

■ Breast cancer

This chapter is restricted to breast cancer among females (the very small number of cases among males is included in the analysis of ‘Adult cancer of other sites’, Chapter 34).

Breast cancer is the most common cancer among females. In the late 1990s this site accounted for just over one-quarter of all new registrations and nearly one-fifth of all cancer deaths among adult females in New Zealand.

The age standardised incidence rate of breast cancer has been rising over the observation period, from an annual average of 59 per 100,000 in 1956 to 117 per 100,000 in 1996, an increase of 98%. Over the same period, however, the annual number of registrations has almost quadrupled, from 488 to 1936.

By contrast, the age standardised breast cancer mortality rate has fluctuated within a narrow range over the observation period, peaking in the late 1980s at about 40 per 100,000 and then falling to 36 per 100,000 in 1997. Despite this stable or declining mortality risk, the annual number of breast cancer deaths increased over the period 1972 to 1997 from 427 to 643 (an increase of 50%) as a result of demographic trends.

In the late 1990s nearly three-quarters of breast cancer registrations and over 80% of deaths occurred in post-menopausal women (50 years and above). At this time incidence rates differed significantly between the two major ethnic groups only for the ‘sole’ ethnic classification. However, both ‘sole’ and ‘total’ Māori experienced considerably higher breast cancer mortality than non-Māori (when adjusted for age), suggesting poorer survival with breast cancer among the former ethnic group. Reasonably clear evidence of a direct deprivation gradient in incidence rate (but not mortality rate) was detected.

The age standardised breast cancer incidence rate is forecast to increase further over the next decade, but more slowly than previously, reaching an annual average of 127 per 100,000 (CI 102 – 161) by 2011, a 9% increase in risk over 1996. However, the number of registrations is projected to rise much more steeply, increasing by almost half to 2893 (CI 2255 – 3758). This dramatic increase in breast cancer burden principally reflects the impact of increasing population size and, to a smaller extent, the effect of population ageing, superimposed on the relatively small anticipated increase in breast cancer risk.

In contrast to the forecast for incidence, the age standardised breast cancer mortality rate is projected to continue to decline, reaching an annual average of 31 per 100,000 (CI 28 – 41) by 2012, a 12% decrease from the 1997 rate. The number of deaths, however, is projected to increase by 20% to 774 (CI 643 – 1053), as the fall in risk is more than offset by the increase in population size together with the population ageing effect.

The impact of breast cancer screening

This forecast does not, however, include the effect of BreastScreen Aotearoa (BSA), the national breast cancer screening programme, which began too recently (1998) to be reflected in the historical data. Assuming that coverage reaches 70% overall by 2006, and that the programme is extended at that time to include the 65–69 years age group, an additional decline in mortality of approximately 11–15% (corresponding to about 85–115

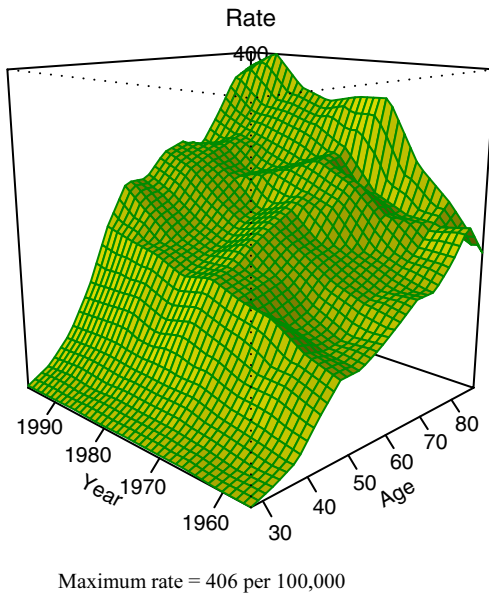
avoided deaths per year)¹ is forecast by 2012 (Figure 12.6). This would reduce the breast cancer toll in that year to approximately 660–690 deaths. At the same time, the effect of screening will be to further increase the number and rate of incident cases, through earlier detection of invasive cancers and increased detection of (pre-invasive) ductal carcinoma in situ.

By 2012 we forecast that lung cancer will overtake breast cancer as the leading cause of cancer death among females. However, breast cancer will continue to dominate the female cancer spectrum for incidence, with this site potentially accounting for up to one-third of all registrations once the effect of the screening programme is included in the model.

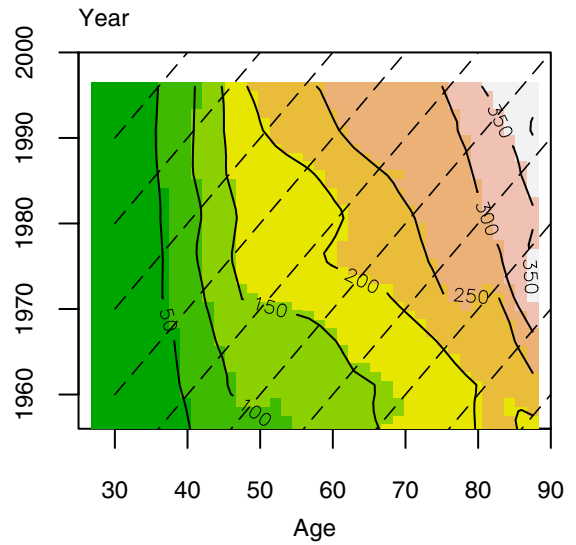
¹ This estimate is lower than the 30% reduction based on randomised controlled trials, reflecting conservative assumptions for coverage and efficacy used in our model.

Figure 12.1 Historical trends in age specific rates, female breast cancer

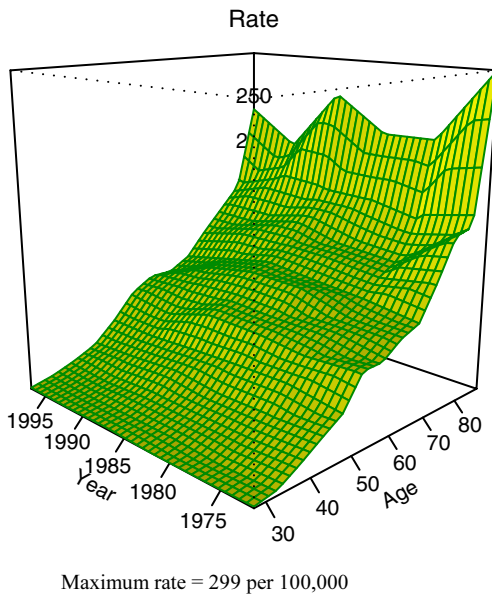
(a) Incidence rates, perspective plot



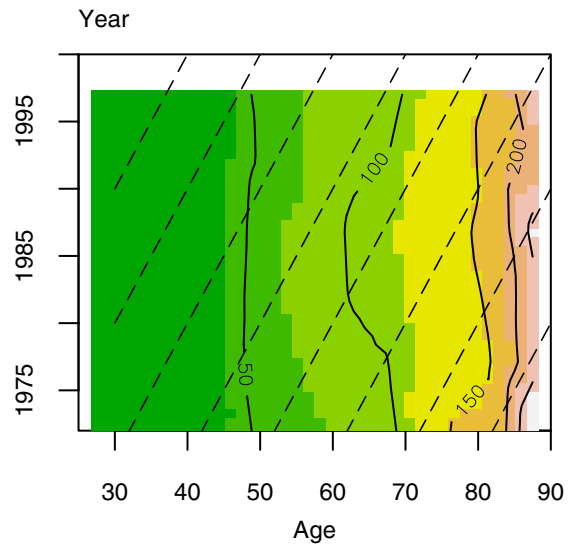
(b) Incidence rates, contour plot



(c) Mortality rates, perspective plot

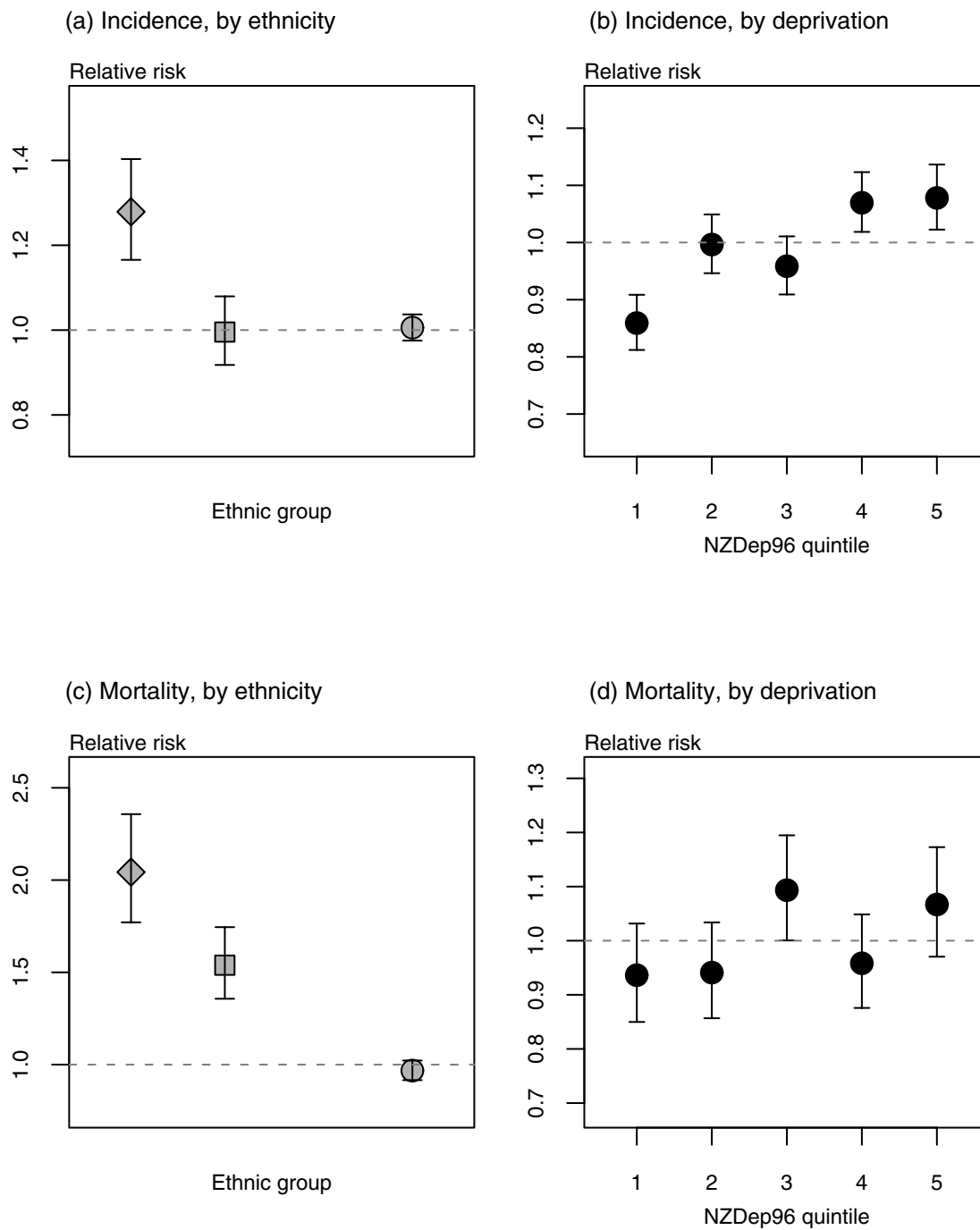


(d) Mortality rates, contour plot



Please refer to Chapter 2 for interpretation of charts

Figure 12.2 Relative risk 1996/97, female breast cancer



Ethnic group key:

- ◆ sole Māori
- total Māori
- non-Māori

Figure 12.3 Trends and projections of life cycle stage specific rates, female breast cancer

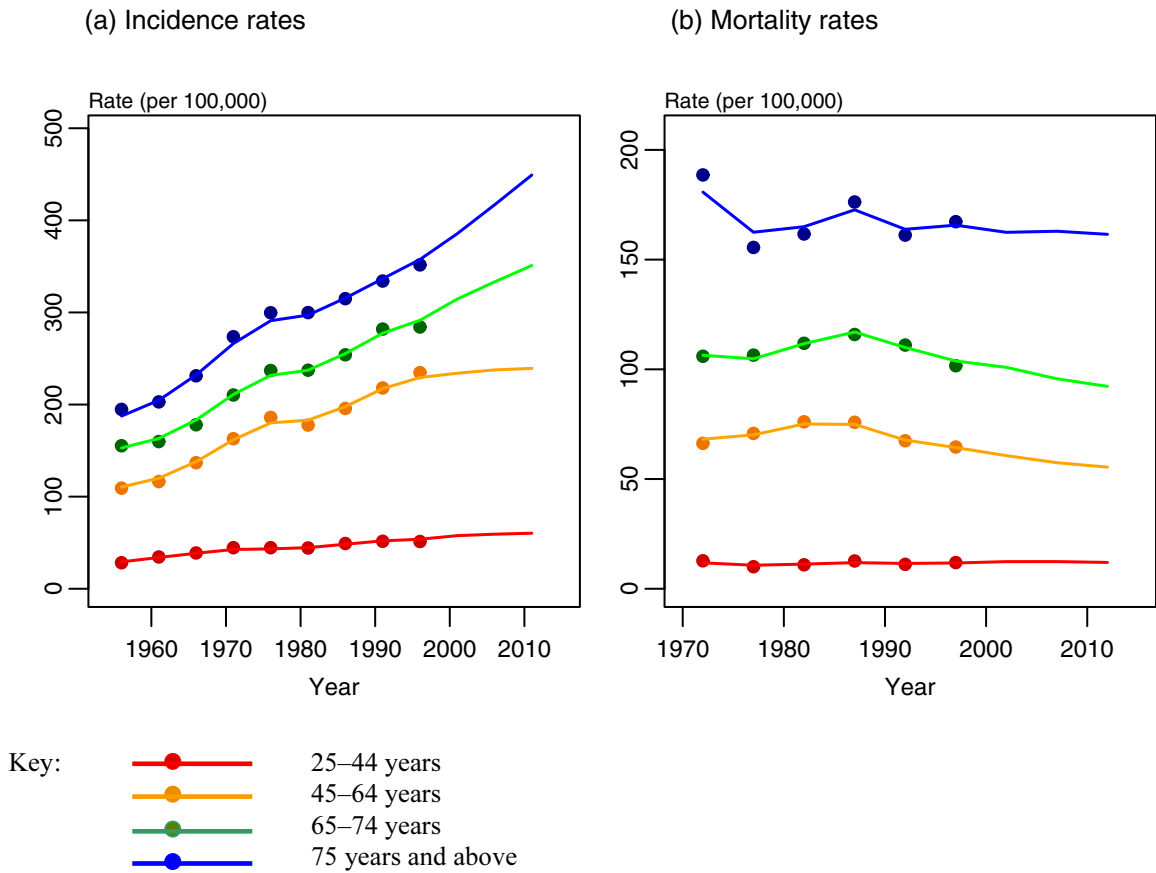


Figure 12.4 Trends and projections of age standardised rates, female breast cancer

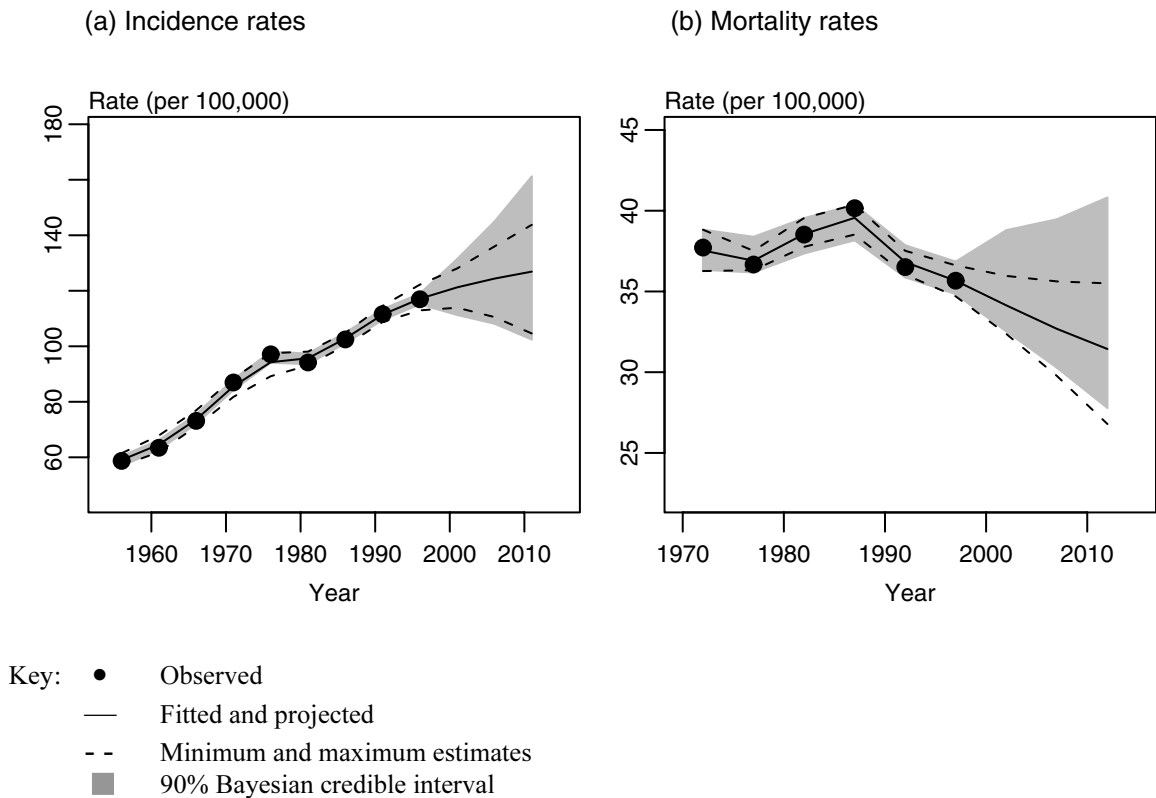
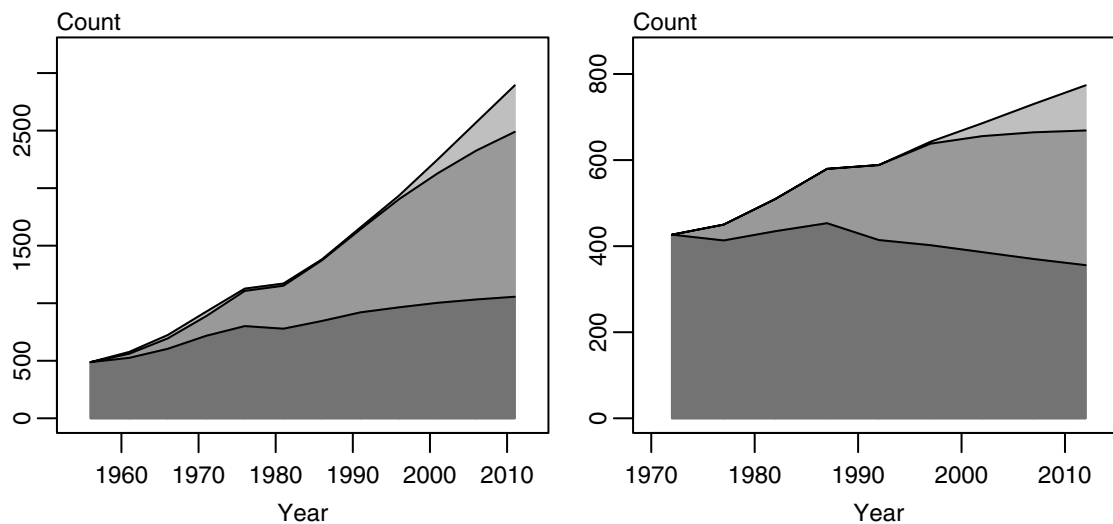


Figure 12.5 Drivers of change in the cancer burden, female breast cancer

(a) Registrations

(b) Deaths



Key:
 Risk effect
 Population size effect
 Population ageing effect

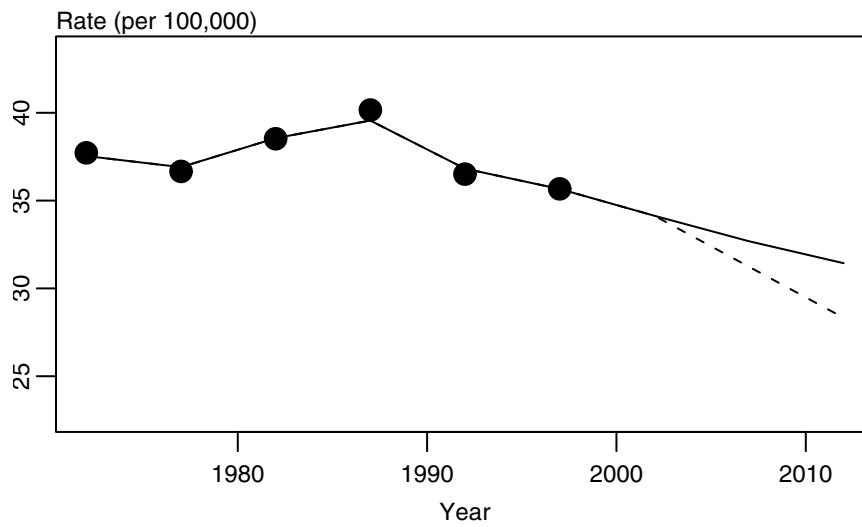
Table 12.1 Key results, female breast cancer

	Incidence			Mortality		
	1996	2011 (CI)	change (%)	1997	2012 (CI)	change (%)
<i>Age standardised or age specific rate (per 100,000)</i>						
15+	117	127 (102 – 161)	9	36	31 (28 – 41)	-12
25–44	51	60 (46 – 80)	18	12	12 (9 – 17)	1
45–64	235	239 (189 – 313)	2	65	55 (49 – 80)	-14
65+	315	398 (308 – 509)	26	133	125 (100 – 162)	-6
<i>Number of cases</i>						
15+	1936	2893 (2255 – 3758)	49	643	774 (643 – 1053)	20
25–44	297	337 (256 – 449)	14	70	67 (51 – 92)	-4
45–64	872	1336 (1055 – 1748)	53	247	314 (275 – 450)	27
65+	767	1220 (943 – 1560)	59	326	393 (316 – 511)	21

CI = 90% Bayesian credible interval
 Percentage change omitted when estimate is not robust because of small numbers.

Figure 12.6 Alternative projections to 2011, female breast cancer: effect of screening

Age standardised mortality rates



Key: ● Observed
— Fitted and projected
-- Projected, with screening

