

■ Thyroid cancer

Thyroid cancer is relatively uncommon, particularly among males. In the late 1990s on average 37 new cases among males and 92 among females were registered each year, and seven and 14 deaths were recorded among males and females respectively. These represent less than 1% of all registrations and 0.3% of all cancer deaths.

The incidence of thyroid cancer has, however, been rising steadily since 1971 (when reliable data first became available for this cancer), from an average annual age standardised incidence rate of 1.7 per 100,000 to 2.6 per 100,000 among males, and from 3.7 per 100,000 to 6.0 per 100,000 among females, by 1996. Over the same period, the average annual age standardised mortality rate has shown a steady downward trend, from 0.7 per 100,000 to 0.4 per 100,000 among males, and from 1.1 per 100 000 to 0.7 per 100,000 among females.

The contrasting incidence and mortality trends provide evidence of continuing improvements in thyroid cancer survival, which is now considered to be very high compared with many other cancers (Australian Institute of Health and Welfare 2001b).

The incidence and mortality rates also follow different age distributions. Incidence rate tends to plateau among adults 45 years and older. The mortality rate, on the other hand, continues to increase at older ages, with a four- to five-fold increase in mortality risk between the 45–64 years and the 65 years and above age groups.

Thyroid cancer is also one of the few cancer sites where females demonstrate excess risk. The female:male ratios in the late 1990s were 2.3 for incidence and 1.6 for mortality, after adjusting for age.

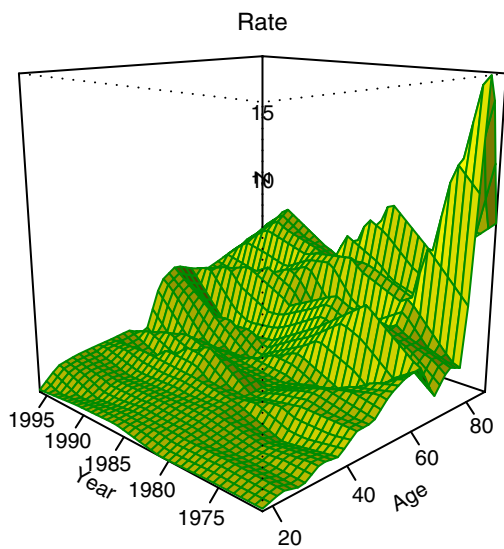
No marked differences in thyroid cancer rates (incidence or mortality) are discernible between the two main ethnic groups, except for a possible Māori excess in incidence among females. A direct deprivation gradient is detectable among females in the mid 1990s, though the numbers are very small and the observation should be interpreted with caution.

The contrasting trends in the incidence and mortality rates of thyroid cancer are forecast to continue. By 2011 the age standardised incidence rate is projected to increase to 3.4 per 100,000 (CI 2.2 – 4.4) among males and 7.4 per 100,000 (CI 5.6 – 9.4) among females.

In contrast, the age standardised mortality rate is projected to decrease slightly from its 1997 level, to 0.4 per 100,000 (CI 0.2 – 0.5) among males and 0.5 per 100,000 (CI 0.3 – 0.7) among females, in 2012.

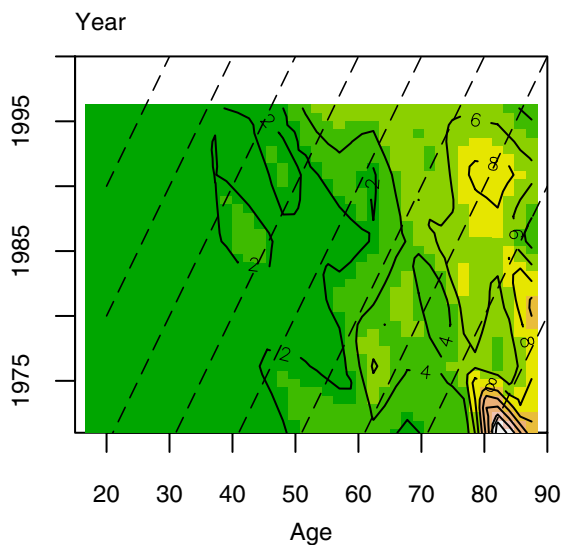
Figure 33.1 Historical trends in age specific rates, thyroid cancer, males

(a) Male incidence rates, perspective plot

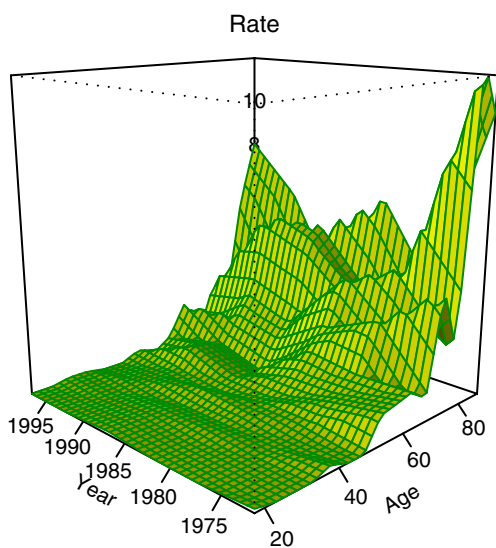


Maximum rate = 21 per 100,000

(b) Male incidence rates, contour plot

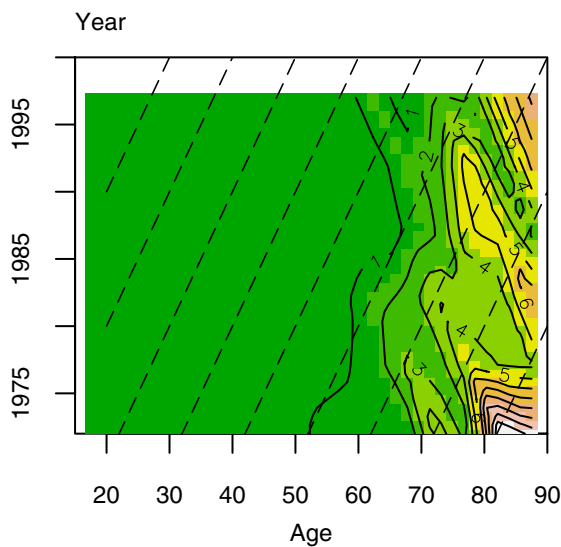


(c) Male mortality rates, perspective plot



Maximum rate = 12 per 100,000

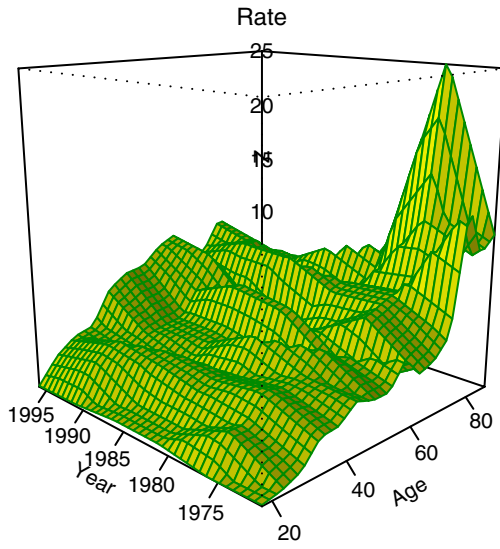
(d) Male mortality rates, contour plot



Please refer to Chapter 2 for interpretation of charts

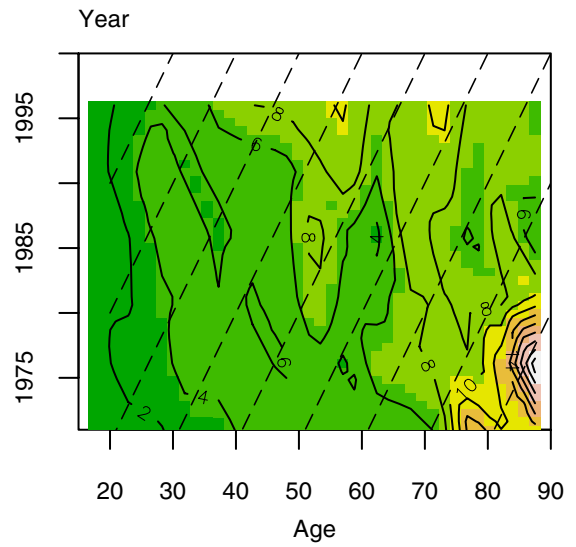
Figure 33.2 Historical trends in age specific rates, thyroid cancer, females

(a) Female incidence rates, perspective plot

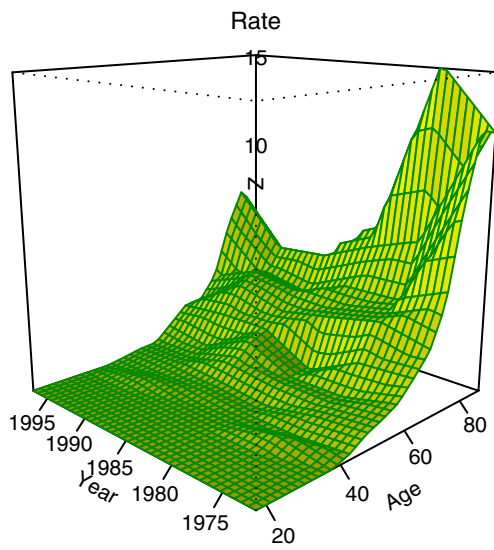


Maximum rate = 26 per 100,000

(b) Female incidence rates, contour plot



(c) Female mortality rates, perspective plot



Maximum rate = 15 per 100,000

(d) Female mortality rates, contour plot

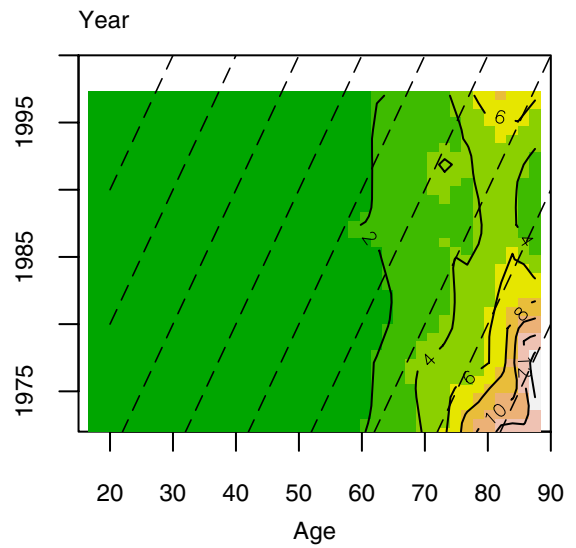
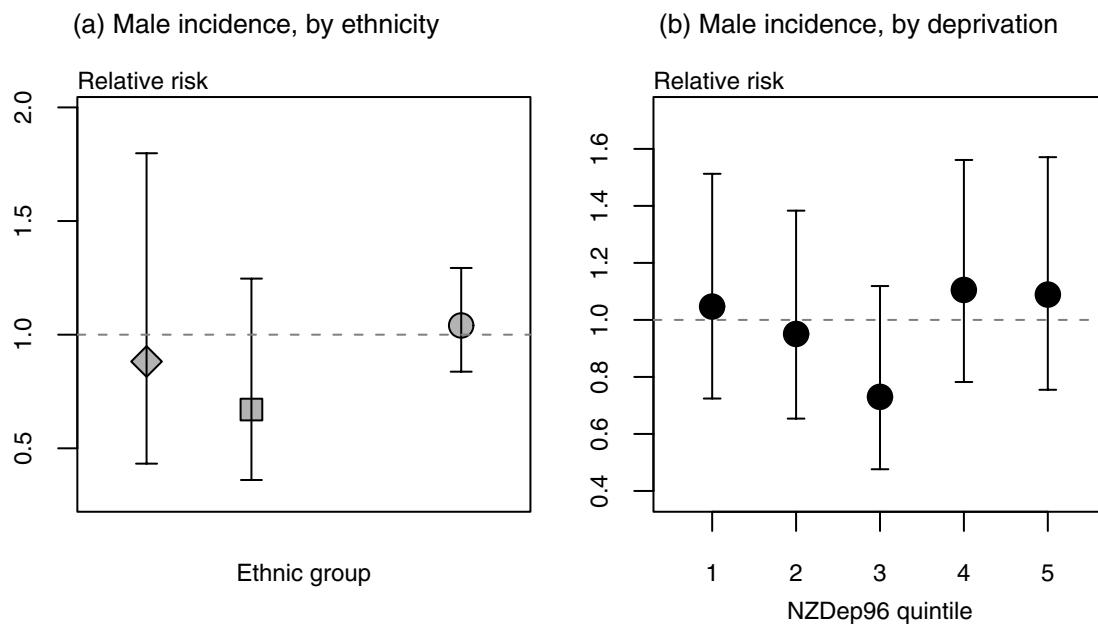


Figure 33.3 Relative risk 1996/97, thyroid cancer, males



(c) Male mortality, by ethnicity

Robust rate ratios cannot be calculated because of the small number of cases in some ethnic groups.

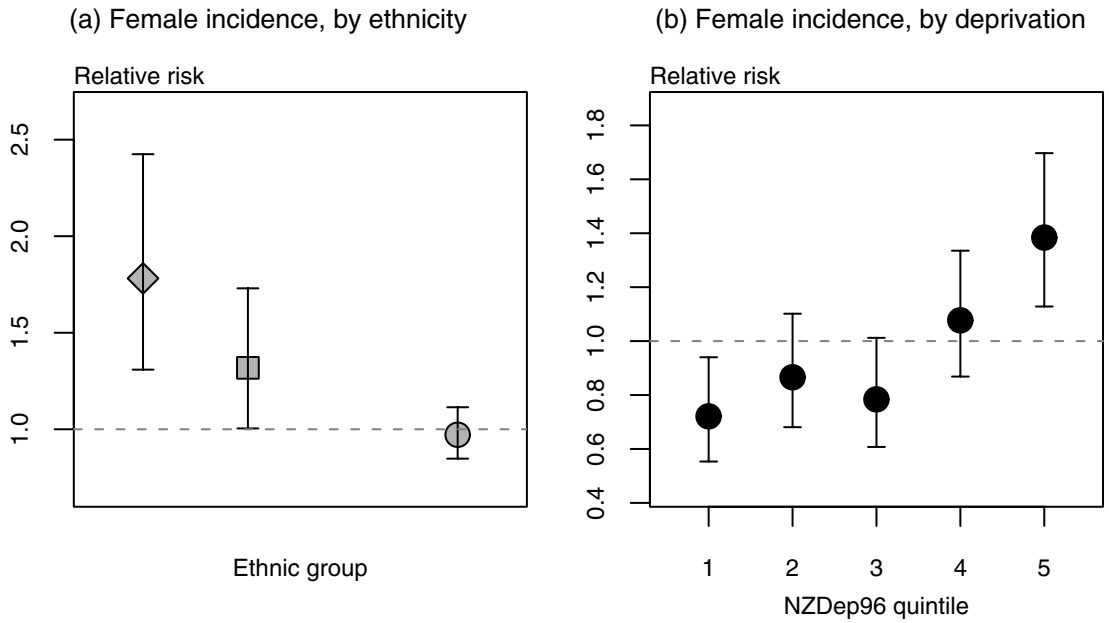
(d) Male mortality, by deprivation

Robust rate ratios cannot be calculated because of the small number of cases in some deprivation quintiles.

Ethnic group key:

- ◆ sole Māori
- total Māori
- non-Māori

Figure 33.4 Relative risk 1996/97, thyroid cancer, females



(c) Female mortality, by ethnicity

Robust rate ratios cannot be calculated because of the small number of cases in some ethnic groups.

(d) Female mortality, by deprivation

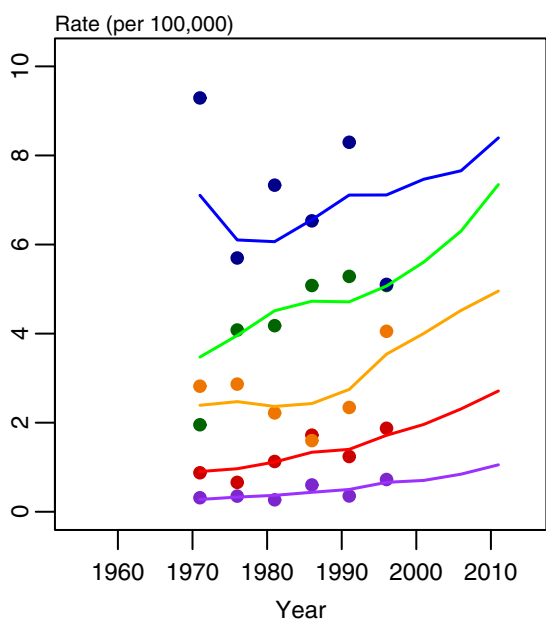
Robust rate ratios cannot be calculated because of the small number of cases in some deprivation quintiles.

Ethnic group key:

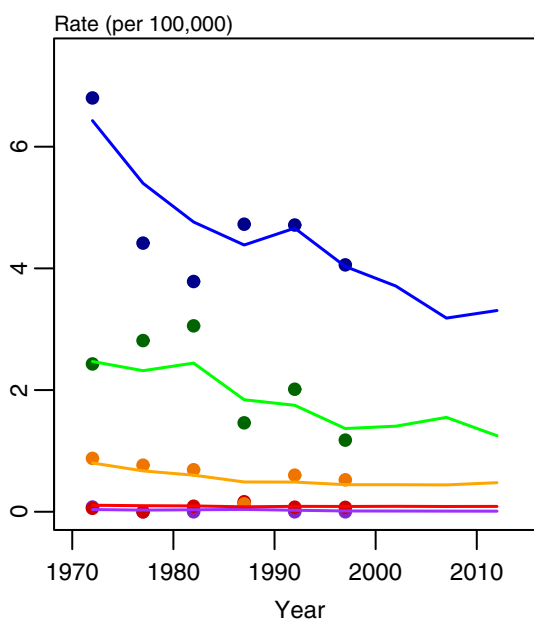
- ◆ sole Māori
- total Māori
- non-Māori

Figure 33.5 Trends and projections of life cycle stage specific rates, thyroid cancer

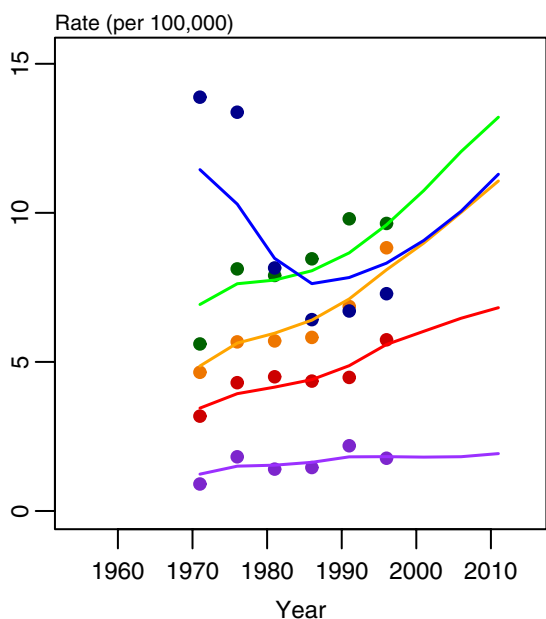
(a) Male incidence rates



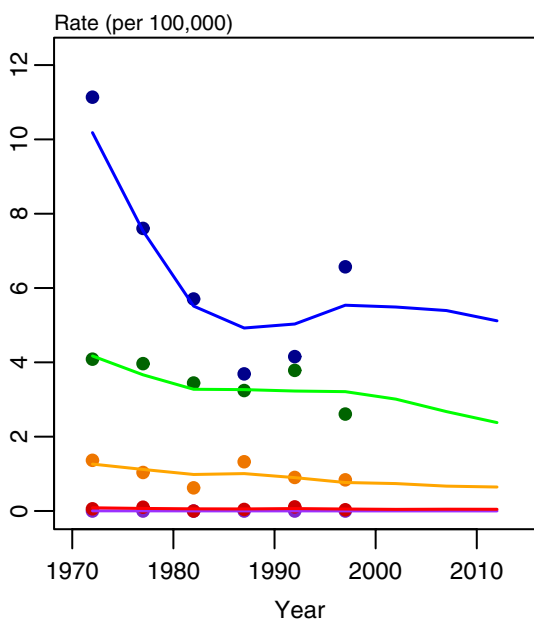
(b) Male mortality rates



(c) Female incidence rates



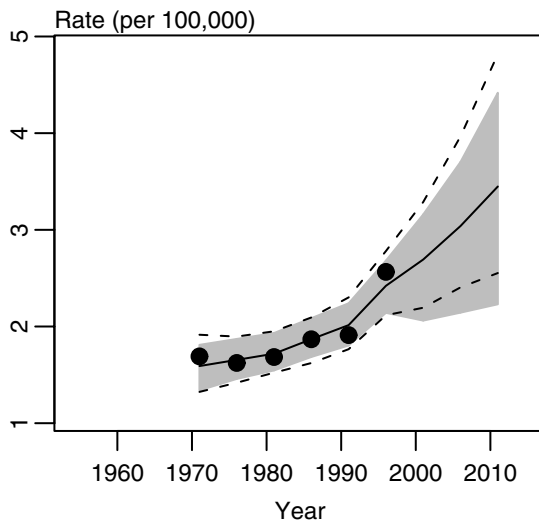
(d) Female mortality rates



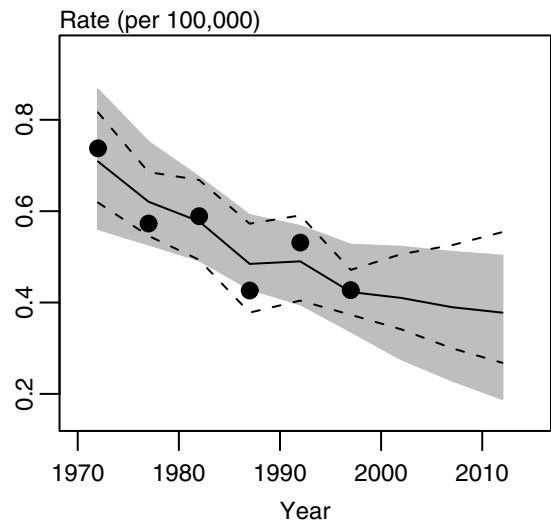
- Key:
- 15–24 years
 - 25–44 years
 - 45–64 years
 - 65–74 years
 - 75 years and above

Figure 33.6 Trends and projections of age standardised rates, thyroid cancer

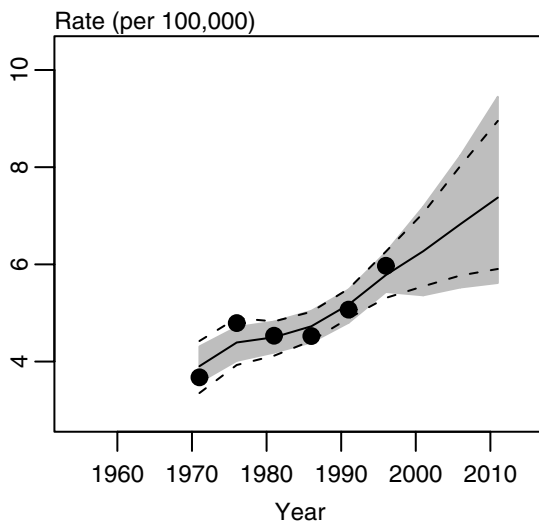
(a) Male incidence rates



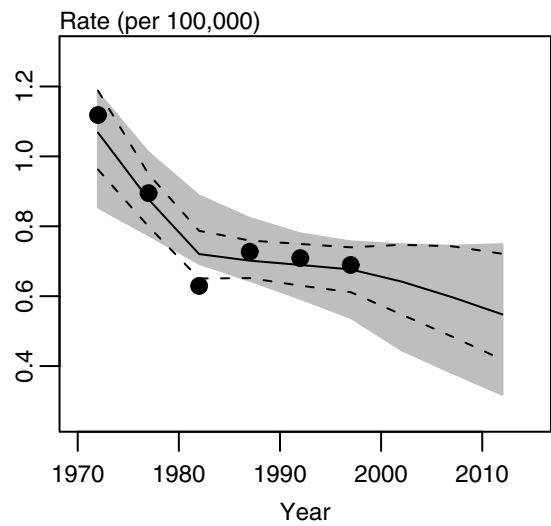
(b) Male mortality rates



(c) Female incidence rates



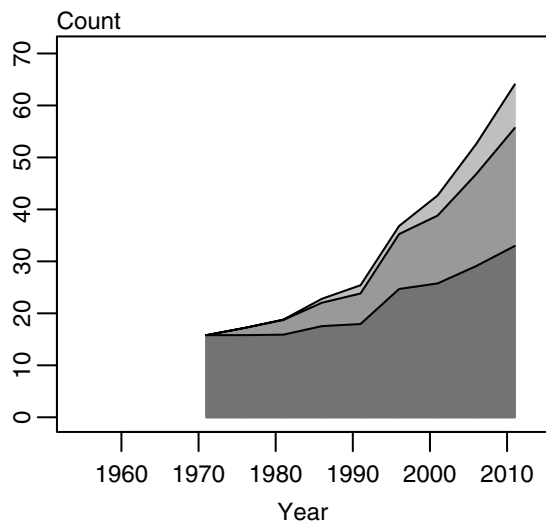
(d) Female mortality rates



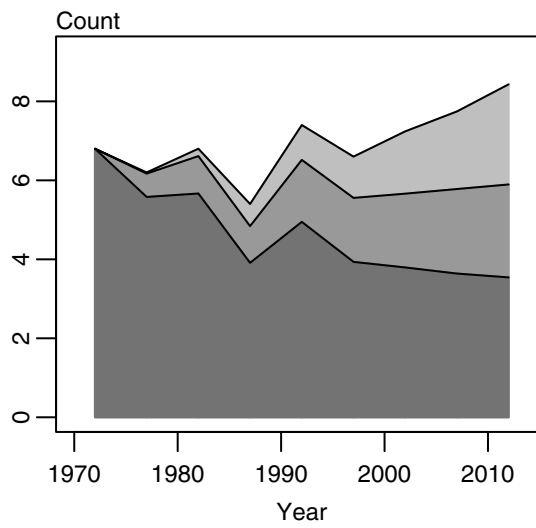
Key: ● Observed
 — Fitted and projected
 - - Minimum and maximum estimates
 ■ 90% Bayesian credible interval

Figure 33.7 Drivers of change in the cancer burden, thyroid cancer

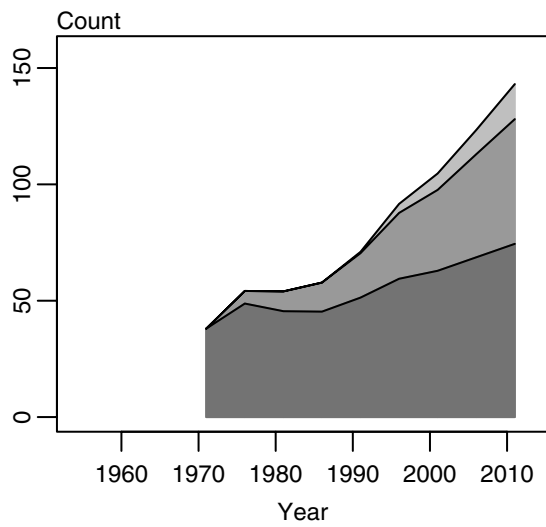
(a) Male registrations



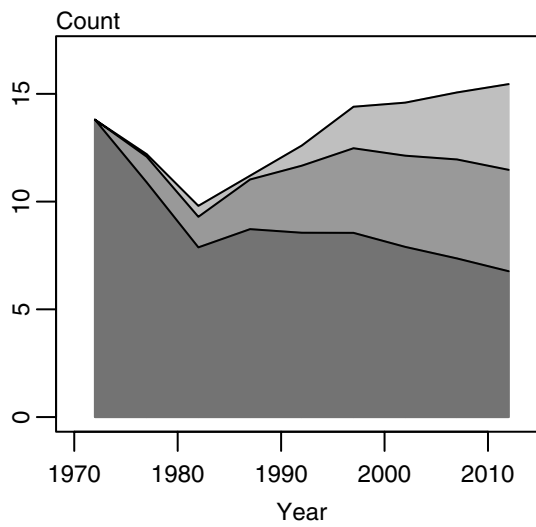
(b) Male deaths



(c) Female registrations



(d) Female deaths



Key:

- Risk effect
- Population size effect
- Population ageing effect

Table 33.1 Key results, thyroid cancer

Males

	Incidence			Mortality		
	1996	2011 (CI)	change (%)	1997	2012 (CI)	change (%)
<i>Age standardised or age specific rate (per 100,000)</i>						
15+	2.6	3.4 (2.2 – 4.4)	-	0.4	0.4 (0.2 – 0.5)	-
15–44	1.5	2.1 (0.9 – 2.8)	-	0.0	0.1 (0.0 – 0.1)	-
45–64	4.1	5.0 (2.7 – 7.9)	-	0.5	0.5 (0.2 – 0.6)	-
65+	5.1	7.8 (4.7 – 13.7)	53	2.2	2.1 (1.0 – 3.4)	-
<i>Number of cases</i>						
15+	37	64 (33 – 100)	73	7	8 (4 – 12)	14
15–44	12	18 (7 – 24)	50	0	1 (0 – 1)	-
45–64	15	27 (14 – 42)	80	2	3(1 – 3)	-
65+	9	19 (12 – 34)	111	4	5 (3 – 9)	-

Females

	Incidence			Mortality		
	1996	2011 (CI)	change (%)	1997	2012 (CI)	change (%)
<i>Age standardised or age specific rate (per 100,000)</i>						
15+	6.0	7.4 (5.6 – 9.4)	24	0.7	0.5 (0.3 – 0.7)	-
15–44	4.5	5.2 (3.2 – 8.1)	-	0.0	0.0 (0.0 – 0.1)	-
45–64	8.8	11.1 (7.2 – 15.5)	26	0.8	0.6 (0.3 – 1.0)	-
65+	8.6	12.3 (7.5 – 16.6)	43	4.5	3.7 (1.9 – 5.1)	-
<i>Number of cases</i>						
15+	92	143 (91 – 205)	55	14	15 (8 – 23)	7
15–44	38	44 (27 – 68)	16	0	0 (0 – 1)	-
45–64	33	62 (40 – 86)	88	3	4 (2 – 6)	-
65+	21	38 (23 – 51)	81	11	12 (6 – 16)	9

CI = 90% Bayesian credible interval

Percentage change omitted when estimate is not robust because of small numbers.

