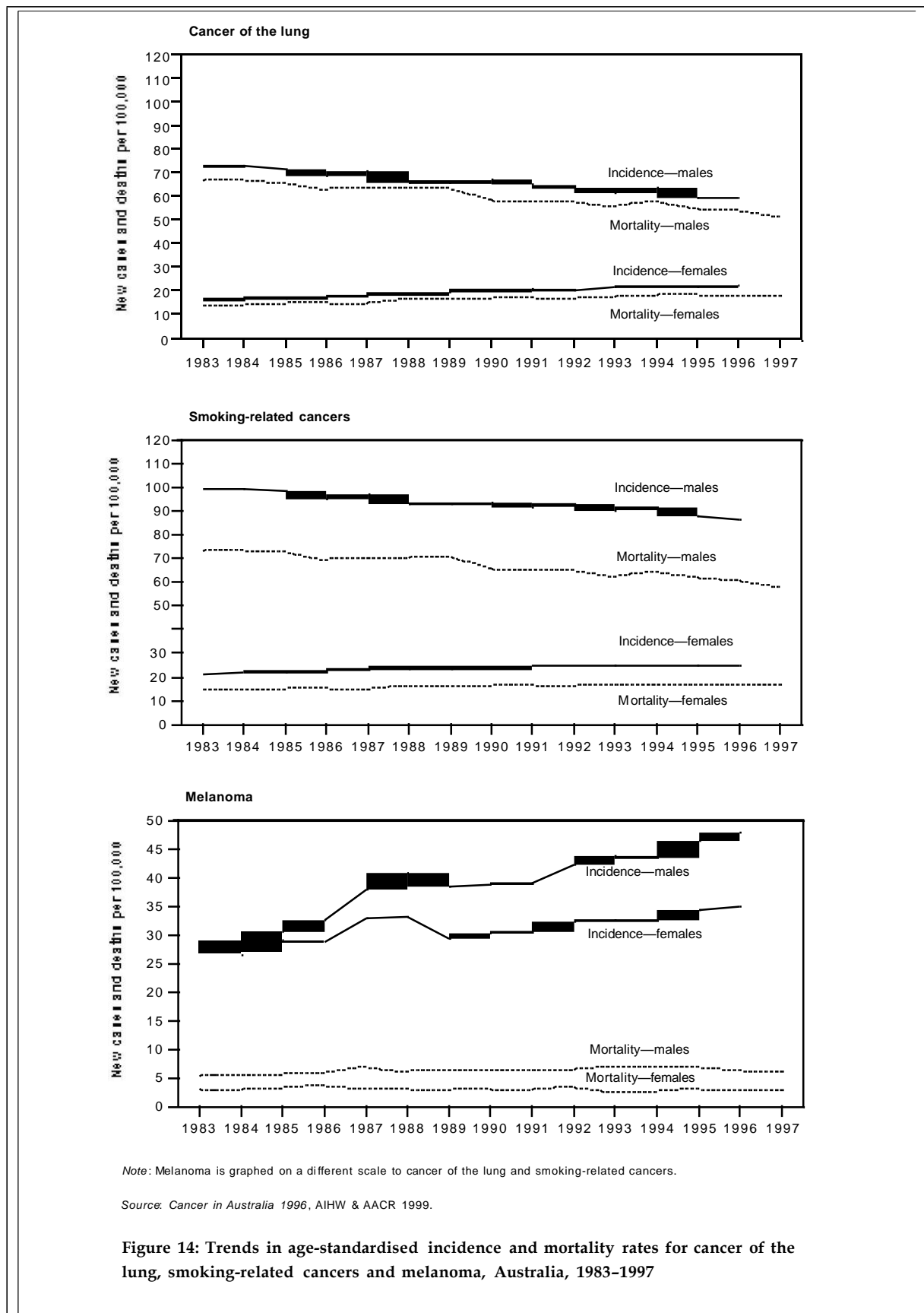
The incidence of testicular cancer has increased steadily by an average of 3.4% per annum since 1990 (Figure 18). However, this increase was not uniform across all age groups, with the proportional change in under-40 year olds much larger than in the older age groups. Despite the increase in the incidence rate, the mortality rate for cancer of the testis remains low.

‘Cancers of unknown primary site’ is a category that captures cancer diagnoses which cannot be attributed to a particular body site. While some of these cancers have common features, at least in terms of aetiology, behaviour and outcome, others are a mixed collection. This makes it difficult to interpret with certainty the patterns of these cancers, particularly for mortality where often little histological evidence is available to identify a cancer site, and therefore an accumulation of cancers occurs in this category. However, given that this cancer group represents approximately 4% of new cases and 7% of deaths it is important to know the current trends. Mortality rates remained fairly steady from 1983 to 1997. Between 1983 and 1990 there was little variation in incidence for both sexes; however, since 1990, the rate in males has shown an average annual decline of 1.9% but increased in 1996. The average annual rate for females fell slightly between 1990 and 1996 (Figure 18).

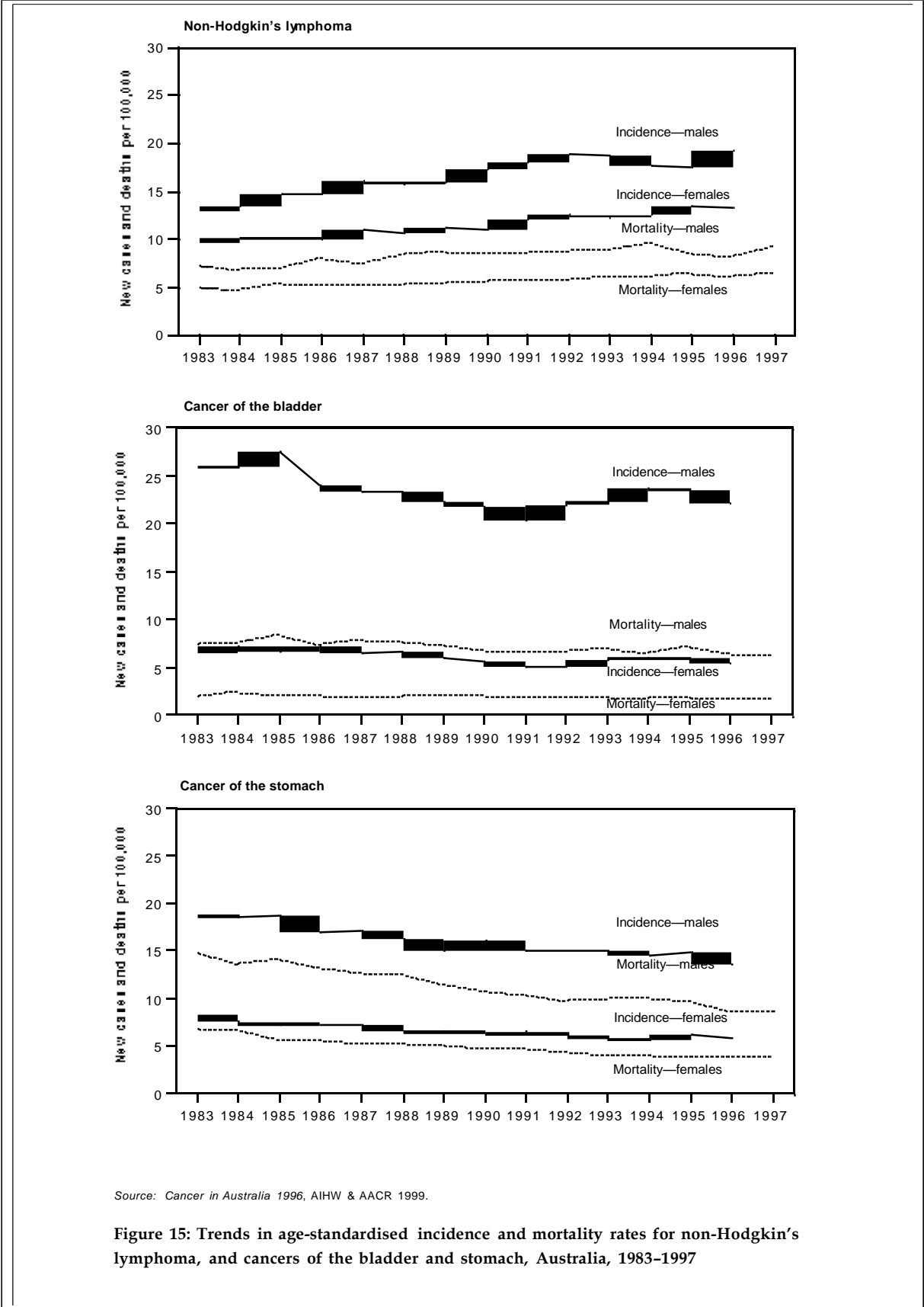
Cancers of the prostate and breast, and colorectal cancer



Cancer of the lung, melanoma and smoking-related cancers



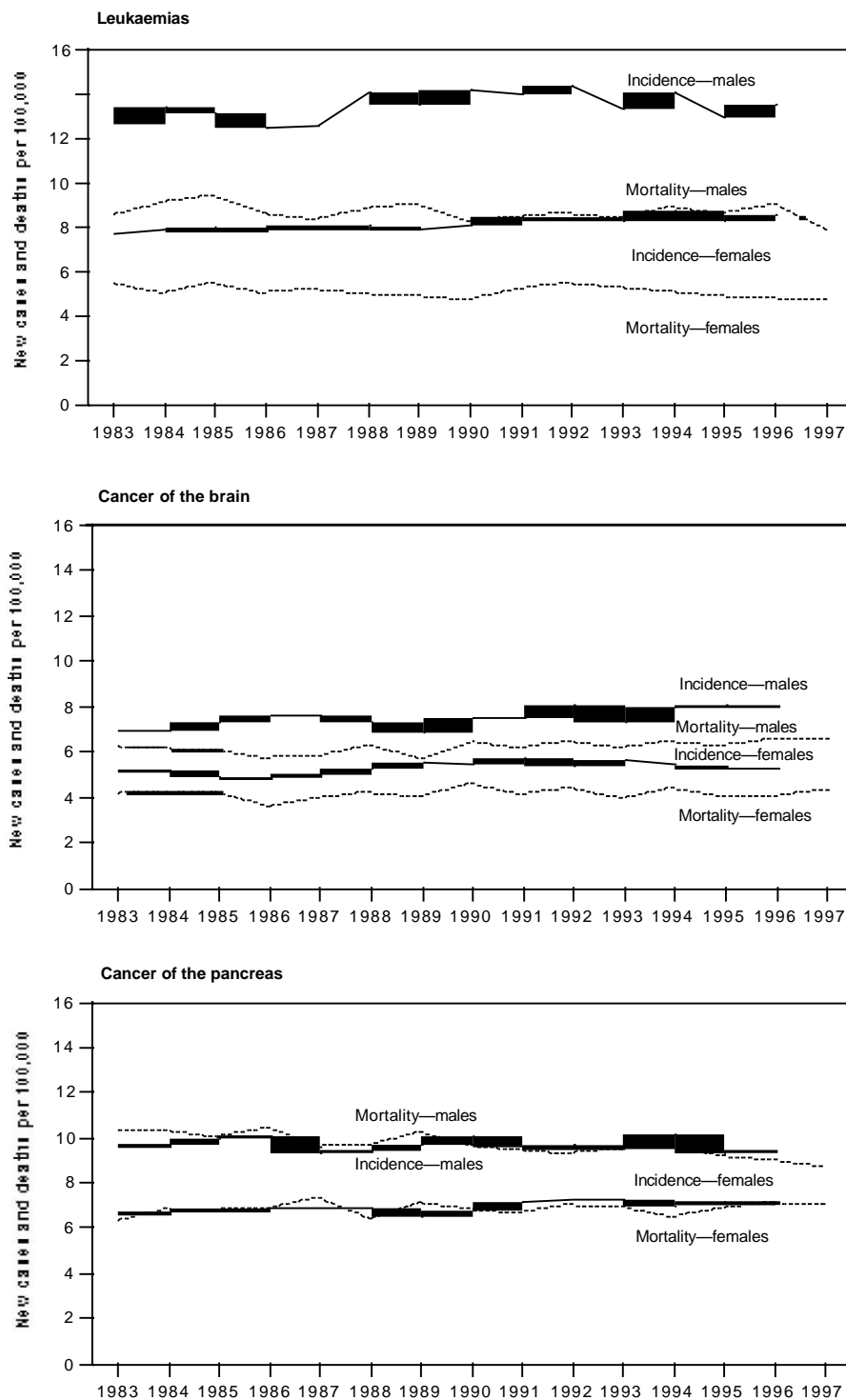
Non-Hodgkin's lymphoma, cancers of the bladder and stomach



Source: Cancer in Australia 1996, AIHW & AACR 1999.

Figure 15: Trends in age-standardised incidence and mortality rates for non-Hodgkin's lymphoma, and cancers of the bladder and stomach, Australia, 1983-1997

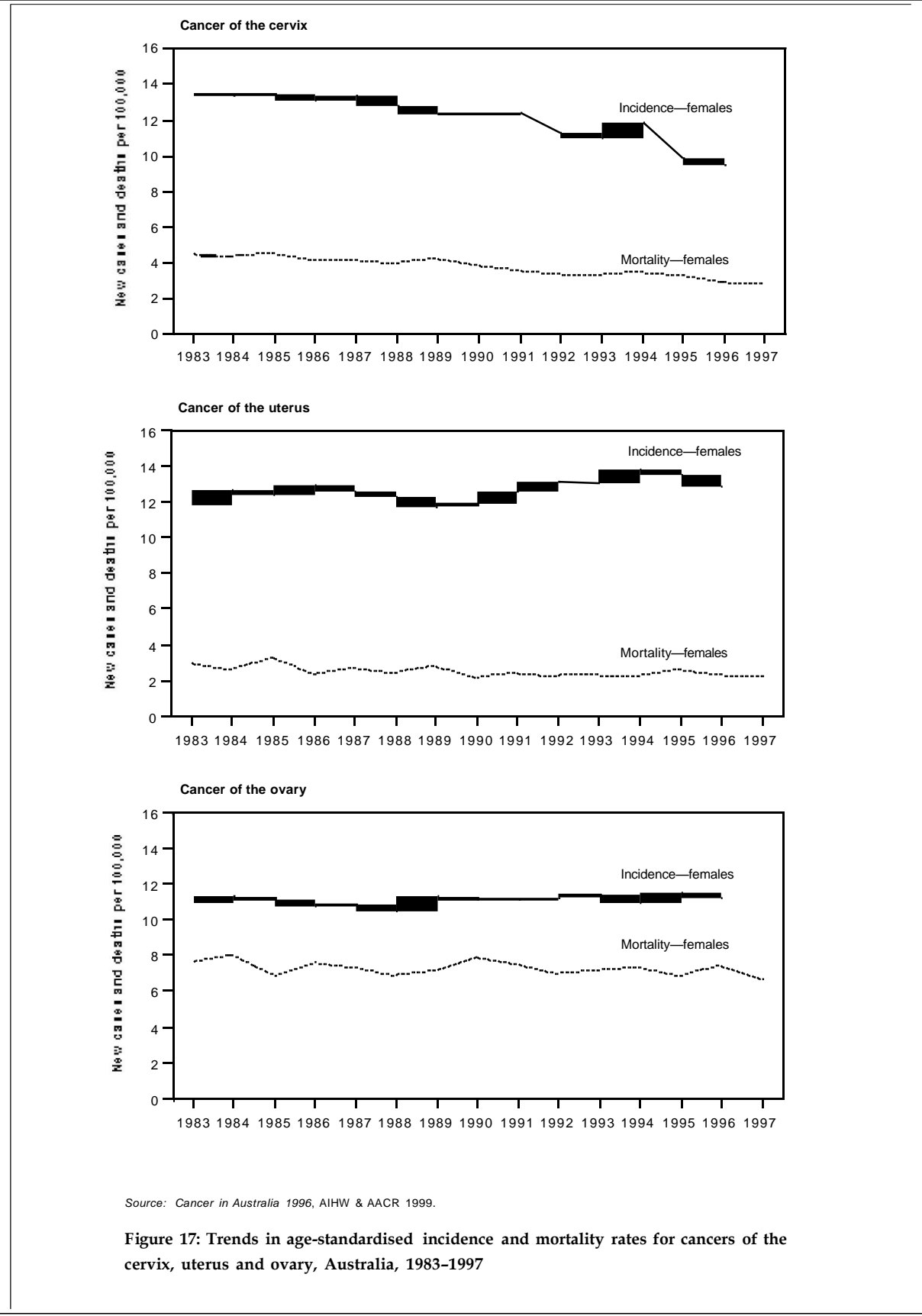
Leukaemias and cancers of the brain and pancreas



Source: *Cancer in Australia 1996*, AIHW & AACR 1999.

Figure 16: Trends in age-standardised incidence and mortality rates for leukaemias and cancers of the brain and pancreas, Australia, 1983-1997

Cancers of the cervix, uterus and ovary



Cancers of the kidney and testis, and cancers of unknown primary site

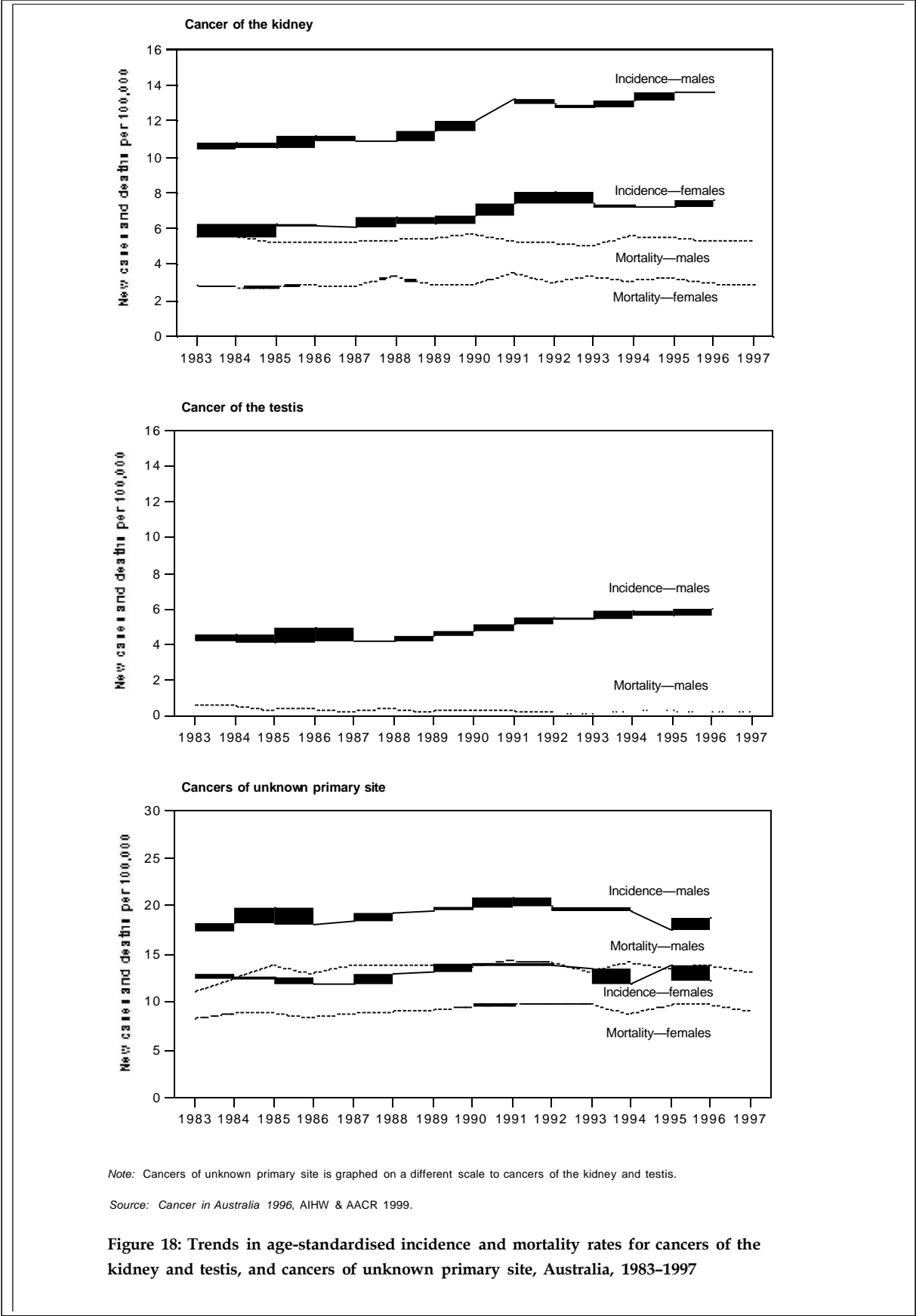


Figure 18: Trends in age-standardised incidence and mortality rates for cancers of the kidney and testis, and cancers of unknown primary site, Australia, 1983-1997