

APPENDIX ONE: ICD CODES

	ICD-10-AM	ICD-9-CM
Malignant neoplasms	C00–C97	140–208, 238.6, 273.3
Lip, oral cavity and pharynx	C00–C14	140–149
Digestive organs	C15–C26	150–157, 159
• Oesophagus ⁴	C15	150 excluding 150.8
• Cancer of stomach	C16	151
• Colorectal	C18–C21	153–154
– Cancer of colon	C18	153
– Rectum, rectosigmoid junction and anus	C19–C21	154
• Liver and intrahepatic bile ducts	C22	155
• Gallbladder, other and unspecified parts of biliary tract	C23–C24	156
• Pancreas	C25	157
• Other digestive organs ⁵	C17, C26	150.8, 152, 159
Respiratory and intrathoracic organs	C30–C39	160–162, 163, ⁶ 164–165
• Larynx	C32	161
• Trachea, bronchus and lung	C33–C34	162
• Other respiratory and intrathoracic organs	C30–C31, C37–C39	160, 163, ⁷ 164–165
Bone and articular cartilage	C40–C41	170
Skin	C43–C44	172–173
• Melanoma of skin	C43	172
• Other malignant neoplasms of skin	C44	173
Mesothelial and soft tissue	C45–C49	158, 163, ⁸ 171, 176
• Mesothelioma	C45	
• Soft tissue	C46–49	
Breast: female	C50 and female	174
Breast: male	C50 and male	175
Female genital organs	C51–C58	179–184
• Cervix uteri	C53	180
• Uterus	C54–C55	179, 182
• Ovary	C56	183.0
• Other female genital organs	C51–C52, C57–C58	181, 183.2–183.9, 184
Male genital organs	C60–C63	185–187
• Prostate	C61	185
• Testis	C62	186
• Other male genital organs	C60, C63	187
Urinary tract	C64–C68	188–189
• Kidney, except renal pelvis	C64	189.0
• Bladder	C67	188
• Other urinary tract	C65–C66, C68	189.1–189.9
Eye and other parts of central nervous system	C69–C72	190–192
• Brain	C71	191
• Other eye and central nervous system	C69–C70, C72	190, 192

⁴ 150.8 = C26.8.

⁵ 150.8 = C26.8.

⁶ Not including 163 if registration C45.0.

⁷ Not including 163 if registration C45.0.

⁸ Including 163 if registration C45.0.

	ICD-10-AM	ICD-9-CM
Thyroid and other endocrine glands	C73–C75	193–194
• Thyroid gland	C73	193
• Other endocrine glands	C74–C75	194
Ill-defined, secondary and unspecified sites	C76–C80	195–199
Lymphoma	C81–C85	200–202.2, 202.8
• Hodgkin's disease	C81	201
• Non-Hodgkin's lymphoma	C82–C85	200, 202.0–202.2, 202.8
Multiple myeloma and other immunoproliferative diseases and plasma cell neoplasms	C88, C90	203, 238.6, ⁹ 273.3
Leukaemias	C91–C95	202.4, 204–208
• Lymphoid leukaemia	C91	202.4, 204
• Myeloid leukaemia	C92	205
– Acute myeloid leukaemia	C92.0, C92.4, C92.5	205.0
– Other myeloid leukaemia	C92.1–C92.3, C92.8–C92.9	205.1–205.9
• Other leukaemias	C93–C95	206–208
Other and unspecified malignant neoplasms of lymphoid, haematopoietic and related tissue	C96	202.3, 202.5–202.6, 202.9

GUIDE TO ABRIDGED LABELS

	ICD-10-AM	Abbreviation
Lip, oral cavity and pharynx	C00–C14	Oral cancers
Rectum, rectosigmoid junction and anus	C19–C21	Rectum
Liver and intrahepatic bile ducts	C22	Liver
Gallbladder, other and unspecified parts of biliary tract	C23–C24	Gallbladder
Trachea, bronchus and lung	C33–C34	Lung
Bone and articular cartilage	C40–C41	Bone
Cervix uteri	C53	Cervix
Kidney, except renal pelvis	C64	Kidney
Multiple myeloma and other immunoproliferative diseases and plasma cell neoplasms	C88, C90	Multiple myeloma
Other and unspecified malignant neoplasms of lymphoid, haematopoietic and related tissue	C96	Other lymphoid, haematopoietic and related tissue

⁹ 238.6 = C90.20.



INTRODUCTION

Official health data undercount Māori cancer registrations, hospital admissions and deaths. This appendix reports our estimates of the size of undercount of Māori cancer registrations and deaths for the period 1996–2001. We also report the impact of the ‘ever Māori’ method of ethnicity classification on the estimated undercount. This method counts as Māori anyone ever recorded as Māori in any cancer registration, hospital admission or death registration, or on the National Health Index (NHI) during the period of analysis.

METHODS

Cancer registrations and deaths from 1995 to 2001 (any cause) and hospital admissions from 1996 to 2003 were obtained from the NZHIS. Each event has three ethnicity fields associated with it, as well as the three associated with that person’s NHI data (name, address, date of birth and ethnicity). Using encrypted NHI numbers to identify anonymous individuals, each event was assigned an ethnicity using data from successive additions of data sets. This enabled us to examine the difference made by the inclusion of each data source.

A study of ethnicity data in Wellington Hospital in 1999 reported that an unrealistically high proportion of admissions were being coded as ‘Other, not further defined (code 54)’¹⁰ (Moala 1999). This suggests that the 54 code may have been used as a default entry when coders were having difficulty categorising ethnicity (possibly multiple ethnic groups stated, or ‘New Zealander’ type responses), or perhaps as a default entry for ‘not stated’. We therefore examined the proportion of deaths, hospital admissions and cancer registrations that were coded as 54 and not stated (99), along with the codes for Māori (21) and all other specific non-Māori codes grouped together.

RESULTS

Table A1: Deaths 1996–2001: number (%) in each ethnic category, by method of categorisation

Ethnicity (in priority order)	On death registration only	On death, NHI or cancer registrations	On death, NHI or cancer registrations	On death, NHI, cancer registration or hospital admission
Māori ethnic group	15,526 (9.4%)	16,228 (9.80%)	16,271 (9.83%)	16,475 (9.95%)
Non-Māori	148,336 (89.6%)	148,895 (89.95%)	148,888 (89.94%)	148,763 (89.87%)
Other not further defined (54)	70 (0.04%)	330 (0.2%)	303 (0.18%)	244 (0.15%)
Not stated (99)	1,602 (1.0%)	81 (0.05%)	72 (0.04%)	52 (0.03%)
Total	165,534 (100%)	165,534 (100%)	165,534 (100%)	165,534 (100%)

¹⁰ Code 54 at Level 2 of the Standard Classification of Ethnicity (Ministry of Health 2004a).

The ‘ever Māori’ method increased the number of deaths classified as Māori during 1996–2001 from 15,526 (9.4% of all deaths) to 16,475 (9.95% of all deaths) – an increase of 6%. The number of deaths specifically coded as non-Māori also increased using this method, and the proportion with no ethnicity assigned decreased considerably.

The increase in Māori deaths using the ‘ever Māori method’ was very close to the 7% undercount identified for the 1996–1999 period by the New Zealand Census–Mortality Study, which probabilistically matched death registrations and census data (Ajwani, Blakely et al 2003c; Ajwani, Blakely et al 2003b). This led us to be reasonably confident of our estimates of mortality rates for Māori using the ‘ever Māori’ method. Therefore, we took the deaths classified as Māori by this method as the gold standard for estimating the undercount in cancer registrations and hospital admissions.

Table A2: Malignant cancer registrations 1996–2001: number (%) in each ethnic category, by method of categorisation

Ethnicity (in priority order)	On cancer registration only	On cancer registration or NHI	On any cancer registration or NHI	On any cancer registration, NHI or hospital admission	On any cancer registration, NHI, hospital admission or death registration
Māori ethnic group	6,353 (6.3%)	6,859 (6.7%)	6,871 (6.8%)	7,083 (7.0%)	7,410 (7.3%)
Non-Māori	86,979 (85.5%)	90,770 (89.3%)	90,840 (89.3%)	90,992 (89.5%)	91,088 (89.6%)
Other not further defined (54)	237 (0.2%)	1,753 (1.7%)	1,720 (1.7%)	1,715 (1.7%)	1,432 (1.4%)
Not stated (99)	8,125 (8.0%)	2,306 (2.3%)	2,263 (2.2%)	1,904 (1.9%)	1,764 (1.7%)
Total	101,694 (100%)	101,694 (100%)	101,694 (100%)	101,694 (100%)	101,694 (100%)

The ‘ever Māori’ method increased the number of malignant cancers registered between 1996 and 2001 classified as Māori from 6,353 (6.3% of the total) to 7,410 (7.3% of the total) – an increase of 16.6% (Table A3). The inclusion of ethnicity from the NHI in addition to the cancer registrations added 8% to the Māori registrations. Other cancer registrations added another 0.2%. Hospital admissions added a further 3.1%, and death registrations an additional 4.6%. The number of registrations with missing ethnicity data decreased by 78%, and non-Māori registrations increased by 5%.

Table A3: Māori malignant cancer registrations 1996–2001, with and without a death registration

Ethnicity source	No death registration (Group A)		Death registered between 1996 and 2001 (Group B)	
	Cancer registration	‘Ever Māori’	Cancer registration	‘Ever Māori’
Number of Māori registrations	3,031	3,515	3,322	3,895
% increase using ‘ever Māori’	16.0%		17.2%	

To estimate the total undercount of Māori cancer registrations, and any residual undercount after applying the ‘ever Māori’ classification, we compared the results for people who also had a death registered between 1996 and 2001 with those who didn’t. The ‘ever Māori’ method increased the number of Māori registrations by 16.0% among those without a death registration (Group A) and by 17.2% among those with a death registration (Group B) (Table A3). This difference indicates there may be a small residual undercount of Māori among those without a death registration. An increase of 17.2% in Group A would result in 3,554 Māori registrations without a death registration, and increase the total number of ‘ever Māori’ cancer registrations by another 0.5% to 7,449.

CONCLUSION

We estimate that the use of ethnicity data from cancer registrations undercounts Māori by around 17% for 1996–2001. The ‘ever Māori’ method of classification increased the number of Māori cancer registrations by 16.6% and reduced the undercount to less than 1%. This result is reassuring because it means that differential misclassification bias in analyses that combine registration and mortality data (e.g. survival analysis or hazard ratios) is likely to be small.

APPENDIX THREE: HAZARD RATIOS BY METHOD OF ETHNICITY CLASSIFICATION

The following two tables present Māori:non-Māori hazard ratios (i.e. relative risk of death from the cancer after diagnosis) using three different methods of ethnicity classification.

- The ‘ever Māori’ method (first column) counted as Māori anyone identified as Māori in any ethnicity field on any hospital admission, National Health Index record, cancer registration or death between 1996 and 2001. All others were classified as non-Māori.
- The ‘ever Māori up to registration’ method (second column) counted as Māori anyone identified as Māori in any ethnicity field of their cancer registration or on any hospital admission prior to the date of cancer registration. All others were classified as non-Māori.
- The third column counted as Māori only those identified as Māori on their cancer registration. All others were classified as non-Māori.

On average, the ‘ever Māori’ method produced the lowest estimates of cancer survival disparities between Māori and non-Māori. Those calculated using the ‘ever Māori up to registration’ method were on average 4% higher than the ‘ever Māori’ classification. The cancer registration ethnicity classification resulted in hazard ratios that were 5% higher on average than the ‘ever Māori’ method.

Table A4: Māori:non-Māori hazard ratios for cancer-specific mortality among females, by method of ethnicity classification, 1996–2001 (adjusted for age at diagnosis)

Cancer site	'Ever Māori' hazard ratio	'Ever Māori' up to registration hazard ratio	Māori on registration hazard ratio
Lip, oral cavity and pharynx	1.14	1.22	1.05
Oesophagus	1.34	1.34	1.34
Stomach	1.41	1.42	1.42
Colorectal	1.49	1.59	1.65
Colon	1.27	1.40	1.47
Rectum, rectosigmoid junction and anus	2.12	2.14	2.17
Liver and intrahepatic bile ducts	1.21	1.35	1.49
Gallbladder and other biliary tract	1.38	1.38	1.38
Pancreas	1.13	1.13	1.07
Larynx	3.02	3.02	3.02
Trachea, bronchus and lung	1.38	1.37	1.37
Bone and articular cartilage	0.82	1.07	0.81
Melanoma of skin	1.65	2.01	2.62
Mesothelial and soft tissue	1.76	1.80	1.78
Breast	1.58	1.63	1.70
Cervix uteri	2.52	2.65	2.82
Uterus	1.65	1.71	1.78
Ovary	0.98	0.98	1.00
Kidney	1.57	1.51	1.41
Bladder	3.59	3.56	3.77
Brain	0.83	0.81	0.97
Thyroid gland	1.46	1.68	1.63
Unknown primary site, ill-defined, secondary	1.31	1.33	1.33
Hodgkin's disease	1.45	1.45	1.75
Non-Hodgkin's lymphoma	1.59	1.63	1.68
Multiple myeloma	1.01	1.06	0.94
Leukaemias	1.38	1.44	1.54
Lymphoid leukaemia	0.92	1.00	1.14
Myeloid leukaemia	1.16	1.16	1.18

Table A5: Māori:non-Māori hazard ratios for cancer-specific mortality among males, by method of ethnicity classification, 1996–2001

Cancer site	'Ever Māori' hazard ratio	'Ever Māori' up to registration hazard ratio	Māori on registration hazard ratio
Lip, oral cavity and pharynx	2.09	2.23	2.13
Oesophagus	1.83	1.82	1.96
Stomach	1.63	1.67	1.70
Colorectal	1.55	1.63	1.65
Colon	1.49	1.53	1.54
Rectal	1.74	1.89	1.93
Liver and intrahepatic bile ducts	1.33	1.35	1.33
Gallbladder and other biliary tract	1.19	1.19	1.19
Pancreas	1.10	1.15	1.19
Larynx	1.07	1.25	0.99
Trachea, bronchus and lung	1.29	1.29	1.30
Bone and articular cartilage	1.71	2.02	2.45
Melanoma of skin	0.44	0.52	0.58
Mesothelial and soft tissue	1.30	1.30	1.37
Prostate	2.16	2.29	2.39
Testis	2.64	3.13	3.46
Kidney	1.35	1.38	1.51
Bladder	1.62	1.58	1.56
Brain	1.35	1.36	1.31
Thyroid	0.94	0.96	1.27
Unknown primary site, ill-defined, secondary	1.58	1.66	1.71
Hodgkin's disease	6.57	5.26	5.44
Non-Hodgkin's lymphoma	1.11	1.19	1.25
Multiple myeloma	1.70	1.72	1.88
Leukaemias	1.12	1.17	1.17
Lymphoid leukaemia	1.61	1.75	1.62
Myeloid leukaemia	0.75	0.73	0.82

APPENDIX FOUR: STANDARD POPULATIONS

Differences in the age structure of the Māori population (relatively young) and the non-Māori population (relatively old) make it necessary to adjust for age when comparing health outcomes. Direct standardisation applies age-specific rates to a standard population structure. The results are affected by the age distribution of events (e.g. deaths) in each population and the relative differences across age groups (the age-specific rate ratios). If these vary between the populations being compared, the selection of a standard population can affect the magnitude of rates and ratios, relative ranking of causes, and trends in rates and ratios.

This section describes the age structure of the four populations used in this report and examines the impact of the three standard populations (Segi's world, WHO world and Māori population) on age-standardised cancer registration and mortality rates and ratios.

The Māori population has the youngest age distribution and the non-Māori population has the oldest. Segi's world population has a higher proportion of young people than the WHO world population and is somewhat closer to the age distribution of the Māori population.

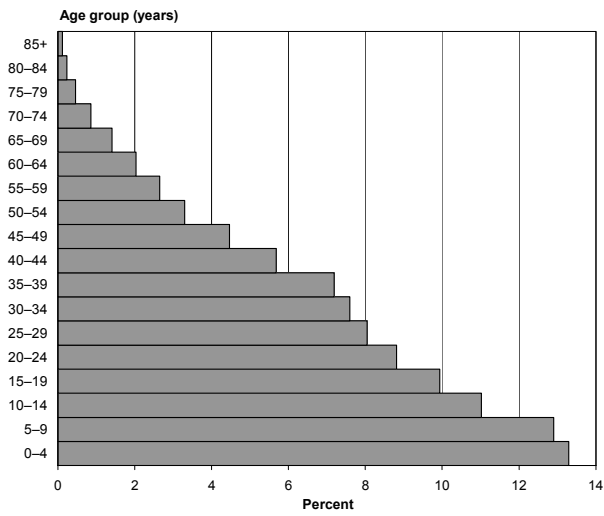
Table A6: Percentage of Māori, non-Māori, Segi's world and WHO world populations in each age group

Age group	Māori population 1996–2000	Non-Māori population 1996–2000	Segi's	WHO
0–4	13.29	6.64	12.00	8.86
5–9	12.90	7.12	10.00	8.69
10–14	11.02	6.75	9.00	8.60
15–19	9.94	6.67	9.00	8.47
20–24	8.81	6.69	8.00	8.22
25–29	8.05	7.26	8.00	7.93
30–34	7.60	7.84	6.00	7.61
35–39	7.19	8.24	6.00	7.15
40–44	5.68	7.58	6.00	6.59
45–49	4.47	7.02	6.00	6.04
50–54	3.30	6.11	5.00	5.37
55–59	2.65	4.96	4.00	4.55
60–64	2.03	4.06	4.00	3.72
65–69	1.41	3.86	3.00	2.96
70–74	0.86	3.47	2.00	2.21
75–79	0.46	2.68	1.00	1.52
80–84	0.23	1.74	0.50	0.91
85 +	0.12	1.31	0.50	0.63
Total	100.00	100.00	100.00	100.00

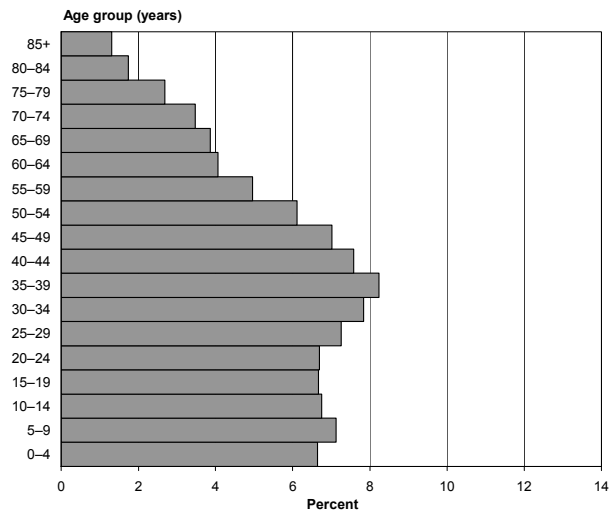
* Note: the WHO standard has proportions delineated for five-year age groups up to the age of 100+, which have been grouped together for the purpose of this comparison.

Figure A1: Age-distribution of Māori and non-Māori populations 1996–2000, Segi's world population and WHO world population

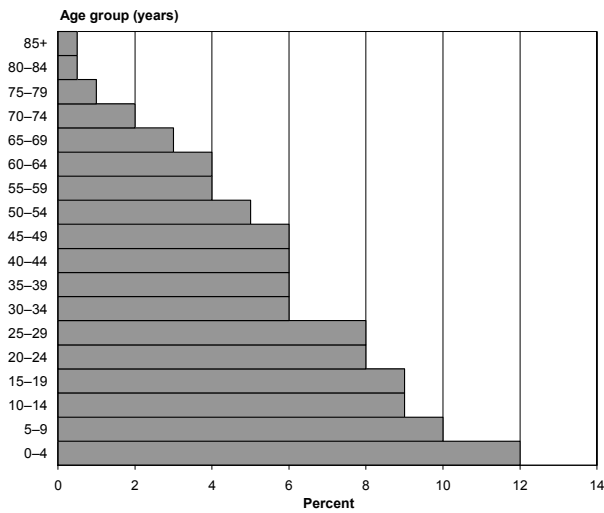
(a) Māori population 1996–2000



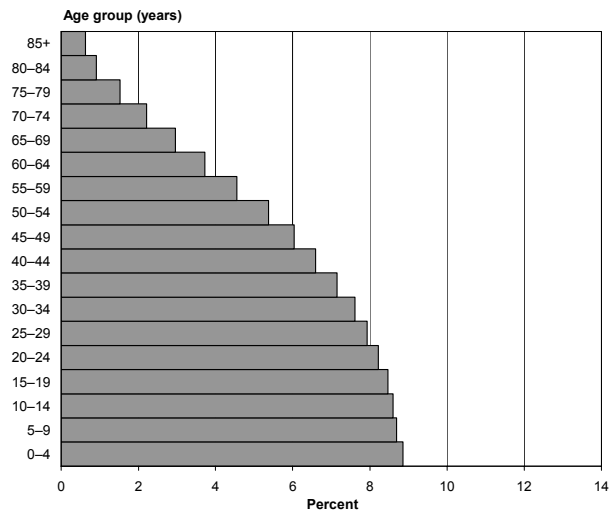
(b) Non-Māori population 1996–2000



(c) Segi's world population (~1950)



(d) WHO world population (2000–2025)



IMPACT OF CHOICE OF STANDARD ON RATES AND RATIOS

Across all sites, the magnitude of the age-standardised incidence and mortality rates generally increase as the age distribution of the standard population increases, from the younger Māori population standard to the older WHO standard (see Tables A7 and A8).

The rate ratios remain fairly similar, with most sites showing a slight decrease in the rate ratios when the older standard populations are used. However, absolute risk differences vary considerably according to the standard used – as expected given the higher rates obtained using the WHO standard.

Table A7: Cancer registrations 1996–2001, numbers, rates per 100,000 standardised to Māori, Segi's and WHO standard populations, and rate ratios

	Māori				Non-Māori				Māori:non-Māori rate ratios		
	Number	Rate standardised to:			Number	Rate standardised to:			Māori	Segi	WHO
		Māori	Segi	WHO		Māori	Segi	WHO			
All sites	7,410	220.9	378.4	425.0	94,284	187.8	319.2	359.1	1.18	1.19	1.18
Trachea, bronchus and lung	1,437	42.8	81.7	90.6	7,975	12.9	25.6	29.3	3.31	3.20	3.09
Female breast*	1,147	65.1	98.1	106.5	11,762	53.9	82.6	90.0	1.21	1.19	1.18
Prostate*	632	41.2	89.1	106.3	15,324	49.3	103.4	119.2	0.84	0.86	0.89
Colorectal:	514	15.5	29.0	33.4	14,410	24.1	45.9	52.0	0.64	0.63	0.64
<i>Colon</i>	297	8.9	16.5	18.9	9,607	15.4	29.7	34.0	0.58	0.56	0.56
<i>Rectum and anus</i>	217	6.6	12.5	14.5	4,803	8.7	16.2	18.0	0.76	0.77	0.80
Stomach	329	9.8	17.3	19.9	2,019	3.2	6.2	7.2	3.08	2.81	2.76
Leukaemias	276	8.4	13.0	14.7	3,133	7.7	11.3	12.3	1.09	1.16	1.19
Cervix uteri*	250	14.2	17.5	19.1	985	6.3	7.5	8.3	2.27	2.33	2.30
Non-Hodgkin's lymphoma	232	6.9	11.1	12.6	3,256	6.8	11.0	12.4	1.02	1.00	1.02
Liver/intrahepatic bile ducts	183	5.6	9.4	10.1	698	1.4	2.4	2.7	3.86	3.90	3.78
Pancreas	176	5.2	9.8	11.4	1,735	2.7	5.2	6.0	1.96	1.88	1.90
Uterus*	175	9.9	16.6	17.9	1,570	6.1	10.6	11.5	1.61	1.57	1.56
Testis*	174	10.9	10.3	11.3	618	5.9	5.8	6.3	1.84	1.79	1.80
Ovary*	163	9.3	13.0	14.2	1,571	7.3	10.8	11.9	1.28	1.20	1.19
Kidney	138	4.1	6.5	7.0	1,835	3.9	6.5	7.2	1.05	1.00	0.98
Multiple myeloma	129	3.9	7.5	8.9	1,364	2.1	4.1	4.8	1.89	1.83	1.85
Thyroid gland	126	3.7	4.7	5.2	787	2.6	3.2	3.5	1.39	1.47	1.51
Lip, oral cavity and pharynx	120	3.6	5.7	6.1	1,575	3.4	5.5	6.1	1.06	1.03	1.00
Brain	119	3.5	4.7	4.8	1,402	4.5	5.8	6.1	0.79	0.80	0.79
Melanoma of skin	100	2.9	4.7	5.4	9,372	23.9	34.4	38.1	0.12	0.14	0.14
Mesothelial and soft tissue	97	2.9	3.9	4.3	1,066	2.5	3.9	4.3	1.15	1.02	0.99
Oesophagus	91	2.8	5.5	6.4	1,126	1.7	3.4	4.0	1.64	1.64	1.62
Bladder	85	2.6	5.0	5.9	3,284	5.2	10.2	12.0	0.51	0.49	0.49

* Sex-specific rates.

Table A8: Cancer deaths 1996–2001, numbers, rates per 100,000 standardised to Māori, Segi's and WHO standard populations, and rate ratios

	Māori				Non-Māori				Māori:non-Māori rate ratios		
	Number	Rate standardised to:			Number	Rate standardised to:			Māori	Segi	WHO
		Māori	Segi	WHO		Māori	Segi	WHO			
All sites	4,285	127.9	238.2	272.7	41,184	66.3	126.6	147.5	1.93	1.88	1.85
Trachea, bronchus and lung	1,370	40.7	79.3	88.7	7,107	11.0	22.3	25.8	3.70	3.56	3.44
Female breast*	383	21.6	33.6	37.5	3,435	12.8	21.2	23.7	1.68	1.59	1.58
Colorectal:	292	8.8	17.4	20.3	6,502	9.8	19.6	22.6	0.90	0.89	0.90
<i>Colon</i>	158	4.8	9.3	10.9	4,310	6.3	12.8	14.8	0.76	0.73	0.74
<i>Rectum and anus</i>	134	4.1	8.1	9.4	2,192	3.5	6.8	7.8	1.17	1.19	1.20
Stomach	277	8.3	15.1	17.7	1,537	2.3	4.5	5.3	3.69	3.35	3.32
Prostate*	178	12.1	28.8	36.8	3,111	7.5	18.2	23.4	1.61	1.58	1.58
Pancreas	168	5.0	9.7	11.6	1,651	2.4	4.8	5.7	2.06	2.01	2.05
Liver/intrahepatic bile ducts	153	4.7	8.0	8.7	588	1.1	1.9	2.2	4.33	4.20	3.98
Leukaemias	137	4.1	6.7	7.6	1,392	2.8	4.5	5.2	1.46	1.50	1.47
Cervix uteri*	116	6.6	9.7	10.7	317	1.4	2.1	2.3	4.85	4.73	4.68
Non-Hodgkin's lymphoma	111	3.3	5.9	6.9	1,656	2.8	5.1	5.9	1.18	1.16	1.17
Brain	95	2.8	3.8	4.1	1,174	3.1	4.4	4.8	0.93	0.86	0.86
Oesophagus	86	2.6	5.1	5.8	1,039	1.5	3.0	3.6	1.78	1.71	1.63
Multiple myeloma	74	2.2	4.7	5.6	834	1.1	2.3	2.8	2.03	1.99	1.98
Kidney	73	2.2	3.6	3.9	801	1.3	2.5	2.9	1.64	1.41	1.35
Ovary*	69	3.9	6.6	7.4	964	3.3	5.9	6.6	1.17	1.13	1.13
Lip, oral cavity and pharynx	62	1.9	3.4	3.9	595	1.0	1.9	2.2	1.81	1.76	1.79
Mesothelial and soft tissue	57	1.7	2.5	2.7	592	1.2	2.0	2.3	1.41	1.21	1.15
Uterus*	49	2.7	5.6	6.2	410	1.2	2.2	2.6	2.28	2.48	2.40
Bladder	36	1.1	2.4	3.1	980	1.2	2.6	3.3	0.91	0.91	0.93
Melanoma of skin	15	0.4	0.8	1.0	1,352	2.8	4.6	5.2	0.15	0.17	0.20
Testis*	14	0.9	0.8	0.9	27	0.2	0.2	0.3	4.25	3.61	3.47

* Sex-specific rates.

APPENDIX FIVE: CANCER INCIDENCE AND MORTALITY RATES AND RATE RATIOS AGE STANDARDISED TO SEGI'S WORLD POPULATION

INCIDENCE

Table A9: Cancer registrations: age-sex-standardised rates per 100,000 and rate ratios, 1996–2001

Table A10: Female cancer registrations: age-standardised rates per 100,000 and rate ratios, 1996–2001

Table A11: Male cancer registrations: age-standardised rates per 100,000 and rate ratios, 1996–2001

MORTALITY

Table A12: Cancer deaths: age-sex-standardised rates per 100,000 and rate ratios, 1996–2001

Table A13: Female cancer deaths: age-standardised rates per 100,000 and rate ratios, 1996–2001

Table A14: Male cancer deaths: age-standardised rates per 100,000 and rate ratios, 1996–2001

Table A9: Cancer registrations: age-sex-standardised rates per 100,000 and rate ratios, 1996–2001 (Segi standard)

Site	Māori rate	Non-Māori rate	Rate ratio (95% CI)
All sites	378.4	319.2	1.19 (1.16–1.22)
Lip, oral cavity and pharynx	5.7	5.5	1.03 (0.85–1.25)
Digestive organs			
Oesophagus	5.5	3.4	1.64 (1.31–2.05)
Stomach	17.3	6.2	2.81 (2.48–3.19)
Colorectal	29.0	45.9	0.63 (0.58–0.69)
Colon	16.5	29.7	0.56 (0.49–0.63)
Rectum, rectosigmoid junction and anus	12.5	16.2	0.77 (0.67–0.89)
Liver and intrahepatic bile ducts	9.4	2.4	3.90 (3.28–4.63)
Gallbladder and other biliary tract	2.6	1.2	2.21 (1.57–3.12)
Pancreas	9.8	5.2	1.88 (1.60–2.21)
Other digestive organs	3.5	1.8	1.95 (1.49–2.55)
Respiratory and intrathoracic organs			
Larynx	2.3	1.6	1.47 (1.06–2.04)
Trachea, bronchus and lung	81.7	25.6	3.20 (3.01–3.39)
Other respiratory and intrathoracic organs	1.7	0.9	1.87 (1.31–2.69)
Bone and articular cartilage	0.9	1.0	0.98 (0.65–1.48)
Skin			
Melanoma of skin	4.7	34.4	0.14 (0.11–0.17)
Other malignant neoplasms of skin	0.9	1.1	0.80 (0.46–1.40)
Mesothelial and soft tissue	3.9	3.9	1.02 (0.81–1.27)
Breast: female*	98.1	82.6	1.19 (1.12–1.27)
Female genital organs			
Cervix uteri*	17.5	7.5	2.33 (2.02–2.70)
Uterus*	16.6	10.6	1.57 (1.34–1.85)
Ovary*	13.0	10.8	1.20 (1.01–1.42)
Other female genital organs*	2.8	2.4	1.17 (0.81–1.68)
Male genital organs			
Prostate*	89.1	103.4	0.86 (0.79–0.94)
Testis*	10.3	5.8	1.79 (1.50–2.14)
Other male genital organs*	0.3	0.6	0.49 (0.14–1.69)
Urinary tract			
Kidney, except renal pelvis	6.5	6.5	1.00 (0.83–1.20)
Bladder	5.0	10.2	0.49 (0.39–0.62)
Other urinary tract	0.3	0.7	0.42 (0.18–0.97)
Eye and other parts of central nervous system			
Brain	4.7	5.8	0.80 (0.65–0.99)
Other eye and central nervous system	0.9	1.6	0.60 (0.39–0.92)
Thyroid and other endocrine glands			
Thyroid gland	4.7	3.2	1.47 (1.20–1.80)
Other endocrine glands	0.8	0.5	1.43 (0.85–2.40)
Ill-defined, secondary and unspecified sites	19.6	10.3	1.90 (1.68–2.13)
Lymphoma			
Hodgkin's disease	1.2	1.8	0.62 (0.43–0.90)
Non-Hodgkin's lymphoma	11.1	11.0	1.00 (0.87–1.16)
Multiple myeloma, immunoproliferative and plasma cell	7.5	4.1	1.83 (1.51–2.22)
Leukaemias	13.0	11.3	1.16 (1.00–1.33)
Lymphoid leukaemia	6.8	6.8	1.00 (0.83–1.21)
Myeloid leukaemia	5.0	4.1	1.23 (0.99–1.53)
Other leukaemias	1.2	0.4	2.95 (1.63–5.32)
Other and unspecified lymphoid, haematopoietic and related tissue	0.2	0.0	3.86 (1.10–13.52)

* Sex-specific rates.

Table A10: Female cancer registrations: age-standardised rates per 100,000 and rate ratios, 1996–2001 (Segi standard)

Site	Māori rate	Non-Māori rate	Rate ratio (95% CI)
All sites	358.0	281.5	1.27 (1.23–1.32)
Lip, oral cavity and pharynx	3.7	3.3	1.09 (0.78–1.53)
Digestive organs			
Oesophagus	2.7	1.8	1.49 (0.97–2.30)
Stomach	14.6	3.9	3.78 (3.13–4.57)
Colorectal	21.7	40.9	0.53 (0.46–0.61)
<i>Colon</i>	13.1	28.8	0.45 (0.38–0.54)
<i>Rectum, rectosigmoid junction and anus</i>	8.6	12.1	0.71 (0.57–0.89)
Liver and intrahepatic bile ducts	3.3	1.6	2.08 (1.43–3.02)
Gallbladder and other biliary tract	2.1	1.2	1.81 (1.15–2.86)
Pancreas	9.2	4.5	2.05 (1.63–2.58)
Other digestive organs	2.5	1.5	1.61 (1.05–2.46)
Respiratory and intrathoracic organs			
Larynx	0.8	0.4	1.91 (0.88–4.14)
Trachea, bronchus and lung	73.7	17.7	4.16 (3.82–4.52)
Other respiratory and intrathoracic organs	1.6	0.7	2.34 (1.40–3.93)
Bone and articular cartilage	0.6	0.8	0.75 (0.38–1.48)
Skin			
Melanoma of skin	5.6	33.0	0.17 (0.13–0.22)
Other malignant neoplasms of skin	1.0	0.8	1.18 (0.63–2.20)
Mesothelial and soft tissue	3.3	2.7	1.21 (0.88–1.68)
Breast: female	98.1	82.6	1.19 (1.12–1.27)
Female genital organs			
Cervix uteri	17.5	7.5	2.33 (2.02–2.70)
Uterus	16.6	10.6	1.57 (1.34–1.85)
Ovary	13.0	10.8	1.20 (1.01–1.42)
Other female genital organs	2.8	2.4	1.17 (0.81–1.68)
Urinary tract			
Kidney, except renal pelvis	4.4	4.6	0.95 (0.70–1.29)
Bladder	2.6	4.5	0.59 (0.39–0.88)
Other urinary tract	0.3	0.5	0.59 (0.19–1.90)
Eye and other parts of central nervous system			
Brain	4.2	4.3	0.97 (0.73–1.30)
Other eye and central nervous system	1.0	1.5	0.66 (0.37–1.17)
Thyroid and other endocrine glands			
Thyroid gland	6.8	4.7	1.44 (1.14–1.81)
Other endocrine glands	0.4	0.5	0.93 (0.41–2.13)
Ill-defined, secondary and unspecified sites	18.3	9.2	1.99 (1.70–2.34)
Lymphoma			
Hodgkin's disease	1.1	1.7	0.64 (0.36–1.11)
Non-Hodgkin's lymphoma	10.0	9.5	1.05 (0.86–1.29)
Multiple myeloma, immunoproliferative and plasma cell	5.1	3.1	1.66 (1.22–2.25)
Leukaemias	9.2	8.5	1.08 (0.87–1.33)
<i>Lymphoid leukaemia</i>	4.0	4.7	0.85 (0.62–1.17)
<i>Myeloid leukaemia</i>	4.4	3.4	1.27 (0.95–1.71)
<i>Other leukaemias</i>	0.8	0.3	2.30 (0.95–5.57)
Other and unspecified lymphoid, haematopoietic and related tissue	0.1	0.0	3.46 (0.68–17.46)

Table A11: Male cancer registrations: age-standardised rates per 100,000 and rate ratios, 1996–2001 (Segi standard)

Site	Māori rate	Non-Māori rate	Rate ratio (95% CI)
All sites	398.8	356.9	1.12 (1.08–1.16)
Lip, oral cavity and pharynx	7.7	7.6	1.00 (0.79–1.28)
Digestive organs			
Oesophagus	8.3	4.9	1.69 (1.30–2.20)
Stomach	20.1	8.5	2.37 (2.00–2.81)
Colorectal	36.3	50.9	0.71 (0.63–0.81)
<i>Colon</i>	20.0	30.7	0.65 (0.55–0.77)
<i>Rectum, rectosigmoid junction and anus</i>	16.4	20.2	0.81 (0.67–0.98)
Liver and intrahepatic bile ducts	15.4	3.2	4.79 (3.94–5.83)
Gallbladder and other biliary tract	3.1	1.2	2.61 (1.61–4.25)
Pancreas	10.4	5.9	1.75 (1.40–2.19)
Other digestive organs	4.4	2.0	2.21 (1.56–3.12)
Respiratory and intrathoracic organs			
Larynx	3.8	2.7	1.40 (0.98–2.01)
Trachea, bronchus and lung	89.7	33.4	2.69 (2.48–2.91)
Other respiratory and intrathoracic organs	1.7	1.1	1.57 (0.94–2.61)
Bone and articular cartilage	1.3	1.1	1.16 (0.69–1.94)
Skin			
Melanoma of skin	3.9	35.8	0.11 (0.08–0.16)
Other malignant neoplasms of skin	0.8	1.4	0.58 (0.22–1.55)
Mesothelial and soft tissue	4.6	5.0	0.91 (0.67–1.23)
Breast: male	0.3	0.5	0.64 (0.22–1.87)
Male genital organs			
Prostate	89.1	103.4	0.86 (0.79–0.94)
Testis	10.3	5.8	1.79 (1.50–2.14)
Other male genital organs	0.3	0.6	0.49 (0.14–1.69)
Urinary tract			
Kidney, except renal pelvis	8.6	8.4	1.03 (0.82–1.29)
Bladder	7.3	15.9	0.46 (0.35–0.62)
Other urinary tract	0.3	1.0	0.34 (0.10–1.10)
Eye and other parts of central nervous system			
Brain	5.1	7.2	0.70 (0.52–0.95)
Other eye and central nervous system	0.9	1.7	0.55 (0.29–1.04)
Thyroid and other endocrine glands			
Thyroid gland	2.7	1.7	1.56 (1.03–2.37)
Other endocrine glands	1.1	0.6	1.84 (0.95–3.55)
Ill-defined, secondary and unspecified sites	20.8	11.5	1.82 (1.53–2.16)
Lymphoma			
Hodgkin's disease	1.2	2.0	0.61 (0.38–1.00)
Non-Hodgkin's lymphoma	12.2	12.6	0.97 (0.79–1.18)
Multiple myeloma, immunoproliferative and plasma cell	9.9	5.1	1.94 (1.52–2.48)
Leukaemias	16.9	14.1	1.20 (1.00–1.44)
<i>Lymphoid leukaemia</i>	9.6	8.9	1.08 (0.86–1.37)
<i>Myeloid leukaemia</i>	5.7	4.7	1.21 (0.89–1.65)
<i>Other leukaemias</i>	1.6	0.5	3.43 (1.59–7.37)
Other and unspecified lymphoid, haematopoietic and related tissue	0.2	0.0	4.25 (0.66–27.57)

Table A12: Cancer deaths: age-sex-standardised rates per 100,000 and rate ratios, 1996–2001 (Segi standard)

Site	Māori rate	Non-Māori rate	Rate ratio (95% CI)
All sites	237.5	126.0	1.89 (1.82–1.95)
Lip, oral cavity and pharynx	3.4	1.9	1.76 (1.34–2.31)
Digestive organs			
Oesophagus	5.1	3.0	1.71 (1.36–2.16)
Stomach	15.1	4.5	3.35 (2.92–3.85)
Colorectal	17.4	19.6	0.89 (0.78–1.01)
<i>Colon</i>	9.3	12.8	0.73 (0.61–0.86)
<i>Rectum, rectosigmoid junction and anus</i>	8.1	6.8	1.19 (0.99–1.43)
Liver and intrahepatic bile ducts	8.0	1.9	4.20 (3.49–5.07)
Gallbladder and other biliary tract	2.2	0.8	2.62 (1.78–3.85)
Pancreas	9.7	4.8	2.01 (1.70–2.37)
Other digestive organs	3.8	1.9	2.02 (1.54–2.65)
Respiratory and intrathoracic organs			
Larynx	0.8	0.5	1.57 (0.89–2.77)
Trachea, bronchus and lung	79.3	22.3	3.56 (3.35–3.78)
Other respiratory and intrathoracic organs	0.9	0.5	1.89 (1.06–3.38)
Bone and articular cartilage	0.5	0.5	1.10 (0.62–1.93)
Skin			
Melanoma of skin	0.8	4.6	0.17 (0.10–0.28)
Other malignant neoplasms of skin	0.6	1.1	0.55 (0.26–1.17)
Mesothelial and soft tissue	2.5	2.0	1.21 (0.90–1.62)
Breast: female*	33.6	21.2	1.59 (1.42–1.77)
Female genital organs			
Cervix uteri*	9.7	2.1	4.73 (3.78–5.92)
Uterus*	5.6	2.2	2.48 (1.82–3.38)
Ovary*	6.6	5.9	1.13 (0.87–1.46)
Other female genital organs*	1.0	0.6	1.51 (0.78–2.92)
Male genital organs	29.6	18.5	1.60 (1.36–1.87)
Prostate*	28.8	18.2	1.58 (1.35–1.86)
Testis*	0.8	0.2	3.61 (1.88–6.95)
Other male genital organs*		0.1	
Urinary tract	29.6	18.5	1.60 (1.36–1.87)
Kidney, except renal pelvis	3.6	2.5	1.41 (1.10–1.82)
Bladder	2.4	2.6	0.91 (0.63–1.31)
Other urinary tract	0.1	0.2	0.70 (0.21–2.30)
Eye and other parts of central nervous system			
Brain	3.8	4.4	0.86 (0.69–1.08)
Other eye and central nervous system	0.2	0.3	0.55 (0.19–1.63)
Thyroid and other endocrine glands			
Thyroid gland	0.6	0.3	2.30 (1.23–4.30)
Other endocrine glands	0.3	0.3	1.26 (0.57–2.74)
Ill-defined, secondary and unspecified sites	15.4	7.8	1.97 (1.72–2.26)
Lymphoma			
Hodgkin's disease	0.5	0.3	1.75 (0.88–3.46)
Non-Hodgkin's lymphoma	5.9	5.1	1.16 (0.94–1.42)
Multiple myeloma, immunoproliferative and plasma cell	4.7	2.3	1.99 (1.55–2.56)
Leukaemias	6.7	4.5	1.50 (1.23–1.82)
<i>Lymphoid leukaemia</i>	2.6	1.6	1.61 (1.18–2.20)
<i>Myeloid leukaemia</i>	3.4	2.6	1.32 (1.01–1.73)
<i>Other leukaemias</i>	0.7	0.3	2.51 (1.33–4.75)
Other and unspecified lymphoid, haematopoietic and related tissue	0.0	0.0	1.52 (0.16–14.60)

* Sex-specific rates.

Table A13: Female cancer deaths: age-standardised rates per 100,000 and rate ratios, 1996–2001 (Segi standard)

Site	Māori rate	Non-Māori rate	Rate ratio (95% CI)
All sites	214.0	106.3	2.01 (1.92–2.11)
Lip, oral cavity and pharynx	1.3	1.0	1.32 (0.71–2.46)
Digestive organs			
Oesophagus	2.6	1.5	1.70 (1.09–2.64)
Stomach	10.9	2.8	3.85 (3.10–4.78)
Colorectal	13.2	16.5	0.80 (0.66–0.95)
<i>Colon</i>	7.3	11.7	0.62 (0.49–0.79)
<i>Rectum, rectosigmoid junction and anus</i>	5.9	4.8	1.21 (0.92–1.60)
Liver and intrahepatic bile ducts	2.7	1.2	2.36 (1.57–3.53)
Gallbladder and other biliary tract	1.6	0.9	1.89 (1.12–3.19)
Pancreas	9.3	4.3	2.18 (1.73–2.75)
Other digestive organs	3.1	1.6	1.94 (1.31–2.87)
Respiratory and intrathoracic organs			
Larynx	0.4	0.1	3.99 (1.29–12.36)
Trachea, bronchus and lung	71.8	14.7	4.88 (4.47–5.32)
Other respiratory and intrathoracic organs	0.7	0.3	2.26 (1.03–4.96)
Bone and articular cartilage	0.2	0.4	0.58 (0.20–1.64)
Skin			
Melanoma of skin	1.0	3.2	0.31 (0.16–0.59)
Other malignant neoplasms of skin	0.4	0.5	0.72 (0.26–2.04)
Mesothelial and soft tissue	2.0	1.2	1.63 (1.06–2.53)
Breast: female	33.6	21.2	1.59 (1.42–1.77)
Female genital organs			
Cervix uteri	9.7	2.1	4.73 (3.78–5.92)
Uterus	5.6	2.2	2.48 (1.82–3.38)
Ovary	6.6	5.9	1.13 (0.87–1.46)
Other female genital organs	1.0	0.6	1.51 (0.78–2.92)
Urinary tract			
Kidney, except renal pelvis	2.3	1.7	1.32 (0.85–2.05)
Bladder	2.0	1.3	1.49 (0.91–2.43)
Other urinary tract	0.3	0.1	2.92 (0.82–10.38)
Eye and other parts of central nervous system			
Brain	3.2	3.4	0.94 (0.67–1.33)
Other eye and central nervous system	0.1	0.2	0.64 (0.15–2.79)
Thyroid and other endocrine glands			
Thyroid gland	1.0	0.3	3.23 (1.55–6.74)
Other endocrine glands	0.1	0.2	0.38 (0.05–2.89)
Ill-defined, secondary and unspecified sites	13.1	7.2	1.82 (1.51–2.20)
Lymphoma			
Hodgkin's disease	0.1	0.2	0.57 (0.08–4.23)
Non-Hodgkin's lymphoma	5.4	4.1	1.32 (0.98–1.76)
Multiple myeloma, immunoproliferative and plasma cell	3.0	1.9	1.60 (1.06–2.43)
Leukaemias	5.6	3.3	1.69 (1.26–2.26)
<i>Lymphoid leukaemia</i>	1.6	1.1	1.48 (0.86–2.52)
<i>Myeloid leukaemia</i>	3.3	2.0	1.62 (1.12–2.34)
<i>Other leukaemias</i>	0.7	0.2	3.63 (1.44–9.18)
Other and unspecified lymphoid, haematopoietic and related tissue			

Table A14: Male cancer deaths: age-standardised rates per 100,000 and rate ratios, 1996–2001 (Segi standard)

Site	Māori rate	Non-Māori rate	Rate ratio (95% CI)
All sites	261.1	145.6	1.79 (1.71–1.88)
Lip, oral cavity and pharynx	5.6	2.9	1.91 (1.41–2.59)
Digestive organs			
Oesophagus	7.7	4.5	1.72 (1.31–2.25)
Stomach	19.2	6.2	3.12 (2.61–3.73)
Colorectal	21.6	22.6	0.96 (0.81–1.13)
<i>Colon</i>	11.3	13.8	0.82 (0.65–1.03)
<i>Rectum, rectosigmoid junction and anus</i>	10.4	8.8	1.18 (0.92–1.50)
Liver and intrahepatic bile ducts	13.3	2.7	5.01 (4.05–6.20)
Gallbladder and other biliary tract	2.8	0.8	3.40 (1.99–5.80)
Pancreas	10.1	5.4	1.87 (1.49–2.36)
Other digestive organs	4.4	2.1	2.08 (1.43–3.01)
Respiratory and intrathoracic organs			
Larynx	1.2	0.9	1.30 (0.67–2.52)
Trachea, bronchus and lung	86.7	29.8	2.91 (2.68–3.16)
Other respiratory and intrathoracic organs	1.1	0.7	1.71 (0.76–3.85)
Bone and articular cartilage	0.8	0.6	1.42 (0.73–2.77)
Skin			
Melanoma of skin	0.5	5.9	0.09 (0.04–0.22)
Other malignant neoplasms of skin	0.8	1.7	0.49 (0.18–1.34)
Mesothelial and soft tissue	3.0	2.9	1.04 (0.70–1.53)
Breast: male	0.2	0.1	1.93 (0.55–6.77)
Male genital organs			
Prostate	28.8	18.2	1.58 (1.35–1.86)
Testis	0.8	0.2	3.61 (1.88–6.95)
Other male genital organs		0.1	
Urinary tract			
Kidney, except renal pelvis	4.9	3.3	1.46 (1.08–1.99)
Bladder	2.8	3.9	0.71 (0.42–1.19)
Other urinary tract		0.3	
Eye and other parts of central nervous system	4.7	5.9	0.79 (0.59–1.06)
Brain	4.4	5.5	0.81 (0.60–1.10)
Other eye and central nervous system	0.2	0.4	0.50 (0.11–2.30)
Thyroid and other endocrine glands	0.9	0.6	1.54 (0.76–3.10)
Thyroid gland	0.3	0.3	1.21 (0.36–4.13)
Other endocrine glands	0.6	0.3	1.80 (0.76–4.26)
Ill-defined, secondary and unspecified sites	17.7	8.4	2.10 (1.73–2.55)
Lymphoma	7.2	6.4	1.13 (0.86–1.47)
Hodgkin's disease	0.8	0.3	2.54 (1.21–5.34)
Non-Hodgkin's lymphoma	6.4	6.1	1.05 (0.79–1.40)
Multiple myeloma, immunoproliferative and plasma cell	6.3	2.8	2.26 (1.65–3.08)
Leukaemias	7.9	5.7	1.39 (1.07–1.81)
<i>Lymphoid leukaemia</i>	3.6	2.2	1.68 (1.14–2.47)
<i>Myeloid leukaemia</i>	3.6	3.1	1.13 (0.76–1.68)
<i>Other leukaemias</i>	0.7	0.4	1.90 (0.80–4.54)
Other and unspecified lymphoid, haematopoietic and related tissue			

APPENDIX SIX: CANCER INCIDENCE AND MORTALITY RATES AND RATE RATIOS AGE-STANDARDISED TO WHO WORLD POPULATION

INCIDENCE

Table A15: Cancer registrations: age-sex-standardised rates per 100,000 and rate ratios, 1996–2001

Table A16: Female cancer registrations: age-standardised rates per 100,000 and rate ratios, 1996–2001

Table A17: Male cancer registrations: age-standardised rates per 100,000 and rate ratios, 1996–2001

MORTALITY

Table A18: Cancer deaths: age-sex-standardised rates per 100,000 and rate ratios, 1996–2001

Table A19: Female cancer deaths: age-standardised rates per 100,000 and rate ratios, 1996–2001

Table A20: Male cancer deaths: age-standardised rates per 100,000 and rate ratios, 1996–2001

Table A15: Cancer registrations: age-sex-standardised rates per 100,000 and rate ratios, 1996–2001 (WHO standard)

Site	Māori rate	Non-Māori rate	Rate ratio (95% CI)
All sites	425.0	359.1	1.18 (1.15–1.22)
Lip, oral cavity and pharynx	6.1	6.1	1.00 (0.82–1.21)
Digestive organs			
Oesophagus	6.4	4.0	1.62 (1.28–2.04)
Stomach	19.9	7.2	2.76 (2.42–3.14)
Colorectal	33.4	52.0	0.64 (0.58–0.71)
<i>Colon</i>	18.9	34.0	0.56 (0.49–0.63)
<i>Rectum, rectosigmoid junction and anus</i>	14.5	18.0	0.80 (0.69–0.94)
Liver and intrahepatic bile ducts	10.1	2.7	3.78 (3.17–4.50)
Gallbladder and other biliary tract	3.0	1.4	2.19 (1.53–3.12)
Pancreas	11.4	6.0	1.90 (1.60–2.24)
Other digestive organs	4.0	2.1	1.90 (1.44–2.50)
Respiratory and intrathoracic organs			
Larynx	2.4	1.7	1.43 (1.02–1.99)
Trachea, bronchus and lung	90.6	29.3	3.09 (2.91–3.29)
Other respiratory and intrathoracic organs	1.8	1.0	1.88 (1.30–2.72)
Bone and articular cartilage	1.0	1.0	0.98 (0.63–1.51)
Skin			
Melanoma of skin	5.4	38.1	0.14 (0.11–0.18)
Other malignant neoplasms of skin	1.0	1.4	0.75 (0.42–1.35)
Mesothelial and soft tissue	4.3	4.3	0.99 (0.79–1.25)
Breast: female*	106.5	90.0	1.18 (1.11–1.26)
Female genital organs			
Cervix uteri*	19.1	8.3	2.30 (1.99–2.66)
Uterus*	17.9	11.5	1.56 (1.32–1.83)
Ovary*	14.2	11.9	1.19 (1.00–1.42)
Other female genital organs*	3.3	2.8	1.18 (0.82–1.72)
Male genital organs			
Prostate*	106.3	119.2	0.89 (0.82–0.97)
Testis*	11.3	6.3	1.80 (1.50–2.16)
Other male genital organs*	0.4	0.7	0.58 (0.16–2.12)
Urinary tract			
Kidney, except renal pelvis	7.0	7.2	0.98 (0.81–1.18)
Bladder	5.9	12.0	0.49 (0.38–0.63)
Other urinary tract	0.4	0.9	0.43 (0.19–0.99)
Eye and other parts of central nervous system			
Brain	4.8	6.1	0.79 (0.63–0.98)
Other eye and central nervous system	0.9	1.6	0.54 (0.34–0.86)
Thyroid and other endocrine glands			
Thyroid gland	5.2	3.5	1.51 (1.23–1.85)
Other endocrine glands	0.8	0.5	1.62 (0.91–2.89)
Ill-defined, secondary and unspecified sites	22.0	12.0	1.83 (1.62–2.07)
Lymphoma			
Hodgkin's disease	1.2	1.9	0.63 (0.43–0.92)
Non-Hodgkin's lymphoma	12.6	12.4	1.02 (0.88–1.18)
Multiple myeloma, immunoproliferative and plasma cell	8.9	4.8	1.85 (1.51–2.26)
Leukaemias	14.7	12.3	1.19 (1.03–1.38)
<i>Lymphoid leukaemia</i>	7.5	7.2	1.04 (0.85–1.27)
<i>Myeloid leukaemia</i>	5.6	4.6	1.22 (0.97–1.53)
<i>Other leukaemias</i>	1.6	0.5	3.29 (1.81–5.97)
Other and unspecified lymphoid, haematopoietic and related tissue	0.1	0.0	3.08 (0.89–10.67)

* Sex-specific rates.

Table A16: Female cancer registrations: age-standardised rates per 100,000 and rate ratios, 1996–2001 (WHO standard)

Site	Māori rate	Non-Māori rate	Rate ratio (95% CI)
All sites	394.7	311.9	1.27 (1.22–1.31)
Lip, oral cavity and pharynx	3.9	3.8	1.05 (0.75–1.46)
Digestive organs			
Oesophagus	3.3	2.2	1.48 (0.95–2.30)
Stomach	16.6	4.5	3.67 (3.04–4.44)
Colorectal	24.7	46.3	0.53 (0.46–0.61)
<i>Colon</i>	14.9	32.8	0.45 (0.38–0.54)
<i>Rectum, rectosigmoid junction and anus</i>	9.8	13.5	0.73 (0.58–0.91)
Liver and intrahepatic bile ducts	3.6	1.8	2.02 (1.38–2.95)
Gallbladder and other biliary tract	2.4	1.4	1.76 (1.11–2.80)
Pancreas	10.7	5.2	2.06 (1.63–2.60)
Other digestive organs	2.9	1.8	1.58 (1.02–2.43)
Respiratory and intrathoracic organs			
Larynx	0.8	0.4	1.87 (0.87–4.03)
Trachea, bronchus and lung	81.5	19.8	4.11 (3.77–4.47)
Other respiratory and intrathoracic organs	1.7	0.8	2.32 (1.37–3.91)
Bone and articular cartilage	0.6	0.8	0.74 (0.37–1.48)
Skin			
Melanoma of skin	6.3	36.3	0.17 (0.13–0.22)
Other malignant neoplasms of skin	1.1	1.0	1.12 (0.59–2.11)
Mesothelial and soft tissue	3.5	2.9	1.20 (0.87–1.66)
Breast: female	106.5	90.0	1.18 (1.11–1.26)
Female genital organs			
Cervix uteri	19.1	8.3	2.30 (1.99–2.66)
Uterus	17.9	11.5	1.56 (1.32–1.83)
Ovary	14.2	11.9	1.19 (1.00–1.42)
Other female genital organs	3.3	2.8	1.18 (0.82–1.72)
Urinary tract			
Kidney, except renal pelvis	4.8	5.0	0.96 (0.70–1.31)
Bladder	3.1	5.2	0.60 (0.40–0.91)
Other urinary tract	0.4	0.6	0.66 (0.20–2.16)
Eye and other parts of central nervous system			
Brain	4.4	4.5	0.97 (0.72–1.31)
Other eye and central nervous system	0.8	1.5	0.56 (0.31–1.02)
Thyroid and other endocrine glands			
Thyroid gland	7.5	5.1	1.47 (1.16–1.84)
Other endocrine glands	0.4	0.4	0.91 (0.38–2.14)
Ill-defined, secondary and unspecified sites	20.3	10.7	1.89 (1.61–2.22)
Lymphoma			
Hodgkin's disease	1.2	1.8	0.65 (0.37–1.16)
Non-Hodgkin's lymphoma	11.2	10.6	1.06 (0.86–1.30)
Multiple myeloma, immunoproliferative and plasma cell	5.8	3.6	1.61 (1.18–2.19)
Leukaemias	10.1	9.2	1.10 (0.88–1.37)
<i>Lymphoid leukaemia</i>	4.4	5.0	0.88 (0.63–1.23)
<i>Myeloid leukaemia</i>	4.7	3.8	1.24 (0.92–1.67)
<i>Other leukaemias</i>	1.0	0.4	2.52 (1.04–6.09)
Other and unspecified lymphoid, haematopoietic and related tissue	0.1	0.0	2.50 (0.48–12.92)

Table A17: Male cancer registrations: age-standardised rates per 100,000 and rate ratios, 1996–2001 (WHO standard)

Site	Māori rate	Non-Māori rate	Rate ratio (95% CI)
All sites	455.3	406.2	1.12 (1.08–1.17)
Lip, oral cavity and pharynx	8.3	8.5	0.97 (0.76–1.24)
Digestive organs			
Oesophagus	9.5	5.7	1.68 (1.27–2.20)
Stomach	23.1	9.9	2.34 (1.96–2.79)
Colorectal	42.2	57.7	0.73 (0.64–0.83)
<i>Colon</i>	23.0	35.1	0.65 (0.55–0.78)
<i>Rectum, rectosigmoid junction and anus</i>	19.2	22.6	0.85 (0.70–1.03)
Liver and intrahepatic bile ducts	16.6	3.6	4.64 (3.80–5.66)
Gallbladder and other biliary tract	3.6	1.4	2.61 (1.57–4.32)
Pancreas	12.1	6.8	1.77 (1.40–2.25)
Other digestive organs	5.0	2.4	2.14 (1.50–3.07)
Respiratory and intrathoracic organs			
Larynx	4.1	3.0	1.36 (0.94–1.97)
Trachea, bronchus and lung	99.8	38.7	2.58 (2.37–2.80)
Other respiratory and intrathoracic organs	1.9	1.2	1.61 (0.96–2.71)
Bone and articular cartilage	1.3	1.1	1.15 (0.66–2.00)
Skin			
Melanoma of skin	4.5	40.0	0.11 (0.08–0.17)
Other malignant neoplasms of skin	0.9	1.7	0.54 (0.19–1.52)
Mesothelial and soft tissue	5.0	5.7	0.89 (0.64–1.23)
Breast: male	0.4	0.6	0.60 (0.21–1.72)
Male genital organs			
Prostate	106.3	119.2	0.89 (0.82–0.97)
Testis	11.3	6.3	1.80 (1.50–2.16)
Other male genital organs	0.4	0.7	0.58 (0.16–2.12)
Urinary tract			
Kidney, except renal pelvis	9.2	9.3	0.99 (0.79–1.25)
Bladder	8.6	18.8	0.46 (0.34–0.62)
Other urinary tract	0.4	1.2	0.32 (0.10–1.04)
Eye and other parts of central nervous system			
Brain	5.2	7.6	0.68 (0.50–0.94)
Other eye and central nervous system	0.9	1.8	0.52 (0.26–1.06)
Thyroid and other endocrine glands			
Thyroid gland	3.0	1.8	1.64 (1.06–2.51)
Other endocrine glands	1.2	0.5	2.18 (1.06–4.49)
Ill-defined, secondary and unspecified sites	23.8	13.3	1.78 (1.49–2.14)
Lymphoma			
Hodgkin's disease	1.3	2.1	0.61 (0.38–1.00)
Non-Hodgkin's lymphoma	14.1	14.2	0.99 (0.81–1.22)
Multiple myeloma, immunoproliferative and plasma cell	12.0	6.0	1.99 (1.54–2.57)
Leukaemias			
<i>Lymphoid leukaemia</i>	10.6	9.5	1.12 (0.87–1.45)
<i>Myeloid leukaemia</i>	6.5	5.4	1.20 (0.87–1.67)
<i>Other leukaemias</i>	2.1	0.6	3.83 (1.77–8.28)
Other and unspecified lymphoid, haematopoietic and related tissue	0.2	0.0	3.79 (0.60–24.08)

Table A18: Cancer deaths: age-sex-standardised rates per 100,000 and rate ratios, 1996–2001 (WHO standard)

Site	Māori rate	Non-Māori rate	Rate ratio (95% CI)
All sites	271.8	146.6	1.85 (1.79–1.92)
Lip, oral cavity and pharynx	3.9	2.2	1.79 (1.35–2.38)
Digestive organs			
Oesophagus	5.8	3.6	1.63 (1.28–2.07)
Stomach	17.7	5.3	3.32 (2.88–3.83)
Colorectal	20.3	22.6	0.90 (0.79–1.02)
Colon	10.9	14.8	0.74 (0.62–0.88)
Rectum, rectosigmoid junction and anus	9.4	7.8	1.20 (0.99–1.46)
Liver and intrahepatic bile ducts	8.7	2.2	3.98 (3.29–4.82)
Gallbladder and other biliary tract	2.5	1.0	2.55 (1.71–3.80)
Pancreas	11.6	5.7	2.05 (1.73–2.44)
Other digestive organs	4.7	2.3	2.07 (1.57–2.74)
Respiratory and intrathoracic organs			
Larynx	1.0	0.6	1.60 (0.89–2.89)
Trachea, bronchus and lung	88.7	25.8	3.44 (3.24–3.66)
Other respiratory and intrathoracic organs	1.0	0.5	1.89 (1.03–3.46)
Bone and articular cartilage	0.5	0.5	1.08 (0.58–2.01)
Skin			
Melanoma of skin	1.0	5.2	0.20 (0.11–0.34)
Other malignant neoplasms of skin	0.7	1.4	0.48 (0.22–1.08)
Mesothelial and soft tissue	2.7	2.3	1.15 (0.85–1.56)
Breast: female*	37.5	23.7	1.58 (1.41–1.77)
Female genital organs			
Cervix uteri*	10.7	2.3	4.68 (3.74–5.86)
Uterus*	6.2	2.6	2.40 (1.75–3.28)
Ovary*	7.4	6.6	1.13 (0.87–1.47)
Other female genital organs*	1.2	0.8	1.54 (0.78–3.04)
Male genital organs			
Prostate*	36.8	23.4	1.58 (1.33–1.86)
Testis*	0.9	0.3	3.47 (1.82–6.65)
Other male genital organs*		0.1	(0.00–0.00)
Urinary tract			
Kidney, except renal pelvis	3.9	2.9	1.35 (1.04–1.74)
Bladder	3.1	3.3	0.93 (0.64–1.35)
Other urinary tract	0.2	0.2	0.77 (0.22–2.65)
Eye and other parts of central nervous system			
Brain	4.1	4.8	0.86 (0.68–1.09)
Other eye and central nervous system	0.2	0.4	0.59 (0.18–1.97)
Thyroid and other endocrine glands			
Thyroid gland	0.7	0.3	2.14 (1.13–4.04)
Other endocrine glands	0.4	0.3	1.45 (0.62–3.37)
Ill-defined, secondary and unspecified sites	17.3	9.2	1.88 (1.63–2.17)
Lymphoma			
Hodgkin's disease	0.5	0.3	1.66 (0.84–3.27)
Non-Hodgkin's lymphoma	6.9	5.9	1.17 (0.94–1.44)
Multiple myeloma, immunoproliferative and plasma cell	5.6	2.8	1.98 (1.53–2.57)
Leukaemias			
Lymphoid leukaemia	2.8	1.9	1.52 (1.10–2.10)
Myeloid leukaemia	3.9	3.0	1.32 (0.99–1.75)
Other leukaemias	0.9	0.3	2.60 (1.33–5.10)
Other and unspecified lymphoid, haematopoietic and related tissue	0.0	0.0	1.13 (0.13–10.04)

* Sex-specific rates.

Table A19: Female cancer deaths: age-standardised rates per 100,000 and rate ratios, 1996–2001 (WHO standard)

Site	Māori rate	Non-Māori rate	Rate ratio (95% CI)
All sites	241.5	121.8	1.98 (1.89–2.08)
Lip, oral cavity and pharynx	1.5	1.1	1.32 (0.70–2.48)
Digestive organs			
Oesophagus	3.1	1.9	1.61 (1.03–2.51)
Stomach	12.8	3.4	3.79 (3.04–4.71)
Colorectal	15.1	19.1	0.79 (0.66–0.95)
<i>Colon</i>	8.4	13.5	0.62 (0.49–0.80)
<i>Rectum, rectosigmoid junction and anus</i>	6.7	5.6	1.20 (0.91–1.59)
Liver and intrahepatic bile ducts	2.9	1.3	2.22 (1.48–3.32)
Gallbladder and other biliary tract	1.9	1.0	1.80 (1.05–3.06)
Pancreas	10.9	5.0	2.18 (1.72–2.76)
Other digestive organs	3.9	2.0	1.99 (1.33–2.96)
Respiratory and intrathoracic organs			
Larynx	0.5	0.1	3.70 (1.21–11.31)
Trachea, bronchus and lung	80.1	16.7	4.81 (4.40–5.25)
Other respiratory and intrathoracic organs	0.8	0.3	2.34 (1.06–5.16)
Bone and articular cartilage	0.2	0.4	0.52 (0.18–1.49)
Skin			
Melanoma of skin	1.4	3.7	0.38 (0.20–0.73)
Other malignant neoplasms of skin	0.4	0.7	0.58 (0.20–1.62)
Mesothelial and soft tissue	2.1	1.3	1.57 (1.02–2.42)
Breast: female	37.5	23.7	1.58 (1.41–1.77)
Female genital organs			
Cervix uteri	10.7	2.3	4.68 (3.74–5.86)
Uterus	6.2	2.6	2.40 (1.75–3.28)
Ovary	7.4	6.6	1.13 (0.87–1.47)
Other female genital organs	1.2	0.8	1.54 (0.78–3.04)
Urinary tract			
Kidney, except renal pelvis	2.6	2.0	1.30 (0.83–2.03)
Bladder	2.6	1.7	1.56 (0.94–2.57)
Other urinary tract	0.3	0.1	2.94 (0.81–10.71)
Eye and other parts of central nervous system			
Brain	3.5	3.7	0.95 (0.67–1.36)
Other eye and central nervous system	0.1	0.2	0.57 (0.12–2.61)
Thyroid and other endocrine glands			
Thyroid gland	1.1	0.4	3.06 (1.45–6.45)
Other endocrine glands	0.1	0.2	0.41 (0.05–3.08)
Ill-defined, secondary and unspecified sites	14.3	8.5	1.69 (1.39–2.04)
Lymphoma			
Hodgkin's disease	0.1	0.2	0.51 (0.07–3.77)
Non-Hodgkin's lymphoma	6.4	4.8	1.35 (1.00–1.81)
Multiple myeloma, immunoproliferative and plasma cell	3.5	2.2	1.59 (1.04–2.43)
Leukaemias			
<i>Lymphoid leukaemia</i>	1.7	1.2	1.38 (0.80–2.37)
<i>Myeloid leukaemia</i>	3.5	2.3	1.55 (1.06–2.25)
<i>Other leukaemias</i>	0.9	0.2	3.64 (1.44–9.23)
Other and unspecified lymphoid, haematopoietic and related tissue	0.0	0.0	2.94 (0.31–28.31)

Table A20: Male cancer deaths: age-standardised rates per 100,000 and rate ratios, 1996–2001 (WHO standard)

Site	Māori rate	Non-Māori rate	Rate ratio (95% CI)
All sites	302.2	171.5	1.76 (1.68–1.85)
Lip, oral cavity and pharynx	6.3	3.2	1.96 (1.43–2.69)
Digestive organs			
Oesophagus	8.6	5.2	1.64 (1.24–2.17)
Stomach	22.6	7.3	3.11 (2.58–3.74)
Colorectal	25.5	26.1	0.97 (0.82–1.16)
<i>Colon</i>	13.3	16.0	0.83 (0.65–1.06)
<i>Rectum, rectosigmoid junction and anus</i>	12.2	10.1	1.20 (0.93–1.56)
Liver and intrahepatic bile ducts	14.4	3.0	4.76 (3.83–5.91)
Gallbladder and other biliary tract	3.2	1.0	3.35 (1.92–5.85)
Pancreas	12.3	6.3	1.95 (1.53–2.50)
Other digestive organs	5.4	2.5	2.14 (1.45–3.15)
Respiratory and intrathoracic organs			
Larynx	1.5	1.1	1.36 (0.68–2.73)
Trachea, bronchus and lung	97.3	34.9	2.79 (2.56–3.04)
Other respiratory and intrathoracic organs	1.2	0.7	1.68 (0.71–3.94)
Bone and articular cartilage	0.9	0.6	1.42 (0.68–2.94)
Skin			
Melanoma of skin	0.7	6.7	0.10 (0.04–0.28)
Other malignant neoplasms of skin	0.9	2.1	0.45 (0.16–1.30)
Mesothelial and soft tissue	3.3	3.3	0.99 (0.65–1.49)
Breast: male	0.2	0.1	1.83 (0.52–6.38)
Male genital organs			
Prostate	36.8	23.4	1.58 (1.33–1.86)
Testis	0.9	0.3	3.47 (1.82–6.65)
Other male genital organs		0.1	
Urinary tract			
Kidney, except renal pelvis	5.3	3.8	1.37 (1.01–1.87)
Bladder	3.5	4.9	0.72 (0.42–1.21)
Other urinary tract		0.3	(0.00–0.00)
Eye and other parts of central nervous system			
Brain	4.7	5.9	0.80 (0.58–1.10)
Other eye and central nervous system	0.3	0.5	0.60 (0.12–3.04)
Thyroid and other endocrine glands			
Thyroid gland	0.3	0.3	1.03 (0.30–3.49)
Other endocrine glands	0.7	0.3	2.08 (0.82–5.27)
Ill-defined, secondary and unspecified sites	20.4	9.9	2.05 (1.67–2.51)
Lymphoma			
Hodgkin's disease	0.8	0.3	2.43 (1.16–5.06)
Non-Hodgkin's lymphoma	7.3	7.0	1.04 (0.77–1.41)
Multiple myeloma, immunoproliferative and plasma cell	7.7	3.4	2.24 (1.62–3.09)
Leukaemias			
<i>Lymphoid leukaemia</i>	9.1	6.5	1.38 (1.05–1.83)
<i>Myeloid leukaemia</i>	3.9	2.5	1.59 (1.06–2.38)
<i>Myeloid leukaemia</i>	4.3	3.6	1.17 (0.77–1.78)
<i>Other leukaemias</i>	0.9	0.4	2.01 (0.76–5.32)
Other and unspecified lymphoid, haematopoietic and related tissue		0.0	

REFERENCES

- Ahlbom A, Norell S. 1984. *Introduction to Modern Epidemiology*. Chestnut Hill: Epidemiology Resources Inc.
- Ajwani S, Blakely T, Robson B, et al. 2003a. *Decades of Disparity: Ethnic mortality trends in New Zealand 1980–1999*. Wellington: Ministry of Health and University of Otago.
- Ajwani S, Blakely T, Robson B, et al. 2003b. Unlocking the numerator–denominator bias III: adjustment ratios for 1981–1999 mortality data: the New Zealand Census–Mortality Study. *New Zealand Medical Journal* 116(1175): 456.
- Ajwani S, Blakely T, Robson B, et al. 2003c. *Unlocking the Numerator–Denominator Bias for the 1980s and 1990s*. NZCMS Technical Report No 4. Wellington: Department of Public Health, Wellington School of Medicine and Health Sciences.
- American Cancer Society. 1995. *American Cancer Society Textbook of Clinical Oncology*. Atlanta, Georgia: American Cancer Society.
- Australian Institute of Health and Welfare (AIHW), Australasian Association of Cancer Registries (ACC). 2004. *Cancer in Australia 2001*. Cancer Series No 28. Canberra: AIHW.
- Beaglehole R, Bonita R, Kjellstrom T. 1993. *Basic Epidemiology*. Geneva: World Health Organization.
- Blakely T, Ajwani S, Robson B, et al. 2004. Decades of disparity: widening ethnic mortality gaps from 1980 to 1999. *New Zealand Medical Journal* 117(1199): 995.
- Cancer Research UK. 2003a. *Specific Cancers: Gullet (oesophageal) cancer*. Cancer Research UK.
- Cancer Research UK. 2003b. *Specific Cancers: Hodgkin’s disease*. Cancer Research UK.
- Cancer Research UK. 2003c. *Specific Cancers: Multiple myeloma*. Cancer Research UK.
- Cancer Research UK. 2004a. *Specific Cancers: Acute leukaemia*. Cancer Research UK.
- Cancer Research UK. 2004b. *Specific Cancers: Lung cancer*. Cancer Research UK.
- Cancer Research UK. 2004c. *Specific Cancers: Mesothelioma*. Cancer Research UK.
- Cancer Research UK. 2004d. *Specific Cancers: Pancreatic cancer*. Cancer Research UK.
- Cancer Research UK. 2004e. *Specific Cancers: Stomach cancer (gastric cancer)*. Cancer Research UK.
- Cancer Society. 2002. *Understanding Cancer: Lung cancer*. Wellington: Cancer Society of New Zealand Inc.
- Cancer Society. 2003a. *Cancer of the Testicles*. Wellington: Cancer Society of New Zealand Inc.
- Cancer Society. 2003b. *Stomach Cancer*. Wellington: Cancer Society of New Zealand Inc.
- Clayton D, Hills M. 1993. *Statistical Methods in Epidemiology*. Oxford: Oxford University Press.
- Cormack D, Robson B, Purdie G, et al. 2005. *Access to Cancer Services for Maori*. Wellington: Wellington School of Medicine and Health Sciences.
- Gill A, Martin I. 2002. Survival from upper gastrointestinal cancer in New Zealand: the effect of distance from a major hospital, socioeconomic status, ethnicity, age and gender. *ANZ Journal of Surgery* 72: 643–6.
- Haynes M, Smedley B. 1999. *The Unequal Burden of Cancer: An assessment of NIH research and programs for ethnic minorities and the medically underserved*. Washington DC: National Academy Press.
- Jeffreys M, Stevanovic V, Tobias M, et al. 2005. Ethnic inequalities in cancer survival in New Zealand: linkage study. *American Journal of Public Health* 95(5): 834–7.

- Lee ET. 1980. *Statistical Methods for Survival Data Analysis*. Belmont: Lifetime Learning Publications.
- Lin D, Wei L, Ying Z. 1993. Checking the Cox model with cumulative sums of Martingale-based residuals. *Biometrika* 80: 557–72.
- Minister of Health. 2003. *The New Zealand Cancer Control Strategy*. Wellington: Ministry of Health and the New Zealand Cancer Control Trust.
- Ministry of Health. 2002. *Cancer in New Zealand: Trends and projections*. Occasional Bulletin No 15. Wellington: Ministry of Health.
- Ministry of Health. 2004a. *A Portrait of Health: Key results of the 2002/03 New Zealand Health Survey*. Wellington: Ministry of Health.
- Ministry of Health. 2004b. *The Health and Independence Report 2004: Director-General of Health's annual report on the state of public health*. Wellington: Ministry of Health.
- Moala A. 1999. *Recording of Ethnicity Information at Capital Coast Health: Final report on Pacific Health Sector Fellowship to the Ministry of Health*. Wellington.
- National Cancer Institute. 1999. Bone cancer: questions and answers. *Cancer Facts: Fact sheet 6.26*. URL: www.cancer.gov. National Cancer Institute.
- National Cancer Institute. 2002. *What You Need to Know about Cancer of the Uterus*. National Cancer Institute.
- National Cancer Institute. 2003. *What You Need to Know about Brain Tumors*. National Cancer Institute.
- National Cancer Institute. 2005. *What You Need to Know about Multiple Myeloma*. National Cancer Institute.
- Neal A, Hoskin P. 2003. *Clinical Oncology: Basic principles and practice*. London: Arnold.
- NZHS. 2004. *New Zealand Cancer Registry Data Dictionary: Version 1.2*. Wellington: Ministry of Health.
- NZHS. 2005. *Cancer: New registrations and deaths 2001*. Wellington: Ministry of Health.
- Peduzzi P, Concato J, Feinstein AR, et al. 1995. Importance of events per independent variable in proportional hazards regression analysis. II: Accuracy and precision of regression estimates. *Journal of Clinical Epidemiology* 48: 1503–10.
- Peduzzi P, Concato J, Kemper E, et al. 1996. A simulation study of the number of events per independent variable in proportional hazards regression analysis. *Journal of Clinical Epidemiology* 49: 1373–9.
- Platel CFE, Semmens JB. 2004. Review of survival curves for colorectal cancer. *Diseases of the Colon and Rectum* 47: 2070–5.
- Pōmare E, Keefe-Ormsby V, Ormsby C, et al. 1995. *Hauora: Maori standards of health III – a study of the years 1970–1991*. Wellington: Te Rōpū Rangahau Hauora a Eru Pōmare.
- Ries LA, Eisner MP, Kosary CL, et al. 2003. *SEER Cancer Statistics Review, 1975–2000*. Bethesda, MD: National Cancer Institute.
- Sadler L, Priest P, Peters J, et al. 2004. *The New Zealand Cervical Cancer Audit: Whakamataua mate pukupuku taiawa o Aotearoa (screening of women with cervical cancer: 2000–2002)*. Wellington: Ministry of Health.
- SEER. 2005. *SEER Glossary of Statistical Terms*. Surveillance Research Programme, National Cancer Institute. URL: www.seer.cancer.gov.
- Shavers V, Brown M. 2002. Racial and ethnic disparities in the receipt of cancer treatment. *Journal of the National Cancer Institute* 94: 334–57.
- Smedley B, Stith A, Nelson A. 2002. *Unequal Treatment: Confronting racial and ethnic disparities in healthcare*. Washington: National Academy Press.