

Table 33 Summary of all people with cancer and those individuals linked to census records by status, sex and cohort.

Variable	Sex	Link	Link Status	1981-86	1986-91	1991-96	1996-01	2001-04	
<i>Summary over All People</i>									
All	Both Sexes	Total	Total	52,698	63,627	77,160	96,444	83,790	
		Not Linked	Total	14,136	14,604	16,053	19,551	15,354	
		Linked	Total	38,562	49,020	61,104	76,890	68,433	
	Males	Total	Total	24,894	28,278	36,153	45,075	38,700	
		Not Linked	Not Linked	6,696	6,078	7,083	8,433	7,119	
		Linked	Total	Total	18,201	22,197	29,067	36,642	31,581
			MB HighWgt		12,009	15,543	18,696	24,516	25,863
			MB Med Wgt		321	234	171	318	183
			MB Low Wgt		681	816	708	1,332	1,029
			AU HighWgt		4,125	4,116	7,695	8,061	3,921
			AU Med Wgt		642	849	1,020	1,146	477
			AU Low Wgt		423	639	780	1,266	105
		Females	Total	Total	27,807	35,349	41,007	51,369	45,087
	Not Linked		Not Linked	7,443	8,526	8,970	11,118	8,235	
	Linked		Total	Total	20,364	26,826	32,037	40,248	36,852
			MB HighWgt		12,831	17,799	19,137	25,002	29,475
			MB Med Wgt		387	261	204	345	282
			MB Low Wgt		933	1,248	1,107	1,797	1,338
			AU HighWgt		4,737	4,668	8,070	8,928	4,410
			AU Med Wgt		981	2,034	2,646	2,964	1,167
	AU Low Wgt		486	813	873	1,212	177		

Table 34 Number of individuals with cancer and the percentage of those linked to census record by sex and cohort

		Males			Females		
		Total	Not Linked	Linked	Total	Not Linked	Linked
Variable		N %	N %	N %	N %	N %	N %
<i>Summary over All People</i>							
All	1981-86	24,894 100%	6,696 27%	18,201 73%	27,807 100%	7,443 27%	20,364 73%
	1986-91	28,278 100%	6,078 21%	22,197 78%	35,349 100%	8,526 24%	26,826 76%
	1991-96	36,153 100%	7,083 20%	29,067 80%	41,007 100%	8,970 22%	32,037 78%
	1996-01	45,075 100%	8,433 19%	36,642 81%	51,369 100%	11,118 22%	40,248 78%
	2001-04	38,700 100%	7,119 18%	31,581 82%	45,087 100%	8,235 18%	36,852 82%

Table 35 Number of individuals with cancer and the percentage linked to census record by age at census, sex and cohort

		Males			Females		
		Total	Not Linked	Linked	Total	Not Linked	Linked
Variable		N %	N %	N %	N %	N %	N %
<i>Age at Census</i>							
0 - 14 yrs	1981-86	309 100%	117 38%	192 62%	294 100%	75 26%	219 74%
	1986-91	351 100%	102 29%	249 71%	348 100%	123 35%	225 65%
	1991-96	345 100%	99 29%	246 71%	351 100%	120 34%	231 66%
	1996-01	381 100%	108 28%	273 72%	405 100%	123 30%	285 70%
	2001-04	261 100%	54 21%	204 78%	279 100%	81 29%	198 71%
15 - 24 yrs	1981-86	477 100%	189 40%	288 60%	1,254 100%	543 43%	711 57%
	1986-91	531 100%	228 43%	306 58%	2,097 100%	990 47%	1,104 53%
	1991-96	555 100%	225 41%	330 59%	2,718 100%	1,248 46%	1,470 54%
	1996-01	546 100%	222 41%	327 60%	3,852 100%	1,638 43%	2,214 57%
	2001-04	372 100%	144 39%	225 60%	3,042 100%	1,068 35%	1,971 65%
25 - 44 yrs	1981-86	2,070 100%	756 37%	1,317 64%	5,928 100%	1,857 31%	4,071 69%
	1986-91	2,349 100%	795 34%	1,554 66%	8,529 100%	2,586 30%	5,946 70%
	1991-96	2,823 100%	1,008 36%	1,815 64%	8,859 100%	2,634 30%	6,225 70%
	1996-01	3,387 100%	1,191 35%	2,196 65%	11,904 100%	3,501 29%	8,403 71%

		Males			Females		
		Total	Not Linked	Linked	Total	Not Linked	Linked
Variable		N %	N %	N %	N %	N %	N %
	2001-04	2,697 100%	846 31%	1,854 69%	10,158 100%	2,364 23%	7,794 77%
45 - 64 yrs	1981-86	9,489 100%	2,649 28%	6,843 72%	9,582 100%	2,436 25%	7,143 75%
	1986-91	10,413 100%	2,448 24%	7,965 76%	11,229 100%	2,607 23%	8,622 77%
	1991-96	12,513 100%	2,949 24%	9,561 76%	12,753 100%	2,790 22%	9,963 78%
	1996-01	15,708 100%	3,633 23%	12,072 77%	16,230 100%	3,525 22%	12,702 78%
	2001-04	13,788 100%	2,976 22%	10,812 78%	14,877 100%	2,454 16%	12,423 84%
65 - 74 yrs	1981-86	7,950 100%	1,854 23%	6,093 77%	6,021 100%	1,353 22%	4,665 77%
	1986-91	8,634 100%	1,410 16%	7,227 84%	7,194 100%	1,188 17%	6,003 83%
	1991-96	11,730 100%	1,698 14%	10,032 86%	8,436 100%	1,176 14%	7,260 86%
	1996-01	15,144 100%	2,106 14%	13,038 86%	9,777 100%	1,281 13%	8,499 87%
	2001-04	12,111 100%	1,887 16%	10,221 84%	7,944 100%	1,116 14%	6,825 86%
75 - 84 yrs	1981-86	2,655 100%	561 21%	2,094 79%	2,250 100%	483 21%	1,764 78%
	1986-91	3,441 100%	561 16%	2,877 84%	2,895 100%	441 15%	2,451 85%
	1991-96	4,437 100%	567 13%	3,867 87%	3,612 100%	420 12%	3,192 88%
	1996-01	5,124 100%	606 12%	4,518 88%	4,083 100%	438 11%	3,642 89%
	2001-04	5,025 100%	654 13%	4,371 87%	3,840 100%	516 13%	3,327 87%
≥85 yrs	1981-86	1,944 100%	564 29%	1,377 71%	2,478 100%	693 28%	1,788 72%
	1986-91	2,556 100%	540 21%	2,016 79%	3,063 100%	591 19%	2,469 81%
	1991-96	3,756 100%	540 14%	3,216 86%	4,275 100%	582 14%	3,693 86%
	1996-01	4,782 100%	564 12%	4,215 88%	5,115 100%	612 12%	4,506 88%
	2001-04	4,446 100%	552 12%	3,894 88%	4,950 100%	642 13%	4,311 87%

Table 36 Number of individuals with cancer and the percentage linked to census record by total Cancer Registry ethnicity, sex and cohort

		Males			Females		
		Total	Not Linked	Linked	Total	Not Linked	Linked
Variable		N %	N %	N %	N %	N %	N %
<i>Total Ethnicity: Cancer Registry</i>							
NZ Māori	1981-86	1,161 100%	447 39%	711 61%	1,488 100%	453 30%	1,032 69%
	1986-91	1,341 100%	423 32%	918 68%	2,286 100%	600 26%	1,683 74%
	1991-96	1,767 100%	462 26%	1,308 74%	2,937 100%	615 21%	2,322 79%
	1996-01	2,334 100%	582 25%	1,755 75%	4,386 100%	963 22%	3,423 78%
	2001-04	2,205 100%	438 20%	1,770 80%	3,822 100%	696 18%	3,126 82%
Pacific	1981-86	270 100%	99 37%	171 63%	330 100%	81 25%	252 76%
	1986-91	507 100%	165 33%	342 67%	615 100%	162 26%	453 74%
	1991-96	582 100%	183 31%	396 68%	756 100%	195 26%	561 74%
	1996-01	930 100%	246 26%	687 74%	1,164 100%	243 21%	921 79%
	2001-04	816 100%	207 25%	606 74%	1,191 100%	216 18%	972 82%
Asian	1981-86	--	--	--	15 100%	--	6 40%
	1986-91	90 100%	27 30%	60 67%	102 100%	45 44%	60 59%
	1991-96	246 100%	93 38%	150 61%	312 100%	99 32%	207 66%
	1996-01	567 100%	189 33%	378 67%	954 100%	261 27%	693 73%
	2001-04	651 100%	192 29%	462 71%	1,332 100%	339 25%	993 75%
European/Other	1981-86	23,484 100%	6,150 26%	17,331 74%	26,013 100%	6,909 27%	19,107 73%
	1986-91	26,364 100%	5,472 21%	20,892 79%	32,385 100%	7,728 24%	24,657 76%
	1991-96	32,979 100%	6,198 19%	26,781 81%	36,561 100%	7,923 22%	28,635 78%
	1996-01	36,798 100%	6,321 17%	30,477 83%	41,298 100%	8,754 21%	32,544 79%
	2001-04	32,670 100%	5,622 17%	27,048 83%	37,461 100%	6,639 18%	30,819 82%

Table 37 Number of individuals with cancer and the percentage linked to census record by total NHI ethnicity, sex and cohort

		Males			Females		
		Total	Not Linked	Linked	Total	Not Linked	Linked
Variable		N %	N %	N %	N %	N %	N %
<i>Total Ethnicity: NHI</i>							
NZ Māori	1981-86	891 100%	348 39%	543 61%	1,362 100%	405 30%	960 70%
	1986-91	1,365 100%	450 33%	915 67%	2,508 100%	690 28%	1,821 73%
	1991-96	1,803 100%	447 25%	1,359 75%	3,249 100%	711 22%	2,538 78%
	1996-01	2,370 100%	600 25%	1,770 75%	4,602 100%	1,020 22%	3,579 78%
	2001-04	2,232 100%	447 20%	1,782 80%	4,032 100%	756 19%	3,276 81%
Pacific	1981-86	171 100%	51 30%	120 70%	267 100%	54 20%	213 80%
	1986-91	513 100%	171 33%	342 67%	651 100%	168 26%	486 75%
	1991-96	558 100%	171 31%	387 69%	780 100%	195 25%	585 75%
	1996-01	918 100%	228 25%	690 75%	1,209 100%	255 21%	954 79%
	2001-04	810 100%	204 25%	603 74%	1,215 100%	225 19%	993 82%
Asian	1981-86	39 100%	9 23%	27 69%	81 100%	27 33%	54 67%
	1986-91	144 100%	39 27%	102 71%	201 100%	78 39%	120 60%
	1991-96	270 100%	99 37%	171 63%	360 100%	120 33%	240 67%
	1996-01	627 100%	198 32%	429 68%	1,008 100%	264 26%	744 74%
	2001-04	639 100%	180 28%	459 72%	1,314 100%	324 25%	987 75%
European/Other	1981-86	23,001 100%	6,048 26%	16,950 74%	25,380 100%	6,753 27%	18,624 73%
	1986-91	24,546 100%	5,100 21%	19,446 79%	30,612 100%	7,278 24%	23,334 76%
	1991-96	33,048 100%	6,303 19%	26,745 81%	36,453 100%	7,968 22%	28,485 78%
	1996-01	39,369 100%	6,912 18%	32,454 82%	43,878 100%	9,363 21%	34,518 79%
	2001-04	34,002 100%	5,982 18%	28,020 82%	38,787 100%	6,963 18%	31,824 82%

Table 38 Number of individuals with cancer and the percentage linked to census record by Regional Health Authority region, sex and cohort

		Males			Females		
		Total	Not Linked	Linked	Total	Not Linked	Linked
Variable		N %	N %	N %	N %	N %	N %
<i>Regional Health Authority</i>							
Northern	1981-86	7,815 100%	2,298 29%	5,517 71%	9,363 100%	2,745 29%	6,618 71%
	1986-91	8,703 100%	2,160 25%	6,543 75%	11,688 100%	3,318 28%	8,370 72%
	1991-96	11,517 100%	2,616 23%	8,901 77%	12,498 100%	3,180 25%	9,318 75%
	1996-01	15,174 100%	3,240 21%	11,937 79%	16,935 100%	4,284 25%	12,654 75%
	2001-04	12,645 100%	2,688 21%	9,954 79%	15,132 100%	3,216 21%	11,919 79%
Midland	1981-86	4,791 100%	1,446 30%	3,342 70%	4,713 100%	1,455 31%	3,261 69%
	1986-91	5,577 100%	1,296 23%	4,281 77%	6,492 100%	1,641 25%	4,848 75%
	1991-96	7,359 100%	1,479 20%	5,883 80%	8,361 100%	1,902 23%	6,459 77%
	1996-01	8,625 100%	1,689 20%	6,939 80%	10,470 100%	2,337 22%	8,136 78%
	2001-04	8,130 100%	1,545 19%	6,588 81%	9,138 100%	1,653 18%	7,488 82%
Central	1981-86	6,192 100%	1,557 25%	4,635 75%	6,882 100%	1,656 24%	5,226 76%
	1986-91	6,996 100%	1,332 19%	5,661 81%	8,481 100%	1,761 21%	6,720 79%
	1991-96	8,712 100%	1,539 18%	7,170 82%	9,975 100%	1,947 20%	8,031 81%
	1996-01	10,791 100%	1,839 17%	8,952 83%	12,147 100%	2,325 19%	9,819 81%
	2001-04	9,243 100%	1,494 16%	7,749 84%	10,992 100%	1,887 17%	9,105 83%
Southern	1981-86	6,096 100%	1,392 23%	4,704 77%	6,843 100%	1,584 23%	5,259 77%
	1986-91	6,999 100%	1,287 18%	5,712 82%	8,688 100%	1,800 21%	6,891 79%
	1991-96	8,565 100%	1,449 17%	7,116 83%	10,173 100%	1,944 19%	8,229 81%
	1996-01	10,482 100%	1,668 16%	8,814 84%	11,814 100%	2,172 18%	9,642 82%
	2001-04	8,682 100%	1,392 16%	7,290 84%	9,825 100%	1,485 15%	8,340 85%

Table 39 Number of individuals with cancer and the percentage linked to census record by rurality, sex and cohort

		Males			Females		
		Total	Not Linked	Linked	Total	Not Linked	Linked
Variable		N %	N %	N %	N %	N %	N %
<i>Rurality Indicator (base 2001)</i>							
Main Urban Area	1981-86	15,042 100%	1,872 12%	13,170 88%	17,556 100%	2,241 13%	15,315 87%
	1986-91	17,328 100%	1,599 9%	15,726 91%	21,732 100%	2,145 10%	19,590 90%
	1991-96	22,140 100%	2,010 9%	20,130 91%	25,113 100%	2,355 9%	22,758 91%
	1996-01	28,104 100%	2,670 10%	25,434 90%	32,241 100%	3,543 11%	28,698 89%
	2001-04	23,925 100%	2,376 10%	21,546 90%	29,139 100%	2,775 10%	26,364 90%
Secondary Urban Area	1981-86	1,674 100%	171 10%	1,500 90%	1,794 100%	162 9%	1,632 91%
	1986-91	1,998 100%	144 7%	1,854 93%	2,391 100%	204 9%	2,187 91%
	1991-96	2,583 100%	210 8%	2,373 92%	2,988 100%	288 10%	2,700 90%
	1996-01	3,117 100%	276 9%	2,838 91%	3,468 100%	297 9%	3,168 91%
	2001-04	2,697 100%	237 9%	2,460 91%	3,054 100%	252 8%	2,802 92%
Minor Urban Area	1981-86	2,418 100%	270 11%	2,148 89%	2,424 100%	282 12%	2,142 88%
	1986-91	2,958 100%	270 9%	2,685 91%	3,375 100%	378 11%	3,000 89%
	1991-96	3,846 100%	297 8%	3,549 92%	4,083 100%	339 8%	3,747 92%
	1996-01	4,719 100%	444 9%	4,272 91%	4,899 100%	462 9%	4,437 91%
	2001-04	3,978 100%	375 9%	3,603 91%	4,269 100%	402 9%	3,867 91%
Rural Centre	1981-86	471 100%	66 14%	402 85%	405 100%	51 13%	354 87%
	1986-91	558 100%	72 13%	486 87%	618 100%	69 11%	549 89%
	1991-96	840 100%	78 9%	759 90%	819 100%	84 10%	735 90%
	1996-01	1,041 100%	120 12%	918 88%	1,050 100%	138 13%	909 87%
	2001-04	915 100%	105 11%	813 89%	900 100%	96 11%	801 89%
Other Rural	1981-86	1,083 100%	105 10%	975 90%	1,047 100%	123 12%	921 88%
	1986-91	1,560 100%	114 7%	1,446 93%	1,710 100%	210 12%	1,497 88%
	1991-96	2,415 100%	162 7%	2,253 93%	2,334 100%	234 10%	2,097 90%
	1996-01	3,477 100%	297 9%	3,177 91%	3,444 100%	402 12%	3,042 88%
	2001-04	3,495 100%	336 10%	3,159 90%	3,354 100%	336 10%	3,018 90%

Table 40 Number of individuals with cancer and the percentage linked to census record at the time since census, sex and cohort

		Males			Females		
		Total	Not Linked	Linked	Total	Not Linked	Linked
Variable		N %	N %	N %	N %	N %	N %
<i>Time Since Census</i>							
1981-86	0-12 months	5,142 100%	1,227 24%	3,915 76%	5,799 100%	1,317 23%	4,485 77%
	13-24 mths	5,079 100%	1,377 27%	3,699 73%	5,418 100%	1,368 25%	4,050 75%
	25-36 mths	5,061 100%	1,353 27%	3,705 73%	5,586 100%	1,536 27%	4,050 73%
	37-48 mths	5,073 100%	1,392 27%	3,678 73%	5,775 100%	1,632 28%	4,143 72%
	49+ months	4,542 100%	1,344 30%	3,198 70%	5,226 100%	1,590 30%	3,633 70%
1986-91	0-12 months	5,661 100%	1,041 18%	4,620 82%	6,726 100%	1,215 18%	5,514 82%
	13-24 mths	5,535 100%	1,062 19%	4,473 81%	6,927 100%	1,494 22%	5,433 78%
	25-36 mths	5,718 100%	1,230 22%	4,488 78%	7,452 100%	1,854 25%	5,598 75%
	37-48 mths	5,790 100%	1,374 24%	4,413 76%	7,341 100%	1,992 27%	5,346 73%
	49+ months	5,574 100%	1,371 25%	4,200 75%	6,903 100%	1,968 29%	4,938 72%
1991-96	0-12 months	6,318 100%	942 15%	5,373 85%	8,085 100%	1,179 15%	6,906 85%
	13-24 mths	6,414 100%	1,071 17%	5,343 83%	7,623 100%	1,512 20%	6,114 80%
	25-36 mths	6,903 100%	1,311 19%	5,592 81%	7,566 100%	1,674 22%	5,892 78%
	37-48 mths	8,256 100%	1,830 22%	6,426 78%	8,787 100%	2,181 25%	6,603 75%
	49+ months	8,262 100%	1,929 23%	6,333 77%	8,949 100%	2,424 27%	6,522 73%
1996-01	0-12 months	8,988 100%	1,347 15%	7,641 85%	9,840 100%	1,638 17%	8,202 83%
	13-24 mths	8,655 100%	1,458 17%	7,194 83%	9,801 100%	1,914 20%	7,887 80%
	25-36 mths	8,871 100%	1,653 19%	7,218 81%	9,816 100%	2,097 21%	7,722 79%
	37-48 mths	9,171 100%	1,881 21%	7,290 79%	10,716 100%	2,526 24%	8,190 76%
	49+ months	9,390 100%	2,088 22%	7,299 78%	11,193 100%	2,943 26%	8,250 74%
2001-04	0-12 months	10,590 100%	1,725 16%	8,865 84%	12,372 100%	2,121 17%	10,251 83%
	13-24 mths	9,831 100%	1,734 18%	8,097 82%	11,712 100%	1,998 17%	9,714 83%
	25-36 mths	10,143 100%	1,965 19%	8,181 81%	11,529 100%	2,157 19%	9,375 81%
	37-48 mths†	8,079 100%	1,692 21%	6,387 79%	9,396 100%	1,962 21%	7,434 79%

† 2001-04 cohort only had 46 months of follow-up, all other cohorts had 60 months

Table 41 Number of individuals with cancer and the percentage linked to census record by NZDep, sex and cohort

		Males			Females		
		Total	Not Linked	Linked	Total	Not Linked	Linked
Variable		N %	N %	N %	N %	N %	N %
<i>NZ Deprivation 2001 Index (Quintiles)</i>							
Missing	1981-86	4,218 100%	4,212 100%	9 0%	4,590 100%	4,584 100%	6 0%
	1986-91	3,888 100%	3,879 100%	9 0%	5,532 100%	5,526 100%	6 0%
	1991-96	4,335 100%	4,329 100%	6 0%	5,679 100%	5,670 100%	12 0%
	1996-01	4,632 100%	4,620 100%	12 0%	6,285 100%	6,273 100%	15 0%
	2001-04	3,711 100%	3,693 100%	15 0%	4,389 100%	4,377 100%	12 0%
Dec 1-2 (Least Deprived)	1981-86	3,276 100%	366 11%	2,910 89%	3,699 100%	477 13%	3,225 87%
	1986-91	3,792 100%	363 10%	3,432 91%	4,740 100%	537 11%	4,203 89%
	1991-96	5,493 100%	507 9%	4,986 91%	5,616 100%	579 10%	5,037 90%
	1996-01	7,854 100%	768 10%	7,083 90%	8,082 100%	981 12%	7,104 88%
	2001-04	7,416 100%	768 10%	6,648 90%	7,830 100%	795 10%	7,035 90%
Dec 3-4	1981-86	3,687 100%	402 11%	3,285 89%	4,179 100%	474 11%	3,702 89%
	1986-91	4,596 100%	378 8%	4,221 92%	5,427 100%	555 10%	4,869 90%
	1991-96	6,153 100%	543 9%	5,610 91%	6,564 100%	669 10%	5,895 90%
	1996-01	8,295 100%	744 9%	7,551 91%	8,823 100%	1,029 12%	7,794 88%
	2001-04	7,431 100%	741 10%	6,690 90%	8,247 100%	801 10%	7,446 90%
Dec 5-6	1981-86	4,323 100%	525 12%	3,798 88%	4,974 100%	621 12%	4,356 88%
	1986-91	5,250 100%	441 8%	4,812 92%	6,327 100%	606 10%	5,721 90%
	1991-96	6,930 100%	543 8%	6,387 92%	7,617 100%	720 9%	6,897 91%
	1996-01	8,700 100%	756 9%	7,944 91%	9,510 100%	990 10%	8,520 90%
	2001-04	7,338 100%	687 9%	6,648 91%	8,661 100%	804 9%	7,854 91%
Dec 7-8	1981-86	4,806 100%	573 12%	4,230 88%	5,391 100%	672 12%	4,716 87%
	1986-91	5,646 100%	516 9%	5,133 91%	6,900 100%	672 10%	6,225 90%
	1991-96	7,074 100%	606 9%	6,465 91%	8,202 100%	717 9%	7,488 91%
	1996-01	8,460 100%	834 10%	7,626 90%	9,834 100%	1,023 10%	8,811 90%
	2001-04	6,984 100%	651 9%	6,330 91%	8,508 100%	774 9%	7,734 91%

		Males			Females		
		Total	Not Linked	Linked	Total	Not Linked	Linked
Variable		N %	N %	N %	N %	N %	N %
Dec 9-10	1981-86	4,581 100%	618 13%	3,963 87%	4,974 100%	615 12%	4,356 88%
(Most Deprived)	1986-91	5,100 100%	507 10%	4,590 90%	6,426 100%	630 10%	5,796 90%
	1991-96	6,168 100%	558 9%	5,613 91%	7,329 100%	618 8%	6,711 92%
	1996-01	7,128 100%	705 10%	6,423 90%	8,835 100%	825 9%	8,010 91%
	2001-04	5,820 100%	573 10%	5,247 90%	7,455 100%	684 9%	6,771 91%

1.10 Calculating linkage bias weights

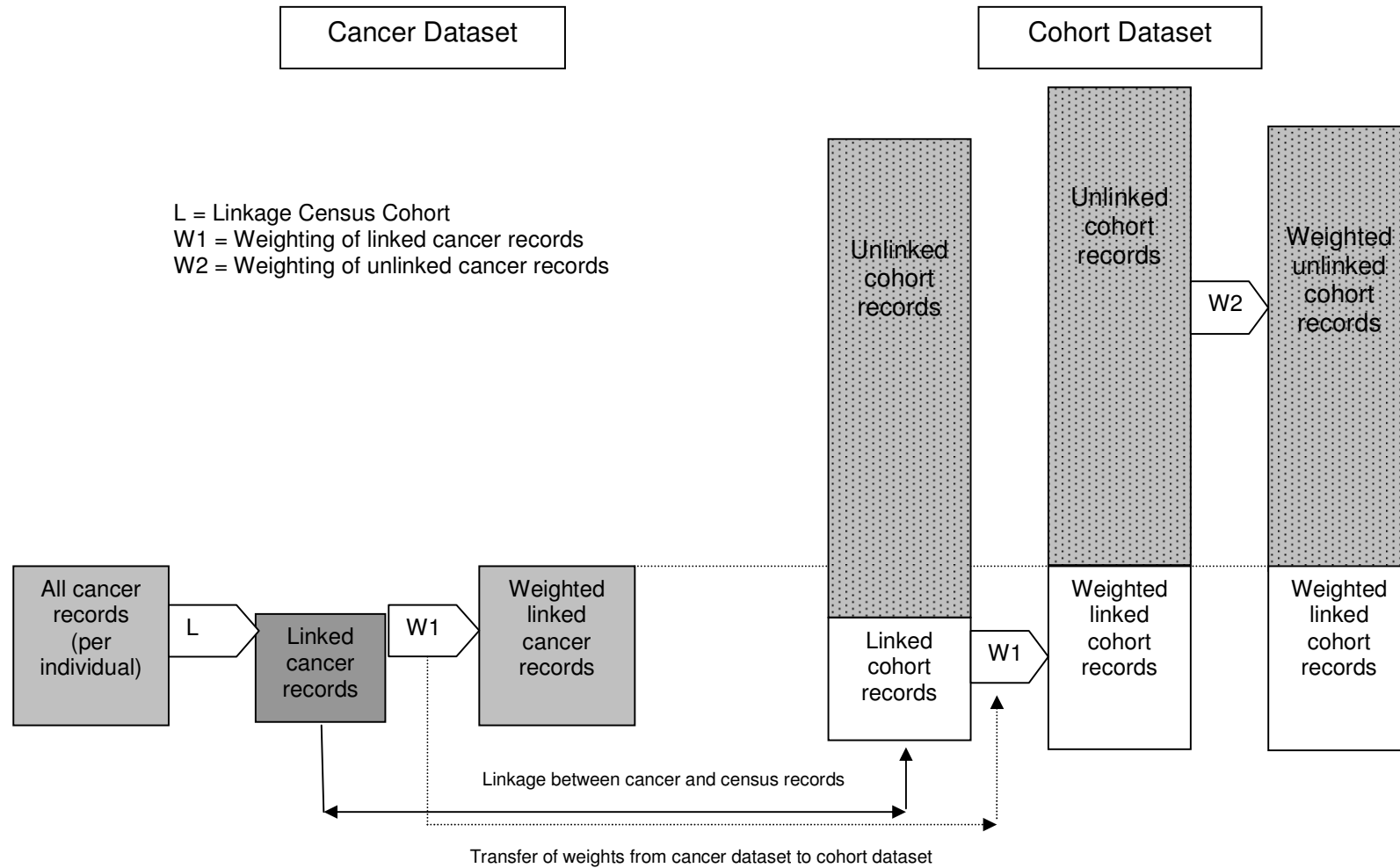
1.10.1 Summary

The method for weighting the cohorts up to adjust for misclassification bias is conceptually similar to methods used previously in the NZCMS (Fawcett, Blakely et al. 2002; Fawcett, Atkinson et al. 2008). There is a two step process:

- Weights are applied to linked cancer records to weight them up to the total number of cancer records (linked and unlinked) to 'adjust' for the records that were not able to be linked. These weights are created within sociodemographic strata that predict the probability of linkage. (i.e. weights are not uniformly applied but are based on the likelihood of linkage within those strata)
- The remainder of the unlinked records in the cohort are weighted down very slightly to adjust for non-linkage of some of the cancer records.

This process is diagrammatically illustrated in Figure 3.

Figure 3 Weighting of cohorts to adjust for linkage bias



1.10.2 Weighting the linked cancer records

- The bias linkage strata needed 0-14 and 15-24 combined to obtain sufficient numbers for low influence weights or strata with linkages. This meant that the overall weighted links for 0 – 24 years reflect very closely the actual eligible records (overall and by ethnicity), however there are some discrepancies when this is broken down into the separate age groupings. Note – If doing lots of analyses of those less than 25 years of age, it may be necessary to produce some new weights for this group.
- 15 -24 year olds reasonably agree for Total Maori, Total Pacific and Total Asian but undercount the number of nonMPA and therefore over all ethnicity values.
- Both sexes combined, all ages have been weighted up exactly (within random rounding) to the eligible links but by Total Ethnicity on cancer registry, the weighted numbers are slightly smaller for 1986-91 for Maori, Pacific and Asian, and slightly higher for nonMPA (Other years are not as bad). 1996-01 and 2001-04 Total Maori weighted values agree with their originals.
- 0 – 24 years eligibles and weighted links agree closely for both sexes and by all Total Ethnicities.
- 25 – 44 years both sexes give slightly under estimates of nonMPA (early cohorts) and All ethnicities as the groups for the strata were 25-29, 30-39 and 40-49, hence the 45-49 age group were put in with these weights. (Breakdown of other ethnicities are fine except that 1981-06 Total Maori is slightly undercounted.)
- 25 – 74 years both sexes includes the 75-79 group. (The age groups in this band were 25-29, 30-39, 40-49, 50-59, 60-69, 70-79). Slight underestimates for All Ethnicities for 1981-86 and 1991-96, and nonMPA for 1981-86.
- 45 – 64 years both sexes has age overlaps at both ends. The groups were 40-49 , 50-59 and 60-69, hence it includes 40-44 years and 65-69 years, giving underestimates of All Ethnicities and nonMPA for most cohorts, and Total Maori for 1986-91.
- 65 - 74 years has overlaps on both ends (groups were 60-69 and 70-79 and hence includes 60-64 and 75-79) which gives just slight overestimates of All Ethnicities and nonMPA.

- 75+ years had groups 70-79 and ≥ 80 , hence includes 70-74 years. This gives underestimates for All Ethnicities for 1986-91 and 2001-04, Total Maori for 1981-96 and 1986-91, and slight underestimate for Total Pacific for 2001-04.
- 75 – 84 years has overlaps at both ends (groups were 70-79 and ≥ 80) and hence includes 70-74 and ≥ 85 . Gives overestimates for All Ethnicities and nonMPA and slight undercount for Total Pacific.
- 85+ years had the group ≥ 80 , hence undercounts All Ethnicities and nonMPA.

Table 42 Number of individuals eligible to be linked, those linked and the weighted number with cancer by total ethnicity for both sexes, age group and cohort (all variable classifications using cancer registry classifications)

Total Ethnicity on Cancer Reg	1981-86			1986-91			1991-96			1996-01			2001-04		
	Eligible to link i.e. number with cancer	Number actual links	Weighted number with cancer	Eligible to link i.e. number with cancer	Number actual links	Weighted number with cancer	Eligible to link i.e. number with cancer	Number actual links	Weighted number with cancer	Eligible to link i.e. number with cancer	Number actual links	Weighted number with cancer	Eligible to link i.e. number with cancer	Number actual links	Weighted number with cancer
	<i>Both Sexes All Ages</i>														
All Ethnicities	52,698	38,562	52,698	63,627	49,023	63,627	77,157	61,104	77,157	96,441	76,893	96,444	83,790	68,433	83,787
Total NZ Māori	2,646	1,743	2,634	3,627	2,604	3,597	4,707	3,630	4,734	6,723	5,175	6,723	6,027	4,896	6,030
Total Pacific	600	423	585	1,122	795	1,110	1,338	960	1,314	2,094	1,605	2,079	2,004	1,581	1,983
Total Asian	15	9	12	192	117	171	552	360	537	1,518	1,068	1,503	1,986	1,455	1,968
nonMPA	49,497	36,438	49,539	58,746	45,549	58,812	69,540	55,419	69,606	78,093	63,021	78,771	70,131	57,867	70,569
Missing	9	6	9	12	9	12	1,095	798	1,047	6,705	5,250	6,378	2,856	2,181	2,694
<i>Both Sexes 0-14 years</i>															
All Ethnicities	600	411	669	699	477	798	696	477	819	795	564	897	546	408	618
Total NZ Māori	84	57	81	93	81	108	102	75	102	135	108	144	105	81	108
Total Pacific	36	33	36	60	51	63	51	42	51	75	57	69	48	39	48
Total Asian	6	6	6	6	6	9	30	21	30	45	36	48	39	30	39
nonMPA	480	321	555	534	336	615	501	336	630	525	354	618	378	279	444
Missing	.	.	.	.	.	.	9	6	9	30	18	33	6	6	6
<i>Both Sexes 0-24 years</i>															
All Ethnicities	2,331	1,407	2,331	3,333	1,890	3,336	3,972	2,280	3,969	5,193	3,102	5,196	3,957	2,604	3,960
Total NZ Māori	273	207	279	387	288	390	492	369	495	783	582	789	639	480	642
Total Pacific	78	69	78	135	105	135	153	123	150	177	138	174	135	105	135
Total Asian	6	6	6	21	9	21	54	39	54	129	93	132	126	93	129
nonMPA	1,986	1,134	1,986	2,796	1,488	2,793	3,237	1,740	3,246	3,915	2,199	3,927	3,072	1,968	3,102
Missing	.	.	.	.	.	.	33	12	27	195	114	192	81	45	72
<i>Both Sexes 15-24 years</i>															
All Ethnicities	1,731	996	1,662	2,634	1,416	2,541	3,273	1,803	3,150	4,398	2,538	4,299	3,414	2,199	3,342
Total NZ Māori	189	150	198	294	207	282	393	294	390	648	471	642	537	399	534
Total Pacific	45	39	42	75	54	69	102	81	99	99	84	108	84	66	84
Total Asian	.	.	.	12	6	12	24	18	24	81	57	81	84	63	87
nonMPA	1,506	813	1,431	2,262	1,152	2,181	2,736	1,404	2,613	3,393	1,845	3,309	2,697	1,689	2,655
Missing	.	.	.	.	.	.	24	6	21	168	93	159	75	39	69
<i>Both Sexes 25-44 years</i>															
All Ethnicities	8,001	5,388	7,956	10,884	7,506	10,830	11,682	8,040	11,631	15,294	10,599	15,267	12,855	9,648	12,804

Total Ethnicity on Cancer Reg	1981-86			1986-91			1991-96			1996-01			2001-04		
	Eligible to link i.e. number with cancer	Number actual links	Weighted number with cancer	Eligible to link i.e. number with cancer	Number actual links	Weighted number with cancer	Eligible to link i.e. number with cancer	Number actual links	Weighted number with cancer	Eligible to link i.e. number with cancer	Number actual links	Weighted number with cancer	Eligible to link i.e. number with cancer	Number actual links	Weighted number with cancer
Total NZ Māori	684	474	663	1,074	813	1,077	1,371	1,086	1,371	1,986	1,539	1,977	1,599	1,284	1,599
Total Pacific	195	156	201	345	279	348	354	276	354	537	447	537	459	390	459
Total Asian	6	6	6	51	27	42	162	111	156	498	366	495	618	453	618
nonMPA	7,134	4,764	7,107	9,423	6,390	9,369	9,645	6,486	9,618	11,127	7,566	11,262	9,795	7,305	9,807
Missing	6	6	6	6	6	6	168	93	150	933	609	873	378	246	339
<i>Both Sexes 25-74 years</i>															
All Ethnicities	41,043	30,132	41,010	48,339	37,308	48,363	57,105	44,850	57,072	72,150	56,910	72,156	61,575	49,932	61,596
Total NZ Māori	2,238	1,476	2,247	3,066	2,220	3,066	3,936	3,063	3,957	5,571	4,311	5,568	5,004	4,104	5,010
Total Pacific	495	342	495	924	660	924	1,122	801	1,107	1,752	1,350	1,746	1,656	1,329	1,671
Total Asian	15	9	9	156	99	135	450	285	438	1,251	882	1,245	1,713	1,251	1,695
nonMPA	38,346	28,347	38,313	44,253	34,371	44,289	50,721	40,068	50,733	56,694	45,243	57,294	49,947	40,893	50,307
Missing	9	6	9	12	9	9	936	687	906	5,619	4,356	5,322	2,433	1,857	2,301
<i>Both Sexes 45-64 years</i>															
All Ethnicities	19,071	13,986	19,005	21,633	16,578	21,510	25,263	19,524	25,062	31,935	24,771	31,815	28,656	23,229	28,677
Total NZ Māori	1,146	786	1,203	1,482	1,056	1,461	1,872	1,461	1,884	2,556	1,968	2,553	2,367	1,953	2,379
Total Pacific	231	144	225	429	294	429	540	378	534	813	618	801	774	621	780
Total Asian	9	6	6	78	54	75	207	126	204	537	372	534	792	600	786
nonMPA	17,712	13,077	17,604	19,683	15,201	19,578	22,176	17,214	21,981	24,300	19,023	24,468	22,722	18,582	22,920
Missing	6	6	6	6	6	6	507	378	507	2,925	2,265	2,781	1,449	1,116	1,377
<i>Both Sexes 65-74 years</i>															
All Ethnicities	13,971	10,761	14,052	15,822	13,224	16,020	20,163	17,289	20,382	24,924	21,537	25,074	20,061	17,055	20,115
Total NZ Māori	405	213	381	510	351	522	696	516	699	1,029	804	1,038	1,038	864	1,032
Total Pacific	66	45	72	150	87	144	225	144	222	399	285	408	423	318	426
Total Asian	6	.	.	30	15	18	81	48	78	216	147	216	303	198	291
nonMPA	13,497	10,509	13,605	15,147	12,777	15,342	18,906	16,365	19,137	21,270	18,654	21,561	17,430	15,006	17,583
Missing	6	6	6	6	6	6	264	213	252	1,758	1,479	1,668	606	492	582
<i>Both Sexes 75+ years</i>															
All Ethnicities	9,327	7,023	9,357	11,952	9,819	11,928	16,083	13,974	16,116	19,098	16,875	19,089	18,258	15,894	18,237
Total NZ Māori	135	60	105	177	93	141	276	198	282	363	285	369	384	312	378
Total Pacific	27	9	12	60	27	51	63	36	54	165	114	156	216	144	180
Total Asian	.	.	.	21	12	15	48	33	45	141	93	126	150	108	147
nonMPA	9,165	6,954	9,237	11,700	9,687	11,724	15,582	13,611	15,627	17,484	15,576	17,550	17,106	15,006	17,163
Missing	.	.	.	6	6	6	120	102	114	888	780	864	345	279	324
<i>Both Sexes 75-84 years</i>															
All Ethnicities	7,761	6,012	7,944	9,984	8,325	10,065	13,170	11,562	13,314	15,483	13,758	15,570	14,466	12,618	14,511
Total NZ Māori	123	54	99	162	87	132	246	183	261	324	261	339	339	273	330
Total Pacific	24	9	12	57	27	48	57	33	48	147	102	144	192	129	165
Total Asian	.	.	.	12	6	6	45	30	42	114	75	108	123	93	132
nonMPA	7,614	5,952	7,833	9,753	8,208	9,879	12,717	11,232	12,864	14,094	12,630	14,226	13,449	11,829	13,554
Missing	.	.	.	.	.	.	108	90	102	756	666	735	303	246	285
<i>Both Sexes 85+ years</i>															
All Ethnicities	1,566	1,011	1,413	1,971	1,494	1,860	2,916	2,412	2,805	3,615	3,120	3,522	3,792	3,276	3,723
Total NZ Māori	15	6	6	12	6	6	30	15	21	39	24	33	42	39	48
Total Pacific	6	6	6	6	6	6	6	6	6	18	12	12	24	12	15
Total Asian	.	.	.	6	6	6	6	6	6	24	15	18	24	12	18
nonMPA	1,551	1,005	1,404	1,944	1,482	1,845	2,865	2,379	2,763	3,390	2,946	3,321	3,657	3,174	3,606
Missing	.	.	.	6	6	6	12	9	12	135	114	129	39	33	36

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Appendix 1. Cohort Dataset variables and formats

Table 43 Description of the main variables in the cohort datasets 1981, 1986, 1991, 1996, and 2001

Variable Name	Format 1981	Format 1986	Format 1991	Format 1996	Format 2001	Variable Label
AbsentFlg	FABS.	FABS.	FABS.	FABS.	FABS.	Absentee Indicator
AgeCan1_Mth	[num 8]	[num 8]	[num 8]	[num 8]	[num 8]	Age in Months at Diagnosis of Cancer 1
AgeCan2_Mth	[num 8]	[num 8]	[num 8]	[num 8]	[num 8]	Age in Months at Diagnosis of Cancer 2
AgeCan3_Mth	[num 8]	[num 8]	[num 8]	[num 8]	[num 8]	Age in Months at Diagnosis of Cancer 3
AgeCan4_Mth	[num 8]	[num 8]	[num 8]	[num 8]	[num 8]	Age in Months at Diagnosis of Cancer 4
AgeC_5yrs	[num 3]	[num 3]	[num 3]	[num 3]	[num 3]	Age at Census (5 year groupings)
AgeC_Mths	[num 8]	[num 8]	[num 8]	[num 8]	[num 8]	Age in Months at Census from Census DOB
AgeC_ysrs	[num 8]	[num 8]	[num 8]	[num 8]	[num 8]	Age at Census as taken from Census dataset
AgeDth_Mth	[num 8]	[num 8]	[num 8]	[num 8]	[num 8]	Age in Months at Death
AllExp	[num 3]	[num 3]	[num 3]	[num 3]	[num 3]	All Exposure
BabyBrn	FBBRN.	-	-	FBBRN.	-	Number of Live Babies Given Birth To
BabyBrn_orig	[num 3]	-	-	-	-	Number of Live Babies Given Birth To (Original)
CarAccess	FCAR.	FCAR.	FCAR.	FCAR.	FCAR.	Car Access (3 levels)
CenYear	FCYEAR.	FCYEAR.	FCYEAR.	FCYEAR.	FCYEAR.	Year of Census
ChangedAU01	FAU5YR.	FAU5YR.	FAU5YR.	FAU5YR.	FAU5YR.	Changed Area Unit from 5 years ago (base 2001)
ChangedAU96	-	-	-	FAU5YR.	-	Changed Area Unit from 5 years ago (base 1996)
ChildDep	-	-	-	FCHDDEP.	FCHDDEP.	Child Dependency Status Indicator
ChildMorphGp1	FCHILDC.	FCHILDC.	FCHILDC.	FCHILDC.	FCHILDC.	Child (<15 yrs) Cancer Grouping 1
ChildMorphGp2	FCHILDC.	FCHILDC.	FCHILDC.	FCHILDC.	FCHILDC.	Child (<15 yrs) Cancer Grouping 2
CPIEqIncJen1	[num 8]	[num 8]	[num 8]	[num 8]	[num 8]	Inflation Adjusted Equivalised HH Income (Jensen)(Imputation1)
CPIEqIncJen2	[num 8]	[num 8]	[num 8]	[num 8]	[num 8]	Inflation Adjusted Equivalised HH Income (Jensen)(Imputation2)
CPIEqIncJen3	[num 8]	[num 8]	[num 8]	[num 8]	[num 8]	Inflation Adjusted Equivalised HH Income (Jensen)(Imputation3)
CtryBrth	FCOB.	FCOB.	FCOB.	FCOB.	FCOB.	Country of Birth
EdLAllCur	FATLEV.	-	-	-	-	Current Education Attendance Level
EdLAllHgh	FEDATT.	-	-	-	-	Highest Level of Education Attendance
EdLAllPst	FATLEV.	-	-	-	-	Past Education Attendance Level
EdLSchHgh	FSCAT.	-	-	-	-	School Attendance Level
EdQAllHgh	-	F86HQAL.	F91HQ.	[num 3]	F01HQAL.	Highest Qualification Gained (SNZ Protocol) [Not Final Version]; Highest Qualification Obtained; Highest Qualification Obtained; Derived Highest Qualification Obtained
EdQAll_A	F81QUAL.	-	-	-	-	First Grouped Qualification Gained
EdQAll_B	F81QUAL.	-	-	-	-	Second Grouped Qualification Gained
EdQAll_C	F81QUAL.	-	-	-	-	Third Grouped Qualification Gained
EdQAll_D	F81QUAL.	-	-	-	-	Fourth Grouped Qualification Gained
EdQSchHgh	F81SQL.	F86SQL.	F91SQL.	[num 3]	F01SQL.	Highest School Qualification
EdQTerHgh	-	F86TQL.	-	-	-	Tertiary Qualification Gained
EdQTer_A	-	F86TQ.	F91TQA.	F96TQL.	F01TER.	Tertiary Qual Gained, Group A; Tertiary Qual A Attainment Level; Tertiary Qual A Attainment Level
EdQTer_B	-	F86TQ.	F91TQB.	F96TQL.	-	Tertiary Qual Gained, Group B; Tertiary Qual B Attainment Level
EdQTer_C	-	F86TQ.	F91TQC.	-	-	Tertiary Qual Gained, Group C

Variable Name	Format 1981	Format 1986	Format 1991	Format 1996	Format 2001	Variable Label
EdQTer_D	-	-	F91TQD.	-	-	Tertiary Qual Gained, Group D
EdQTer_E	-	-	F91TQE.	-	-	Tertiary Qual Gained, Group E
EmpSt	F81EMP.	F86EMP.	FEMPSP.	F96EMP.	F01EMP.	Employment Status
EthCenPr3	F4ETH.	F4ETH.	F4ETH.	F4ETH.	F4ETH.	Prioritised Ethnicity (3 levels)
EthCenPr3_I1	F4ETH.	F4ETH.	F4ETH.	F4ETH.	F4ETH.	Prioritised Ethnicity (Imputation1)
EthCenPr3_I2	F4ETH.	F4ETH.	F4ETH.	F4ETH.	F4ETH.	Prioritised Ethnicity (Imputation2)
EthCenPr3_I3	F4ETH.	F4ETH.	F4ETH.	F4ETH.	F4ETH.	Prioritised Ethnicity (Imputation3)
EthCenPr4	F4ETH.	F4ETH.	F4ETH.	F4ETH.	F4ETH.	Prioritised Ethnicity (4 levels)
EthCenSol3	F4ETH.	F4ETH.	F4ETH.	F4ETH.	F4ETH.	Sole Ethnicity (3 levels)
EthCenSol3_I1	F4ETH.	F4ETH.	F4ETH.	F4ETH.	F4ETH.	Sole Ethnicity (Imputation1)
EthCenSol3_I2	F4ETH.	F4ETH.	F4ETH.	F4ETH.	F4ETH.	Sole Ethnicity (Imputation2)
EthCenSol3_I3	F4ETH.	F4ETH.	F4ETH.	F4ETH.	F4ETH.	Sole Ethnicity (Imputation3)
EthCenSol4	F4ETH.	F4ETH.	F4ETH.	F4ETH.	F4ETH.	Sole Ethnicity (4 levels)
EthCombiSmallStatus	[\$1]	[\$1]	[\$1]	[\$1]	[\$1]	Ethnicity Code Imputation Status
EthDet1	FDETETH.	FDETETH.	FDETETH.	FDETETH.	FDETETH.	Ethnicity Detailed 1
EthDet2	FDETETH.	FDETETH.	FDETETH.	FDETETH.	FDETETH.	Ethnicity Detailed 2
EthDet3	FDETETH.	FDETETH.	FDETETH.	FDETETH.	FDETETH.	Ethnicity Detailed 3
EthDet4	-	-	-	-	FDETETH.	Ethnicity Detailed 4
EthDet5	-	-	-	-	FDETETH.	Ethnicity Detailed 5
EthDet6	-	-	-	-	FDETETH.	Ethnicity Detailed 6
FamilyInd	-	-	F91FAMI.	-	-	Family Indicator [On Individual Dataset]
FirstCancer	[num 3]	[num 3]	[num 3]	[num 3]	[num 3]	First Cancer
F_FamGroup	F91FAMG.	F91FAMG.	F91FAMG.	-	F01FAMG.	Identification of Individual's Family Nucleus
F_FamilyInd	-	-	F91FAMI.	F96FAMI.	-	Family Indicator [On Family Dataset]; Family Indicator
F_FamType	-	-	F91FAMT.	F96FAMT.	F01FAMT.	Family Type
F_NumInFam	-	-	-	[num 3]	[num 3]	Number of People in Family (incl. abs, excl visitors)
F_RoleFam	F81ROLF.	-	-	FROLEF.	-	Role within Family
G_AHB	F89AHB.	F89AHB.	F89AHB.	F89AHB.	F89AHB.	Area Health Board 1989 (base 2001)
G_AHD	F93AHD.	F93AHD.	F93AHD.	F93AHD.	F93AHD.	Area Health District 1993 (base 2001)
G_DHB	F01DHB.	F01DHB.	F01DHB.	F01DHB.	F01DHB.	District Health Board (base 2001)
G_RC	FREGCO.	FREGCO.	FREGCO.	FREGCO.	FREGCO.	Regional Council (base 2001)
G_RC91	-	-	FREGCO.	-	-	Regional Council (base 1991)
G_RC96	-	-	-	FREGCO.	-	Regional Council (base 1996)
G_RHA	FRHA.	FRHA.	FRHA.	FRHA.	FRHA.	Regional Health Authority (1989 AHB) (base 2001)
G_Rurality	-	-	-	-	F6RUR.	Rurality Indicator (base 2001)
G_Rurality01	F6RUR.	F6RUR.	F6RUR.	F6RUR.	-	Rurality Indicator (base 2001)
G_Rurality81	F6RUR.	-	-	-	-	Rurality Indicator (base 1981)
G_Rurality86	-	F6RUR.	-	-	-	Rurality Indicator (base 1986)
G_Rurality91	-	-	F6RUR.	-	-	Rurality Indicator (base 1991)
G_Rurality96	-	-	-	F6RUR.	-	Rurality Indicator (base 1996)
G_TA	F95TLA.	F95TLA.	F95TLA.	F95TLA.	F95TLA.	Territorial Authority (base 2001)
G_TA81	F95TLA.	-	-	-	-	Territorial Authority (base 1981)
G_TA91	-	-	F95TLA.	-	-	Territorial Authority (base 1991)
G_TA96	-	-	-	F95TLA.	-	Territorial Authority (base 1996)
G_TA_5yrs	-	-	-	-	F95TLA.	Territorial Authority 5 years ago (base 2001)
HQual3_I1	FHQUAL.	FHQUAL.	FHQUAL.	FHQUAL.	FHQUAL.	Highest Qualification Gained 3 level (Imputation1)
HQual3_I2	FHQUAL.	FHQUAL.	FHQUAL.	FHQUAL.	FHQUAL.	Highest Qualification Gained 3 level (Imputation2)

Variable Name	Format 1981	Format 1986	Format 1991	Format 1996	Format 2001	Variable Label
HQual3_I3	FHQUAL.	FHQUAL.	FHQUAL.	FHQUAL.	FHQUAL.	Highest Qualification Gained 3 level (Imputation3)
HQual5_I1	FHQUAL.	FHQUAL.	FHQUAL.	FHQUAL.	FHQUAL.	Highest Qualification Gained 5 level (Imputation1)
HQual5_I2	FHQUAL.	FHQUAL.	FHQUAL.	FHQUAL.	FHQUAL.	Highest Qualification Gained 5 level (Imputation2)
HQual5_I3	FHQUAL.	FHQUAL.	FHQUAL.	FHQUAL.	FHQUAL.	Highest Qualification Gained 5 level (Imputation3)
HrsWk	F01HWK.	F01HWK.	F01HWK.	F01HWK.	F01HWK.	Total Number of Hours Worked per week
H_AbsFlg	-	-	-	-	FHABSF.	Absentees in Household Flag
H_BCars	F8NUM.	-	-	-	-	Number of Business Cars in H/H
H_Bdrms	F20NUM.	F8NUM.	F8NUM.	F10NUM.	F14NUM.	Number of Bedrooms
H_DepStat	-	-	-	-	FDEPHH.	Child Dependency Status of Household
H_Dummy	-	-	-	-	F01HDUM.	Dummy Dwelling Form Indicator
H_DwgNat	-	F91DNAT.	F91DNAT.	-	-	Nature of Dwelling [On Individual Dataset]
H_DwgTp	F96DTYP.	F96DTYP.	F96DTYP.	F96DTYP.	F96DTYP.	Dwelling Record Type
H_DwgTpG	F81DTPE.	F91DTPE.	F91DTPE.	F01DTPE.	F01DTPE.	Dwelling Type (Detailed)
H_Internet	-	-	-	-	F01TEL.	Access to Internet in Dwelling
H_Landlord	F81LAND.	-	-	-	-	Category of Landlord
H_MotorBike	F8NUM.	-	-	-	-	Number of Motorbikes in H/H
H_Mveh	F8NUM.	F5NUM.	F8NUM.	F3NUM.	F3NUM.	Number of Private Cars in H/H; Number of Motor Vehicles in H/H; Number of Motor Vehicles in H/H; Number of Motor Vehicles in H/H
H_NAbCh	F9NUM.	F5NUM.	-	-	-	Number of Children Absent in H/H
H_NAbTot	F9NUM.	F5NUM.	-	-	-	Total Number of Absentees in H/H
H_NOccy	-	F81OCC.	F91OCC.	F96OCC.	F01LLD.	Nature of Occupancy; Nature of Occupancy (Sector of Landlord)
H_NoTelecom	-	-	-	-	F01TEL.	No Access to Telecomms in Dwelling
H_OwnDwell	-	-	-	-	F01DWO.	Ownership of Dwelling
H_PBike	F8NUM.	-	-	-	-	Number of Pushbikes in H/H
H_Teleph	FTELE.	-	-	FTELE.	F01TEL.	Telephone in Dwelling
H_Tenure	F81TENR.	-	-	F96TENR.	F96TENR.	Tenure of Household
H_THInc	F81INC.	F86INC.	F91INC.	F96INC.	F96INC.	Total Household Income
H_Type	F81HHT.	-	-	-	-	Household Type
H_UsHHC	F81UHC.	F81UHC.	F01HHC.	F01HHC.	F01HHC.	Usual Household Composition
ICDBasis1	FBASD.	FBASD.	FBASD.	FBASD.	FBASD.	Basis of Disease Classification C1
ICDBasis2	FBASD.	FBASD.	FBASD.	FBASD.	FBASD.	Basis of Disease Classification C2
ICDBasis3	FBASD.	FBASD.	FBASD.	FBASD.	FBASD.	Basis of Disease Classification C3
ICDBasis4	FBASD.	FBASD.	FBASD.	FBASD.	FBASD.	Basis of Disease Classification C4
ICDExtent1	FEXTNT.	FEXTNT.	FEXTNT.	FEXTNT.	FEXTNT.	Extent of Disease C1
ICDExtent2	FEXTNT.	FEXTNT.	FEXTNT.	FEXTNT.	FEXTNT.	Extent of Disease C2
ICDExtent3	FEXTNT.	FEXTNT.	FEXTNT.	FEXTNT.	FEXTNT.	Extent of Disease C3
ICDExtent4	FEXTNT.	FEXTNT.	FEXTNT.	FEXTNT.	FEXTNT.	Extent of Disease C4
ICDGroup1	\$FCANS.	\$FCANS.	\$FCANS.	\$FCANS.	\$FCANS.	Cancer 1 ICD Grouping
ICDGroup2	\$FCANS.	\$FCANS.	\$FCANS.	\$FCANS.	\$FCANS.	Cancer 2 ICD Grouping
ICDGroup3	\$FCANS.	\$FCANS.	\$FCANS.	\$FCANS.	\$FCANS.	Cancer 3 ICD Grouping
ICDGroup4	\$FCANS.	\$FCANS.	\$FCANS.	\$FCANS.	\$FCANS.	Cancer 4 ICD Grouping
ICDMorph1	[\$5]	[\$5]	[\$5]	[\$5]	[\$5]	Morphology C1 (if relevant)
ICDMorph2	[\$5]	[\$5]	[\$5]	[\$5]	[\$5]	Morphology C2 (if relevant)
ICDMorph3	[\$5]	[\$5]	[\$5]	[\$5]	[\$5]	Morphology C3 (if relevant)
ICDMorph4	[\$5]	[\$5]	[\$5]	[\$5]	[\$5]	Morphology C4 (if relevant)
ID_Cohort	[\$8]	[\$8]	[\$8]	[\$8]	[\$8]	Unique Cohort Id
ID_Dwell	[\$8]	[\$8]	[\$8]	[\$8]	[\$8]	Unique Dwelling Id
Imp	-	-	F91HIMP.	-	-	Imputation Indicator

Variable Name	Format 1981	Format 1986	Format 1991	Format 1996	Format 2001	Variable Label
ImpAge	[num 8]	-	-	F96IAGE.	-	Age Imputation Indicator
ImpAgeStr	-	-	-	-	\$F01IAGE.	Age Imputation Indicator
ImpForm	-	-	-	F01IDUM.	F01IDUM.	Form Imputed Indicator (Dummy Form)
ImpMonth	FIMPMTH.	FIMPMTH.	FIMPMTH.	FIMPMTH.	FIMPMTH.	Age in Months Imputation Indicator
ImpSex	[num 8]	-	-	-	-	Sex Imputation Indicator
Income3_I1	F3EINC.	F3EINC.	F3EINC.	F3EINC.	F3EINC.	Income 3 levels (Imputation1)
Income3_I2	F3EINC.	F3EINC.	F3EINC.	F3EINC.	F3EINC.	Income 3 levels (Imputation2)
Income3_I3	F3EINC.	F3EINC.	F3EINC.	F3EINC.	F3EINC.	Income 3 levels (Imputation3)
Income5_I1	F5EINC.	F5EINC.	F5EINC.	F5EINC.	F5EINC.	Income 5 levels (Imputation1)
Income5_I2	F5EINC.	F5EINC.	F5EINC.	F5EINC.	F5EINC.	Income 5 levels (Imputation2)
Income5_I3	F5EINC.	F5EINC.	F5EINC.	F5EINC.	F5EINC.	Income 5 levels (Imputation3)
IndAnz3	-	-	-	\$ANZ2LEV.	\$ANZ2LEV.	Industry ANZSIC96 - Level 2 Sub-Division
Industry	F2IND.	F2IND.	F2IND.	F2IND.	-	Industry 2 Digit Code
I_IncSuppNum	-	-	-	F6NUM.	-	Number of Pers. Inc. Support Srces Specified excl ACC/GRI
I_NoSource	-	-	-	-	FINCS.	Personal Inc. Srce -No Source of Income
I_PIS_1	-	-	F1PIS.	-	-	Personal Inc. Srce 1 -Fam Ben/Support
I_PIS_2	-	-	F2PIS.	-	-	Personal Inc. Srce 2 -Super/ACC
I_PIS_3	-	-	F3PIS.	-	-	Personal Inc. Srce 3 -DPB/Unemploy
I_PIS_4	-	-	F4PIS.	-	-	Personal Inc. Srce 4 -Stud/Sick/Invalid
I_PIS_5	-	-	F5PIS.	-	-	Personal Inc. Srce 5 -War/Other Support
I_PIS_6	-	-	F6PIS.	-	-	Personal Inc. Srce 6 -Other Groups
I_PIS_AC	-	-	-	FINCS.	FINCS.	Personal Inc. Srce -ACC Regular Payments
I_PIS_DP	F86INCS.	F86INCS.	-	FINCS.	FINCS.	Personal Inc. Srce -Domestic Purposes Benefit
I_PIS_DP_orig	-	-	-	-	FINCS.	Personal Inc. Srce -Domestic Purposes Benefit (original)
I_PIS_FB	F86INCS.	F86INCS.	-	-	-	Personal Inc. Srce -Family Benefit
I_PIS_FC	-	F86INCS.	-	-	-	Personal Inc. Srce -Family Care
I_PIS_GB	-	-	-	FINCS.	FINCS.	Personal Inc. Srce -Other Government Benefits
I_PIS_IB	F86INCS.	-	-	FINCS.	FINCS.	Personal Inc. Srce -Invalids Benefit
I_PIS_None	F86INCS.	F86INCS.	-	-	-	Personal Inc. Srce -No Social Welfare Payments
I_PIS_SB	F86INCS.	-	-	FINCS.	FINCS.	Personal Inc. Srce -Sickness Benefit
I_PIS_SBIB	-	F86INCS.	-	-	-	Personal Inc. Srce -Sickness/Invalids Benefit
I_PIS_SE	-	-	-	FINCS.	FINCS.	Personal Inc. Srce -Self-employment
I_PIS_UB	F86INCS.	F86INCS.	-	FINCS.	FINCS.	Personal Inc. Srce -Unemployment Benefit
I_PIS_WS	-	-	-	FINCS.	FINCS.	Personal Inc. Srce -Wages/Salary etc.
I_TInc	F81INC.	F86INC.	F91INC.	F96INC.	F96INC.	Total Personal Income
JobInd	-	-	F91JOBI.	-	-	Job Indicator
LabSt	-	F86LFS.	F91LFS.	F96LFS.	F96LFS.	Labour Force Status
LabSt3	FEMPLOY.	FEMPLOY.	FEMPLOY.	FEMPLOY.	FEMPLOY.	Labour Force Status (3 levels)
LabSt81	[num 8]	-	-	-	-	Labour Force Status (1981 version)
LangInd	-	-	-	F96LANG.	F01LANG.	Official Language Indicator
Link	FLINK.	FLINK.	FLINK.	FLINK.	FLINK.	Matched
LinkStat	\$FLKST.	\$FLKST.	\$FLKST.	\$FLKST.	\$FLKST.	Linkage Status (Detailed)
MaoriAnc	-	-	F91MAOR.	F96MAOR.	-	Maori Ancestry Indicator
MaoriDes	F81MAOR.	-	-	-	F01MAOR.	Maori Descent Indicator
MarSt	F81MARR.	F86MARR.	F86MARR.	-	-	Marital Status
MarSt3	F4MARR.	F4MARR.	F4MARR.	F4MARR.	F4MARR.	Marital Status (3 levels)
MarSt_L	-	-	-	F96MARL.	F96MARL.	Marital Status (Legal)
MarSt_orig	[num 3]	[num 3]	[num 3]	-	-	Marital Status (Original)
MarSt_S	-	-	-	F96MARS.	F01MARS.	Marital Status (Social)
Mar_DeFact	F86MARD.	F86MARD.	-	-	-	De Facto Relationship Status
MBAU	[\$2]	-	-	-	-	Linked at Meshblock or AreaUnit Indicator

Variable Name	Format 1981	Format 1986	Format 1991	Format 1996	Format 2001	Variable Label
NumDiffICD	[num 8]	[num 8]	[num 8]	[num 8]	[num 8]	Number Different ICD Groupings
NumKidCancers	[num 3]	[num 3]	[num 3]	[num 3]	[num 3]	Number of Child Cancer Groupings
NumYthCancers	[num 3]	[num 3]	[num 3]	[num 3]	[num 3]	Number of Youth Cancer Groupings
NZDep2001	BEST.	BEST.	BEST.	BEST.	BEST.	NZ Deprivation 2001 scale MB2001 base
NZDep2001score_RND	[num 8]	[num 8]	[num 8]	[num 8]	[num 8]	Rounded NZ Deprivation 2001 score MB2001 base
NZDep5	FDQUIN.	FDQUIN.	FDQUIN.	FDQUIN.	FDQUIN.	NZ Deprivation Quintile
NZDep91	[num 3]	BEST.	BEST.	-	-	NZ Deprivation 1991 scale MB1991 base
NZDep91score_RND	-	-	[num 8]	-	-	Rounded NZ Deprivation 1991 score MB1991 base
NZDep96	-	-	-	[num 3]	-	NZ Deprivation 1996 scale MB96 base
NZDep96score_RND	-	-	-	[num 8]	-	Rounded NZ Deprivation 1996 score MB96 base
O_EGP	FEGP.	FEGP.	FEGP.	FEGP.	FEGP.	EGP; EGP 68 from NZSCO68 (but using NZSCO99)
O_ElleyIrv	FEI.	FEI.	FEI.	FEI.	FEI.	Elley-Irving Index; Elley-Irving 68 from NZSCO68 (but using NZSCO99)
O_FarmFlg	FFARMF.	FFARMF.	FFARMF.	FFARMF.	FFARMF.	Farmers Occupation Flag; Farmer's Occupational Flag from NZSCO68 (but using NZSCO99)
O_Occ2x	F2XOCC.	F2XOCC.	F2XOCC.	F2XOCC.	F01OCC.	Occupation Code - 2 Digits Occ68; Occupation Code - 2 Digits NZSCO99 V 1.0
O_SEI91c	-	-	-	-	FNSEI.	NZSEI 1991 class from NZSCO90 (but using NZSCO99)
O_SEI91v	-	-	F91SEI.	F91SEI.	F91SEI.	SEI 91 Values; NZSEI 1991 value from NZSCO90 (but using NZSCO99)
O_SEI96c	-	-	-	-	FNSEI.	NZSEI 1996 class from NZSCO95 (but using NZSCO99)
O_SEI96v	-	-	-	F96SEI.	F96SEI.	SEI 96 Values; NZSEI 1996 value from NZSCO95 (but using NZSCO99)
PerType	FPRECT.	FPRECT.	FPRECT.	FPRECT.	FPRECT.	Personal Record Type
PIncome3_I1	-	-	-	F3EINC.	F3EINC.	Personal Income 3 levels (Imputation1)
PIncome3_I2	-	-	-	F3EINC.	F3EINC.	Personal Income 3 levels (Imputation2)
PIncome3_I3	-	-	-	F3EINC.	F3EINC.	Personal Income 3 levels (Imputation3)
PrevCancerFlag	[num 3]	[num 3]	[num 3]	[num 3]	[num 3]	Previous Cancer in Earlier Cohort Flag (0/1)
Religion	F01REL.	F01REL.	F01REL.	F01REL.	-	Religious Affiliation - Major Groups
Religion1	-	-	-	-	F01REL.	Religious Affiliation 1 - Major Groups
Religion2	-	-	-	-	F01REL.	Religious Affiliation 2 - Major Groups
Religion3	-	-	-	-	F01REL.	Religious Affiliation 3 - Major Groups
Religion4	-	-	-	-	F01REL.	Religious Affiliation 4 - Major Groups
Sch3CombiStatus	[\$1]	[\$1]	[\$1]	[\$1]	[\$1]	Highest School Qualification Imputation Status
Sex	FVSEX.	FVSEX.	FVSEX.	FVSEX.	FVSEX.	Sex
SmkCur	FSMKC.	-	-	-	-	Current Smoking Status
SmkEver	-	-	-	FSMKE.	-	Ever Smoked
SmkQnt	FSMKQ.	-	-	-	-	Quantity of Cigarettes Smoked in a day (23/3/81)
SmkReg	-	-	-	FSMKR.	-	Smoking Regularly
SmkStat	-	-	-	FSMKS.	-	Smoking Status
StrataSAEVDR	[\$23]	[\$23]	[\$23]	[\$23]	[\$23]	Strata on cohort for sex(S), age(A), eth(E), rurality(V), dep(D), TA grouping(R)
Tenure_Holder	-	-	-	-	F01TENH.	Tenure Holder in Residence
Ter3CombiStatus	[\$1]	[\$1]	[\$1]	[\$1]	[\$1]	Highest Post-School Qualification Imputation Status
TotAsian_I1	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	Total Asian (Imputation1)
TotAsian_I2	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	Total Asian (Imputation2)

Variable Name	Format 1981	Format 1986	Format 1991	Format 1996	Format 2001	Variable Label
TotAsian_I3	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	Total Asian (Imputation3)
TotMaori_I1	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	Total Maori (Imputation1)
TotMaori_I2	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	Total Maori (Imputation2)
TotMaori_I3	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	Total Maori (Imputation3)
TotnonMPA_I1	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	Total nonMPA (Imputation1)
TotnonMPA_I2	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	Total nonMPA (Imputation2)
TotnonMPA_I3	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	Total nonMPA (Imputation3)
TotPacific_I1	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	Total Pacific (Imputation1)
TotPacific_I2	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	Total Pacific (Imputation2)
TotPacific_I3	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	FTOTETH.	Total Pacific (Imputation3)
TravToWrk	F81TRAV.	F86TRAV.	F91TRAV.	-	-	Means of Travel to Work
UR5yrsSumm	-	-	-	F01YRSM.	F01YRSM.	Usual Residence 5 Years Ago Summary
UsInd	F81USI.	FUSI.	FUSI.	FUSI.	F01USI.	Usual Residence Indicator
UsResident	[num 3]	[num 3]	[num 3]	[num 3]	FUSRES.	Non Absentee Usual Resident Flag
WorkSt3	FEMPLOY.	FEMPLOY.	FEMPLOY.	FEMPLOY.	FEMPLOY.	Work Status (3 levels)
WrkatHome	-	-	-	F01WKHM.	F01WKHM.	Work at Home Indicator
W_AgEthAdj	[num 8]	[num 8]	[num 8]	[num 8]	[num 8]	Weight to use on Cohort to adjust for Linkage Bias [Final Wgt]
YouthMorphGp1	F2YTHM.	F2YTHM.	F2YTHM.	F2YTHM.	F2YTHM.	Adolescent (>=15 <25 Yrs) Cancer Grouping 1
YouthMorphGp2	F2YTHM.	F2YTHM.	F2YTHM.	F2YTHM.	F2YTHM.	Adolescent (>=15 <25 Yrs) Cancer Grouping 2
YrRes5yrs	-	F86UR5Y.	-	-	FUR5Y.	Usual Residence Five Years Ago Indicator
YrsinNZ	FYRSUR.	FYRSUR.	-	FYRSUR.	FYRSUR.	Years since Arrival in NZ
YrsUR	-	FYRSUR.	FYRSUR.	FYRSUR.	FYRSUR.	Years at Usual Residence

Table 44 SAS Age formats used

```

/*****AGE FORMATS*****/
/*Make permanent variable with same groupings*/
invalue iagem5y
.=.
  0 -< 60= 0    60 -< 120= 5    120 -< 180=10    180 -< 240=15    240 -< 300=20    300 -< 360=25
 360 -< 420=30    420 -< 480=35    480 -< 540=40    540 -< 600=45    600 -< 660=50    660 -< 720=55
 720 -< 780=60    780 -< 840=65    840 -< 900=70    900 -< 960=75    960 -<1020=80    1020 -<1080=85
1080 -<1140=90    1140 - 9999=95;

invalue iagey5y
.=.
  0 -< 5= 0    5 -< 10= 5    10 -<15=10    15 -< 20=15    20 -< 25=20    25 -<30=25
 30 -< 35=30    35 -< 40=35    40 -<45=40    45 -< 50=45    50 -< 55=50    55 -<60=55
 60 -< 65=60    65 -< 70=65    70 -<75=70    75 -< 80=75    80 -< 85=80    85 -<90=85
 90 -< 95=90    95 - 9999=95;

value fagei5y
.='Missing'

```


0='0- 4 yrs'	5='5- 9 yrs'	10='10-14 yrs'	15='15-19 yrs'	20='20-24 yrs'	25='25-29 yrs'
30='30-34 yrs'	35='35-39 yrs'	40='40-44 yrs'	45='45-49 yrs'	50='50-54 yrs'	55='55-59 yrs'
60='60-64 yrs'	65='65-69 yrs'	70='70-74 yrs'	75='75-79 yrs'	80='80-84 yrs'	85='85-89 yrs'
90='90-94 yrs'	95='>=95 years';				

```

/*Final Age groups used in analyses*/
value ffrage
-99='All Ages'          14='0 - 14 yrs'          19='0 - 19 yrs'
 24='0 - 24 yrs'       114='1 - 14 yrs'        124='1 - 24 yrs'
1500='>=15 yrs'       1524='15 - 24 yrs'     1544='15 - 44 yrs'
2034='20 - 34 yrs'    2069='20 - 69 yrs'     2500='>=25 yrs'
2539='25 - 39 yrs'    2544='25 - 44 yrs'     2564='25 - 64 yrs'
3569='35 - 69 yrs'    4054='40 - 54 yrs'     4500='>=45 yrs'
4564='45 - 64 yrs'    5000='>=50 yrs'        5500='>=55 yrs'
5564='55 - 64 yrs'    6500='>=65 yrs'        6574='65 - 74 yrs'
7000='>=70 yrs'       7500='>=75 yrs'        7584='75 - 84 yrs'
8500='>=85 yrs';

```

Table 45 SAS Ethnicity formats used

```

/*****ETHNICITY FORMATS*****/
/* VARIABLE: TotMaori      DESCRIPTION: Total Maori
VARIABLE: TotPacific      DESCRIPTION: Total Pacific
VARIABLE: TotAsian        DESCRIPTION: Total Asian
VARIABLE: TotNonMPA       DESCRIPTION: Total Non Maori/Pacific/Asian
YEAR(S): 1981,1986,1991,1996,2001
NOTE: Used for numerous Total Ethnicity variables in datasets */
value ftoteth
.,9='Missing'           0='Not Relevant'
 1='Total NZ Māori'     2='Total Pacific'
 4='Total Asian'        5='nonMPA (European/Other)'
11='nonM (but P or A)' 12='nonP (but M or A)'
14='nonA (but M or P)' 21='non Māori'
22='non Pacific'       24='non Asian';

/* VARIABLE: EthCenPr4    DESCRIPTION: Prioritised Ethnicity
VARIABLE: EthCenSol4     DESCRIPTION: Sole Ethnicity
YEAR(S): 1981,1986,1991,1996,2001 */
value f4eth
 1='Māori'              2='Pacific People'      3='NonMāoriNonPac'      4='Asian'
 5='NonMāoriNonPacNonAs' 6='Non-Māori'           7='Non-Pacific'         9='Missing';

/* VARIABLE: EthDet1-3    DESCRIPTION: Ethnicity Detailed 1 to 3
YEAR(S): 1981,1986,1991,1996 */
/* VARIABLE: EthDet1-6    DESCRIPTION: Ethnicity Detailed 1 to 6
YEAR(S): 2001 */
value fDetEth

```

2 = 'Maori'	21 = 'Maori'
3 = 'Pacific'	30 = 'Pacific (nfd)'
31 = 'Samoan'	32 = 'Cook Is Maori'
33 = 'Tongan'	34 = 'Nuiean'
35 = 'Tokelauan'	
36 = 'Fijian (except Fiji Indian/Indo-Fijian)'	
37 = 'Fijian (nfd)'	39 = 'Other Pacific'
4 = 'Asian'	40 = 'Asian (nfd)'
42 = 'Chinese'	43 = 'Indian'
49 = 'Other Asian'	5 = 'European/Others'
50 = 'Others'	51 = 'NZ European'
53 = 'European (Caucasian)'	54 = 'New Zealander'
58 = 'Other European'	
70 = 'MELAA' /*Middle Eastern/Latin American/African*/	
80 = 'Mixed Ethnicity'	96 = 'Repeated Value'
97 = 'Response Unidentifiable'	98 = 'Response Outside Scope'
99 = 'Missing';	

Table 46 SAS Maori Ancestry or Descent formats used

```

/*****MAORI ANCESTRY OR DESCENT FORMATS*****/
/* VARIABLE: MaoriDes DESCRIPTION: Maori Descent Indicator
YEAR(S): 1981 */
value f81Maor
0='Non-Māori Descent' 1='Māori Descent' .='Missing';

/* VARIABLE: MaoriAnc DESCRIPTION: Maori Ancestry Indicator
YEAR(S): 1991 */
value f91Maor
1='No Māori Ancestry' 2='Don't Know' 3='Māori Ancestry' 9='Not Specified'
.='Not Applicable';

/* VARIABLE: MaoriAnc DESCRIPTION: Maori Ancestry Indicator
YEAR(S): 1996 */
value f96Maor
1='Māori Ancestry' 2='No Māori Ancestry'
3='Don't Know' 9='Not Specified'
.,8='Missing or Not Applicable/Unidentifiable';

/* VARIABLE: MaoriDes DESCRIPTION: Maori Descent Indicator
YEAR(S): 2001 */
value f01Maor
1='Māori Descent' 2='No Māori Descent'
3='Yes & No Māori Descent' 4='Don't Know'
5='Yes & Don't Know' 6='No & Don't Know'
7='Response Unidentifiable' .,9='Not Stated/Not Specified';

```

Table 47 SAS Country of Birth formats used

```

/*****COUNTRY OF BIRTH FORMATS*****/
/* VARIABLE: CtryBrth DESCRIPTION: Country of Birth
   YEARS: 1981, 1986, 1991, 1996, 2001 */
value fcob
10='New Zealand'
20='Australia'
30='British Isles (all)'
 31='England'   32='Scotland'   39='Rest of British Isles'
40='Europe (all)'
 41='Netherlands'   49='Rest of Europe'
50='Pacific Islands (all)'
 51='Samoa'   52='Cook Islands'   53='Niue'   54='Tonga'   55='Fiji'
 59='Rest of Pacific Islands'
60='Africa'
70='Americas'
80='Asia (all)'
 81='China'   82='India'   89='Rest of Asia'
90='Born Elsewhere'
99,.='Missing/NS';

```

Table 48 SAS Education formats used

```

/*****EDUCATION FORMATS*****/
/* VARIABLE: HQual3_I1 - Hqual3_I3 DESCRIPTION: Highest Qualification Gained 3 level
   VARIABLE: HQual5_I1 - Hqual5_I3 DESCRIPTION: Highest Qualification Gained 5 level
   YEAR(S): 1981,1986,1991,1996,2001 */
value fHQual
 1='No Qualifications'           2,20='School Qualifications'
21='Low School Qualifications'   22='High School Qualifications'
 3='Post-School Qualifications'  31='Low Post-School Qualifications'
32='High Post-School Qualifications'  4,40='School or Post-School Qualifications'
.,9='Missing, Not Applicable, Still at School';

/* VARIABLE: EdLAllCur DESCRIPTION: Current Education Attendance Level
and VARIABLE: EdLAllPst DESCRIPTION: Past Education Attendance Level
   YEAR(S): 1981 */
value fAtLev
0='No attendance at any places of tertiary education'
1='Still attending primary/secondary school'
2='University'
3='Teachers College'
4='Polytechnic/Technical Inst./Community College'
5='Other'

```

```

6='University plus Teachers College'
7='University plus Polytechnic/Tech Inst./Com. Coll.'
8='Other Combinations'
.,9='Not Specified';

/* VARIABLE: EdLAllHgh DESCRIPTION: Highest Level of Education Attendance
YEAR(S): 1981 */
value fEdAtt
1='Still Attending'                2='No Secondary'
3='Secondary to 5th Form'          4='6th Form'
5='7th Form'                       6='University'
7='Teachers Training College'      8='Polytech/Tech Inst./Com. Coll.'
9='University & Teachers College' 10='Univ./Polytech/Tech/Com. Coll.'
11='Other Tertiary'                .,99='Not Specified';

/* VARIABLE: EdLSchHgh DESCRIPTION: School Attendance Level
YEAR(S): 1981 */
value fscat
1='No primary or secondary schooling'
2='Primary or Intermediate, Form 2 (Std 6) or below'
3='Form 3'          4='Form 4'          5='Form 5'
6='Form 6'          7='Form 7'          .,9='Not Specified';

/* VARIABLE: EdQAll_A DESCRIPTION: First Grouped Qualification Gained
and VARIABLE: EdQAll_B DESCRIPTION: Second Grouped Qualification Gained
and VARIABLE: EdQAll_C DESCRIPTION: Third Grouped Qualification Gained
and VARIABLE: EdQAll_D DESCRIPTION: Fourth Grouped Qualification Gained
YEAR(S): 1981 */
value f81qual
1='Still at School'                2='Doctorate & Masterate'
3='Bachelorate'                   4='Post-Graduate Diplomas'
5='Under-Graduate Diplomas & Certificates' 6='Non-University Qualifications'
9='Unidentified or Not Specified'  .='Missing';

/* VARIABLE: EdQSchHgh DESCRIPTION: Highest School Qualification
YEAR(S): 1981 */
value f81sql
0='No School Qualification'
1='University Scholarship, or A or B Bursary'
2='Higher School Certificate or Higher Leaving Cert'
3='University Entrance, Matriculation'
4='Endorsed School Cert, or Sixth Form Cert in >=4 subj'
5='Sixth Form Certificate in 1, 2 or 3 subjects'
6='School Certificate, or >=3 subject passes in School Cert subj'
7='Pass in 1 or 2 School Certificate subjects'
8='Other (must be valid qualifications)'
.,9='Not Specified';

```

```

/* VARIABLE: EdQAllHgh DESCRIPTION: Highest Qualification Gained (SNZ Protocol)
YEAR(S): 1986 */
value f86HQal
1='Postgraduate Degree or Degree'
2='Undergraduate Degree, NZ Cert/Diploma Both NZC & Technical, Techn. Cert, Teacher/Nursing'
3='Trade Certificates, other Tertiary Qualification'
4='Higher School Certificate/Bursary, Sixth Form Certificate'
5='School Certificate'
6='Other School Qualification'
7='Still at School (Probably)'
8='No Qualification'
.,9='Not Specified';

/* VARIABLE: EdQSchHgh DESCRIPTION: Highest School Qualification
YEAR(S): 1986 */
value f86sql
1='No School Qualification' 2='School Certificate, 1 or 2 Passes'
3='School Certificate, >=3 Passes' 4='6th Form Certificate, Endorsed School Cert'
5='University Entrance, Matriculation' 6='Higher School Cert or Higher Leaving Cert'
7='University Bursary or Scholarship' 8='Other'
.,9='Not Specified';

/* VARIABLE: EdQTerHgh DESCRIPTION: Tertiary Qualification Gained
YEAR(S): 1986 */
value f86tql
2='Still at School, or No Qualifications' 3='Trade Certificate'
4='Nursing Certificate/Diploma' 5='Teachers Certificate/Diploma'
6='Technicians Certificate' 7='NZ Certificate/Diploma'
8='Undergraduate Certificate/Diploma' 9='Baccalureate'
10='Postgraduate Degree/Cert/Diploma' 11='Other'
12='Two Tertiary Qualifications' 13='Three or more Tertiary Qualifications'
.,99='Not Specified';

/* VARIABLE: EdQTer_A DESCRIPTION: Tertiary Qual Gained, Group A
VARIABLE: EdQTer_B DESCRIPTION: Tertiary Qual Gained, Group B
VARIABLE: EdQTer_C DESCRIPTION: Tertiary Qual Gained, Group C
YEAR(S): 1986 */
value f86tq
2='No Qualifications' 3='Trade Certificate'
4='Nursing Certificate/Diploma' 5='Teachers Certificate/Diploma'
6='Technicians Certificate' 7='NZ Certificate/Diploma'
8='Undergraduate Certificate/Diploma' 9='Bachelors Degree'
10='Postgraduate Degree/Cert/Diploma' 12='Other'
.,99='Not Specified';

/* VARIABLE: EdQAllHgh DESCRIPTION: Highest Qualification Obtained

```

```

YEAR(S): 1991 */
value f91HQ
1='Postgraduates Degree'                2='Bachelors Degree'
3='Under Graduate Certificate/Diploma'    4='Technicians Certificate'
5='Teachers/Nurses Certificate/Diploma'  6='Trade Certificate'
7='Other Tertiary Qualifications'
8='University Bursary/Scholarship/Higher School Leaving Cert'
9='Sixth Form Certificate/University Entrance'
10='School Certificate'
11='Other School Qualifications (includes Overseas)'
12='Still at School'                    13='No Qualifications'
.,14='Not Specified';

/* VARIABLE: EdQSchHgh DESCRIPTION: Highest School Qualification
YEAR(S): 1991 */
value f91sql
1='No School Qualifications'            2='School Certificate (>=1 subjects)'
3='Sixth Form Cert, Univ Entrance (>=1 subj)'  4='Higher School Cert, Higher Leaving Cert'
5='University Bursary or Scholarship'    6='Overseas Qualification'
7='Other School Qualification'          .,9='Not Specified';

/* VARIABLE: EdQTer_A DESCRIPTION: Tertiary Qual Gained, Group A
YEAR(S): 1991 */
value f91TQa
0='Neither Trade Cert/Advanced Trade Cert or Nursing Cert/Diploma'
1='Trade Certificate/Advanced Trade Certificate'
2='Both Trade Cert/Advanced Trade Cert and Nursing Cert/Diploma'
3='Nursing Certificate'
7='Still at School'
.,9='Not Specified';

/* VARIABLE: EdQTer_B DESCRIPTION: Tertiary Qual Gained, Group B
YEAR(S): 1991 */
value f91TQb
0='Neither NZ certificate/Diploma or Technician Certificate'
1='NZ Certificate/Diploma'
2='Both NZ Certificate/Diploma and Technicians Certificate'
3='Technicians Certificate'
7='Still at School'
.,9='Not Specified';

/* VARIABLE: EdQTer_C DESCRIPTION: Tertiary Qual Gained, Group C
YEAR(S): 1991 */
value f91TQc
0='Neither Teacher Cert/Diploma or University Cert/Diploma below Bachelor level'

```

```

1='Teachers Certificate/Diploma'
2='Both Teachers Certificate/Diploma and University'
3='University certificate/Diploma below Bachelors Level'
7='Still at School'
.,9='Not Specified';

/* VARIABLE: EdQTer_D DESCRIPTION: Tertiary Qual Gained, Group D
YEAR(S): 1991 */
value f91TQd
0='Neither Bachelor Degree or Post Graduate Degree Cert/Diploma'
1='Bachelors Degree'
2='Both Bachelors Degree and Postgraduate Degree Cert/Diploma'
3='Postgraduate Degree Certificate/Diploma'
7='Still at School'
.,9='Not Specified';

/* VARIABLE: EdQTer_E DESCRIPTION: Tertiary Qual Gained, Group E
YEAR(S): 1991 */
value f91TQe
0='No Other Qualifications' 1='Other Qualifications'
7='Still at School' .,9='Not Specified';

/* VARIABLE: EdQTer_A Description: Tertiary Qual A Attainment Level
YEAR(S): 1996 */
/* VARIABLE: EdQTer_B Description: Tertiary Qual B Attainment Level
YEAR(S): 1996 */
value f96TqL
0='Level of Qualification Not Given, but subject given'
4='Basic Vocational Qualification' 5='Skilled Vocational Qualification'
6='Intermediate Vocational Qualification' 7='Advanced Vocational Qualification'
8='Bachelors Degree' 9='Higher Degree'
88='Not applicable' 98='Unidentifiable'
.,99='Not Specified' 999='(PP) No Post-School Qualification';

/* VARIABLE: EdQAllHgh DESCRIPTION: Derived Highest Qualification Obtained
YEAR(S): 2001 */
value f01HQal
0='No Qualification' 1='Fifth Form Qualification'
2='Sixth Form Qualification' 3='Higher School Qualification'
4='Other NZ Secondary School Qualification' 5='Overseas Secondary School Qualification'
6='Basic Vocational Qualification' 7='Skilled Vocational Qualification'
8='Intermediate Vocational Qualification' 9='Advanced Vocational Qualification'
10='Bachelor Degree' 11='Higher Degree'
97='Highest Qualification Unidentifiable' .,99='Not Stated';

/* VARIABLE: EdQSchHgh DESCRIPTION: Highest School Qualification
YEAR(S): 2001 */

```

```

value f01sql
  0='No Secondary School Qualification'
  1='NZ School Cert. in >=1 Subjects or Nat. Cert. Lev 1'
  2='NZ Sixth Form Cert. in >=1 Subjects or Nat. Cert. Lev 2'
  3='NZ University Entrance Before 1986 in >=1 Subjects'
  4='NZ Higher School Certificate or Higher Leaving Cert.'
  5='University Entrance Qual. From NZ University Bursary'
  6='NZ A or B Bursary, Scholarship or Nat. Cert. Lev 3'
  7='Other NZ Secondary School Qualification'      8='Overseas Secondary School Qualification'
  44='Don't Know'                                55='Refused to Answer'
  77='Response Unidentifiable'                   88='Response Outside Scope'
  99='Not Stated';

/* VARIABLE: EdQTer_A  DESCRIPTION: Tertiary Qual 1 Attainment Level
   YEAR(S): 2001 */
value f01Ter
  0='No Post-School Qualification'                4='Basic Vocational Qualification'
  5='Skilled Vocational Qualification'           6='Intermediate Vocational Qualification'
  7='Advanced Vocational Qualification'         8='Bachelor Degree'
  9='Higher Degree'
  33='Level of Attainment Not Given (but Field of Study Given)'
  44='Don't Know'                                55='Refused to Answer'
  77='Response Unidentifiable'                   88='Response Outside Scope'
  .,99='Not Stated';

```

Table 49 SAS Marital Status formats used

```

/*****MARITAL STATUS FORMATS*****/
/* VARIABLE: MarSt  DESCRIPTION: Marital Status
   YEAR(S): 1981 */
value f81Marr
  1='Never Married'          2='Married'          3='Separated'          4='Widowed'
  5='Divorced'              9='Not Specified'  .='Missing or Not Applicable';

/* VARIABLE: MarSt  DESCRIPTION: Marital Status
   YEAR(S): 1986,1991 */
value f86Marr
  1='Never Married'          2='Married, First Time'
  3='Remarried'            4='Separated'
  5='Divorced'             6='Widowed'
  9='Not Specified'        .,8='Missing or Not Applicable';

/* VARIABLE: Mar_DeFact  DESCRIPTION: De Facto Relationship Status
   YEAR(S): 1981,1986 */
value f86MarD
  0='Non-de facto relationship'  1='De facto relationship'  .='Not Specified';

```



```

/* VARIABLE: MarSt_S DESCRIPTION: Marital Status (Social)
YEAR(S): 1996 */
value f96MarS
111='Partnered, Legal Spouse (not separated)-First Marriage'
112='Partnered, Legal Spouse (not separated)-Subsequent Marriage'
113='Partnered, Legal Spouse (not separated)-Not Further Classifiable'
121='Partnered, De Facto Spouse-Opposite-sex Couple'
122='Partnered, De Facto Spouse-Same-sex Couple'
131='Partnered, Not Further Classifiable'          211='Non-partnered, Never Married'
221='Non-partnered, Separated'                    222='Non-partnered, Divorced'
223='Non-partnered, Widowed'                      .,911='Not Specified';

/* VARIABLE: MarSt_L DESCRIPTION: Marital Status (Legal)
YEAR(S): 1996,2001 */
value f96MarL
111='Married (not separated)-First Marriage'
121='Married (not separated)-Subsequent Marriage'
131,21='Married (not separated)-Not Further Classifiable'
211,11='Never Married'                            221,31='Separated'
222,32='Divorced'                                223,33='Widowed'
77='Response Unidentifiable'                      .,911,99='Not Specified';

/* VARIABLE: MarSt_S DESCRIPTION: Marital Status (Social)
YEAR(S): 2001 */
value f01MarS
100='Partnered, nfd'                              111='Legal Spouse'
121='Other Partnership'                          200='Non-partnered, nfd'
211='Non-partnered, Never Married'              221='Non-partnered, Separated'
222='Non-partnered, Divorced'                   223='Non-partnered, Widowed'
.,999='Not Stated/Not Specified';

/* VARIABLE: Marst3 DESCRIPTION: Marital Status
YEAR(S): 1981,1986,1991,1996,2001 */
value f4Marr
1='Never Married'                                2,8='Current Married'
3='Separated & Divorced'                          4='Widowed'
5='Sep, Divorced & Widowed'                       .,9='N/A & Missing';

```

Table 50 SAS Employment formats used

```

/*****EMPLOYMENT FORMATS*****/
/* VARIABLE: LabSt DESCRIPTION: Labour Force Status
YEAR(S): 1986 */
value f86LFS

```

```

1='Full-time labour force'      2='Part-time labour force'
3='Non labour force'           .='Missing';

/* VARIABLE: LabSt  DESCRIPTION: Labour Force Status
   YEAR(S): 1991 */
value f91LFS
1='Gainfully Employed in the Full-Time Labour Force'
2='Gainfully Employed in the Part-Time Labour Force'
3='Unemployed & Actively Seeking Full-Time Work'
4='Unemployed & Actively Seeking Part-Time Work'
5='Non Labour Force (Seeking Work but Not Available)'
6='Non Labour Force (Available for Work but Not Seeking)'
7='Non Labour Force (Not Seeking & Not Available)'
.='Not Applicable';

/* VARIABLE: LabSt  DESCRIPTION: Labour Force Status
   YEAR(S): 1996,2001 */
value f96LFS
1='Employed Full-Time'          2='Employed Part-Time'
3='Unemployed'                  4='Not in Labour Force'
.,9='Not Specified';

/* VARIABLE: EmpSt  DESCRIPTION: Employment Status
   YEAR(S): 1981 */
value f81Emp
0='Self-Employed, employing labour'      1='Self-Employed, not employing labour'
2='Wages or salary'                      3='Relative (unpaid) assisting in business'
4='Unemployed & seeking work'            5='Not specified but working >=20 hours weekly'
6='Retired'                              7='Full time student'
8='Household duties (unpaid)'            9='Other persons not working for financial reward'
.='Missing or Not Specified';

/* VARIABLE: EmpSt  DESCRIPTION: Employment Status
   YEAR(S): 1986 */
value f86Emp
1='Full-Time Labour Force:Self-Employed (Employees)'
2='Full-Time Labour Force:Self-Employed (No Employees)'
3='Full-Time Labour Force:Wage & Salary Earner'
4='Full-Time Labour Force:Relative Assisting'
5='Full-Time Labour Force:Unemployed'
6='Full-Time Labour Force:Not Specified'
7='Part-Time Labour Force:Self-Employed (Employees)'
8='Part-Time Labour Force:Self-Employed (No Employees)'
9='Part-Time Labour Force:Wage & Salary Earner'
10='Part-Time Labour Force:Relative Assisting'
11='Part-Time Labour Force:Unemployed'
12='Part-Time Labour Force:Not Specified'

```

```

13='Non Labour Force'
.='Missing';

/* VARIABLE: EmpSt DESCRIPTION: Employment Status
YEAR(S): 1991 (but splitting out those only looking at newspapers for jobs)
They are added to Unemployed for 1986 but Non Labour for 1991*/
value fEmpSp
1='Full-Time Labour Force:Self-Employed (Employees)'
2='Full-Time Labour Force:Self-Employed (No Employees)'
3='Full-Time Labour Force:Wage & Salary Earner'
4='Full-Time Labour Force:Relative Assisting'
5='Full-Time Labour Force:Unemployed'
6='Full-Time Labour Force:Not Specified'
7='Part-Time Labour Force:Self-Employed (Employees)'
8='Part-Time Labour Force:Self-Employed (No Employees)'
9='Part-Time Labour Force:Wage & Salary Earner'
10='Part-Time Labour Force:Relative Assisting'
11='Part-Time Labour Force:Unemployed'
12='Part-Time Labour Force:Not Specified'
13='Non Labour Force'
25='NLF [Unemployed & Seeking Work (full time) via newspaper only]'
31='NLF [Unemployed & Seeking Work (part time) via newspaper only]'
.='Missing';

/* VARIABLE: EmpSt DESCRIPTION: Employment Status
YEAR(S): 1996 */
value f96Emp
1='Full-Time Wage & Salary Earner'
2='Full-Time Self-Employed (No Employees)'
3='Full-Time Self-Employed (Employees)'
4='Full-Time Unpaid Family Worker/Family Business'
5='Full-Time Not Specified Status in Employment'
6='Part-Time Wage & Salary Earner'
7='Part-Time Self-Employed (No Employees)'
8='Part-Time Self-Employed (Employees)'
9='Part-Time Unpaid Family Worker/Family Business'
10='Part-Time Not Specified Status in Employment'
11='Unemployed and Actively Seeking Work'
12='Not in Labour Force'
13='Labour Force Status Not Available'
.='Missing';

/* VARIABLE: EmpSt DESCRIPTION: Employment Status
YEAR(S): 2001 */
value f01Emp
11='Paid Employee' 12='Employer' 13='Self-Employed and without Employees'
14='Unpaid Family Worker' .,99='Not Stated';

```

```

/* VARIABLE: JobInd DESCRIPTION: Job Indicator
YEAR(S): 1991 */
value f91JobI
1='Gainfully Employed' 2='Not Gainfully Employed' .='Missing';

/* VARIABLE: LabSt3 DESCRIPTION: Labour Force Status
VARIABLE: WorkSt3 DESCRIPTION: Work Status
YEAR(S): 1981,1986,1991,1996,2001 */
value femploy
1,-1='Employed' 2,-2='Unemployed' 3,-3='Non-Labour' .,9='Missing';

```

Table 51 SAS Hours Worked formats used

```

/*****HOURS WORKED FORMATS*****/
/* VARIABLE: HrsWk DESCRIPTION: Total Number of Hours Worked
YEAR(S): 1981,1986,1991,1996,2001 */
/* Note: Values in data-set are single numbers, not grouped */
value f01hwk
0=' 0 hours per week' 1-9=' 1- 9 hours per week'
10-19='10-19 hours per week' 20-29='20-29 hours per week'
30-39='30-39 hours per week' 40-49='40-49 hours per week'
50-59='50-59 hours per week' 60-69='60-69 hours per week'
70-79='70-79 hours per week' 80-89='80-89 hours per week'
90-99='90-99 hours per week' 100-109='100-109 hours per week'
110-119='110-119 hours per week' 120-129='120-129 hours per week'
130-139='130-139 hours per week' 140-149='140-149 hours per week'
150-159='150-159 hours per week' 160-168='160-168 hours per week'
197='97 or more hours per week' 198='98 or more hours per week'
444='Do not Know' 555='Refused to Answer'
777='Response Unidentifiable' 888='Response Outside Scope'
.,999='Not Specified';

```

Table 52 SAS Working at Home formats used

```

/*****WORKING AT HOME FORMATS*****/
/* VARIABLE: WrkatHome DESCRIPTION: Work at Home Indicator
YEAR(S): 1996,2001 */
value f01WkHm
1='Worked at Home' 2='Worked Away from Home'
3='Unidentified' .,9='Not Stated/Not Specified';

```

Table 53 SAS Travel to Work formats used

```

/*****TRAVEL TO WORK*****/
/* VARIABLE: TravToWrk   DESCRIPTION: Means of Travel to Work
   YEAR(S): 1981 */
value f81Trav
0='Public bus'                                1='Train'
2="Passenger in a car, truck, van or firm's bus"
3='Drive car, truck or van'                    4='Motorcycle, power cycle'
5='Bicycle'                                    6='Walk'
7='Other means'                                8='Work at home'
98='Not applicable'                            .,99='Not Specified';

/* VARIABLE: TravToWrk   DESCRIPTION: Means of Travel to Work
   YEAR(S): 1986 */
value f86Trav
1='Public bus'                                2='Train'
3='Drove a private car, truck or van'        4='Drove a company car, truck or van'
5='Passenger in a car, truck or company bus'
6='Bicycle'                                    7='Motor cycle, power cycle'
8='Walk'                                       9='Other means'
10='Work at home'                             99='Not specified';

/* VARIABLE: TravToWrk   DESCRIPTION: Means of Travel to Work
   YEAR(S): 1991 */
value f91Trav
1='Did not go to work today'                  2='Drove a private car, truck or van'
3='Drove a company car, truck or van'        4='Passenger in a car, truck or company bus'
5='Public bus'                                6='Train'
7='Motor cycle or power cycle'                8='Bicycle'
9='Walked or jogged'                          10='Worked at home'
11='Other'                                    .,99='Not Specified';

```

Table 54 SAS Occupation formats used

```

/*****OCCUPATION FORMATS*****/
/*Elley Irving from 3 digit NZSC068 codes according to Neil Pearces concordance*/
/* VARIABLE: O_ElleyIrv   DESCRIPTION: Elley-Irving Index
   YEAR(S): 1981,1986,1991,1996 */
/* VARIABLE: O_ElleyIrv   DESCRIPTION: Elley-Irving 68 from NZSC068 (but using NZSC099)
   YEAR(S): 2001 */
value fEI
1='EI Class 1'                                2='EI Class 2'
3='EI Class 3'                                4='EI Class 4'
5='EI Class 5'                                6='EI Class 6'

```

```

7='EI Class 7 (Farmers)'          .,9,99='EI Class 9 (Miss or NS)';

/* VARIABLE: O_EGP   DESCRIPTION: EGP
   YEAR(S): 1981,1986,1991,1996 */
/* VARIABLE: O_EGP   DESCRIPTION: EGP 68 from NZSC068 (but using NZSC099)
   YEAR(S): 2001 */
value fEGP
1='High grade professionals & administrators'
2='Lower grade professionals & higher grade technicians'
3='Routine non-manual employees, sales & service workers'
4='Small proprietors & administrators with employees'
5='Small proprietors & administrators without employees'
6='Farmers & self-employed fishermen'
7='Lower grade technicians & foremen'
8='Skilled manual workers'
9='Semi & unskilled manual workers'
10='Agricultural workers'
.,0='Missing';

/* formats to assign SEI by three digit NZSC090 codes*/
/* VARIABLE: NZSC090 used to create O_SEI91
   YEAR(S): 1991,1996 */
invalue $i90SEI
'611'='22.4   '826'='22.7   '523'='22.9   '612'='25.1   '512'='26.7
'911'='27.3   '513'='29.4   '915'='29.8   '813'='29.8   '744'='30.2
'521'='32.9   '514'='33.7   '822'='33.7   '914'='34.4   '828'='35.7
'823'='36.4   '743'='36.4   '913'='36.5   '827'='37.5   '422'='37.7
'824'='37.9   '821'='38.2   '741'='38.3   '613'='38.6   '832'='38.7
'245'='38.8   '825'='39.0   '833'='39.6   '829'='39.6   '614'='39.8
'742'='40.4   '414'='40.8   '412'='42.0   '912'='42.2   '421'='43.1
'812'='43.4   '731'='44.2   '841'='44.2   '413'='44.3   '411'='44.7
'711'='45.2   '721'='45.5   '522'='45.8   '811'='46.7   '733'='48.8
'712'='48.7   '723'='48.7   '713'='49.2   '834'='49.4   '814'='49.5
'732'='49.9   '334'='50.4   '336'='50.3   '323'='51.3   '815'='51.3
'511'='52.5   '724'='53.2   '722'='53.5   '313'='53.8   '122'='54.0
'011'='54.2   '335'='54.9   '312'='55.3   '322'='55.5   '234'='56.6
'331'='56.6   '321'='58.3   '338'='58.8   '223'='60.1   '332'='60.1
'816'='60.2   '515'='61.2   '831'='61.3   '233'='61.5   '243'='61.8
'315'='62.2   '114'='62.6   '311'='63.4   '333'='64.7   '121'='65.0
'241'='70.9   '214'='73.2   '314'='73.5   '213'='74.8   '244'='75.3
'232'='76.6   '235'='77.0   '231'='77.6   '221'='79.2   '211'='81.9
'112'='82.0   '212'='82.6   '111'='83.9   '242'='88.9   '113'='89.8
'222'='90.0   '337'='10.0   other=.;

/*1996 NZSEI scores from 3 digit NZSC095 code*/
/* VARIABLE: NZSC095 used to create O_SEI96
   YEAR(S): 1996 */

```

```

invalue $i96SEI
'111'='63      '112'='69      '113'='90      '114'='46      '121'='69
'122'='50      '211'='68      '212'='71      '213'='60      '214'='56
'221'='58      '222'='89      '223'='45      '231'='69      '232'='61
'233'='43      '234'='45      '235'='58      '241'='61      '242'='83
'243'='44      '244'='62      '245'='32      '311'='46      '312'='47
'313'='46      '314'='65      '315'='44      '321'='45      '322'='45
'323'='33      '331'='48      '332'='51      '333'='46      '334'='29
'335'='40      '336'='49      '337'='31      '338'='42      '411'='33
'412'='34      '413'='28      '414'='30      '421'='30      '422'='27
'511'='38      '512'='18      '513'='19      '514'='20      '515'='44
'521'='22      '522'='30      '523'='64      '611'='22      '612'='34
'613'='31      '614'='37      '711'='36      '712'='32      '713'='43
'721'='32      '722'='39      '723'='34      '724'='37      '731'='34
'732'='27      '733'='35      '741'='26      '742'='28      '743'='26
'744'='20      '811'='36      '812'='27      '813'='19      '814'='30
'815'='39      '816'='48      '821'='25      '822'='23      '823'='23
'824'='26      '825'='30      '826'='10      '827'='24      '828'='24
'829'='24      '831'='46      '832'='26      '833'='27      '834'='32
'841'='29      '911'='21      '912'='32      '913'='25      '914'='19
'915'='18      other=.;

/*Variables for 1991 & 1996 currently do not have format f91sei. associated with them,
but they could*/
/* VARIABLE: O_SEI91v  DESCRIPTION: SEI 91 Values
YEAR(S): 1991,1996 */
/* VARIABLE: O_SEI91v  DESCRIPTION: NZSEI 1991 value from NZSC090 (but using NZSC099)
YEAR(S): 2001 */
/* Note: Values in data-set are single values, not grouped */
value f91sei
75 - 90='NZSEI Class 1'          60 -< 75='NZSEI Class 2'
50 -< 60='NZSEI Class 3'          40 -< 50='NZSEI Class 4'
30 -< 40='NZSEI Class 5'          10 -< 30='NZSEI Class 6'
other='NZSEI Class 9 (Miss or NS)';

/*Variable for 1996 currently does not have format f96sei. associated with it, but it could*/
/* VARIABLE: O_SEI96v  DESCRIPTION: SEI 96 Values
YEAR(S): 1996 */
/* VARIABLE: O_SEI96v  DESCRIPTION: NZSEI 1996 value from NZSC095 (but using NZSC099)
YEAR(S): 2001 */
/* Note: Values in data-set are single values, not grouped */
value f96sei
66-90='NZSEI Class 1'          56-65='NZSEI Class 2'
42-55='NZSEI Class 3'          32-41='NZSEI Class 4'
24-31='NZSEI Class 5'          10-23='NZSEI Class 6'
other='NZSEI Class 9 (Miss or NS)';

```

```

/* VARIABLE: If SEI class variable formed for 1991 and 1996, this would be its format*/
/* VARIABLE: O_SEI91c   DESCRIPTION: NZSEI 1991 class from NZSC090 (but using NZSC099)
   YEAR(S): 2001 */
/* VARIABLE: O_SEI96c   DESCRIPTION: NZSEI 1996 class from NZSC095 (but using NZSC099)
   YEAR(S): 2001 */
value fnsei
1='NZSEI Class 1'           2='NZSEI Class 2'
3='NZSEI Class 3'           4,8='NZSEI Class 4'
5='NZSEI Class 5'           6='NZSEI Class 6'
7='NZSEI Class 7 (Farmers)' .,9='NZSEI Class 9 (Miss or NS)';

/*Farmer Flag from 4 digit NZSC068*/
/* VARIABLE: Used on 4 digit NZSC068 to group into farmers and non-farmers
   YEAR(S): 1981,1986,1991,1996 */
invalue $i68Frm
'6111','6121','6122','6129','6131','6132','6133','6134'=1
'6141','6142','6143','6144','6145','6149','6151','6152'=1
'6159','6160','6171','6172','6173','6174','6179','6191'=1
'6192','6211','6219','6221','6222','6229','6230','6241'=1
'6242','6243','6244','6245','6246','6248','6249','6250'=1
'6260','6271','6272','6273','6279','6289','6291','6292'=1
'6299','7511','7783','7789','7799','9919','0532','0662'=1
'6119','6139'=1
other=0;

/* VARIABLE: O_FarmFlg   DESCRIPTION: Farmers Occupation Flag
   YEAR(S): 1981,1986,1991,1996 */
/* VARIABLE: O_FarmFlg   DESCRIPTION: Farmer's Occupational Flag from NZSC068 (but using NZSC099)
   YEAR(S): 2001 */
value fFarmF
0='Not a Farmer'           1='Farmer';

/* The format f2x0cc. can be used for O_Occ2X and O_OccSp2X (currently they do
   not have formats attached to them) */
/* VARIABLE: O_Occ2X     DESCRIPTION: Occupation Code - 2 Digits Occ68
   YEAR(S): 1981,1986,1991,1996 */
value f2x0cc
1='Physical Scientists(1)+Statisticians,Mathematicians,Systems Analysts(8)'
2='Architects, Engineers (2)'
3='Architects, Engineers (3)'
4='Aircraft and Ships Officers'
5='Life Scientists'
6='Medical, Dental, Veterinary (6)'
7='Medical, Dental, Veterinary (7)'
11='Accountants(11)+Economists(9)'
12='Jurists'
13='Teachers'

```


14='Workers in Religion'
 15='Authors, Journalists & Related Writers'
 16='Sculptors, Painters, Photographers & Related Creative'
 17='Composers&Performing Artists(17)+Athletes,Sportsmen/Sportswomen(18)'
 19='Professional, Technical'
 21='Managers(21)+Legislative Officials&Government Administrative(20)'
 30='Clerical Supervisors'
 31='Government Executive Officials'
 32='Stenog. Typists, Card & Tape Punching Machine Operators'
 33='Bookkeepers, Cashiers(33)+Computing Machine Operators(34)'
 35='Transpost & Communications Supervisors'
 37='Mail Distribution Clerks(37)+Transport Conductors(36)'
 38='Telephone and Telegraph Operators'
 39='Clerical nec'
 40='Managers (Wholesale & Retail Trade)'
 41='Working Proprietor (Wholesale & Retail Trade)'
 42='Sales Supervisors and Buyers'
 43='Technical Salesperson, Representative & Manufacturing'
 44='Insurance, Real Estate, Securities Salespersons'
 45='Salespersons, Shop Assistants(45)+Sales Workers nec(49)'
 50='Managers (Catering & Lodging Services)'
 51='Working Proprietors (Catering & Lodging Services)'
 53='Cooks, Waiters, Waitresses, Bartenders etc.'
 54='House Staff&Housekeeping Services nec(54)+Housekeeping&Related Service Supervisors(52)'
 55='Building Caretakers, Charworkers'
 56='Launderers, Drycleaners & Pressers'
 57='Hairdresser, Barber, Beautician etc.'
 58='Protective Service Workers - Including Armed Forces'
 59='Service Workers nec'
 60='Farm Managers & Supervisors'
 61='Farmers'
 62='Agriculture & Animal Husbandry Workers'
 63='Forestry Workers'
 64='Fishermen, Hunters'
 70='Production Supervisors & General Foremen/Women'
 71='Mine/Quarrymen, Well-Drillers etc.'
 72='Metal Processors'
 73='Wood Preparation Workers & Paper Makers'
 74='Chemical Processors'
 75='Spinners,Weavers,Knitters(75)+Tanners,Fellmongers&Pelt Dressers(76)'
 77='Food&Beverage Processors(77)+Tobacco Preparers&Tobacco Product Makers(78)'
 79='Tailors etc. Upholsterers'
 80='Shoemakers & Leather Goods Maker'
 81='Cabinet Makers & Related Woodworkers'
 83='Blacksmith,Toolmakers,Machine Tool Operators(83)+Stone Cutters&Carvers(82)'
 84='Machinery Fitters, Assemblers etc. Not Electrical'
 85='Electrical Fitters etc.Electronic Workers(85)+Broadcasting,Sound-Equipment Operators&Cinema Projectionists(86)'

```

87='Plumbers,Welders,Sheet & Structural Metal Preparers & Erectors'
88='Jewellery & Precious Metal Workers'
89='Glass Forgers, Potters'
90='Rubber & Plastics Product Makers'
92='Printers(92)+Paper & Paperboard Product Makers(91)'
93='Painters'
94='Production'
95='Bricklayers, Carpenters & Other Construction'
96='Stationary Engine & Related Equipment Operator'
97='Material, Dockets & Freight Handlers etc.'
98='Transport Equipment Operators'
99='Labourers nec'
.='Missing';

/* VARIABLE: O_Occ2X   DESCRIPTION: Occupational Code - 2 Digits NZSC099 V 1.0
   YEAR(S): 2001 */
value f010cc
11='Legislators and Administrators'           12='Corporate Managers'
21='Physical, Mathematical and Engineering Science Professionals'
22='Life Science and Health Professionals'     23='Teaching Professionals'
24='Other Professionals'
31='Physical Science and Engineering Associate Professionals'
32='Life Science and Health Associate Professionals' 33='Other Associate Professionals'
41='Office Clerks'                           42='Customer Services Clerks'
51='Personal and Protective Services Workers'  52='Salespersons, Demonstrators and Models'
61='Market Oriented Agricultural and Fishery Workers'
71='Building Trades Workers'                 72='Metal and Machinery Trades Workers'
73='Precision Trades Workers'                74='Other Craft and Related Trades Workers'
81='Industrial Plant Operators'
82='Stationary Machine Operators and Assemblers' 83='Drivers and Mobile Machinery Operators'
84='Building and Related Workers'
91='Labourers and Related Elementary Service Workers'
97='Response Unidentifiable'                 99='Response Outside Scope/Not Stated';

```

Table 55 SAS Industry formats used

```

/*****INDUSTRY FORMATS*****/
/* VARIABLE: IndAnz1   DESCRIPTION: ANZSIC Industry (1 xter)
   YEAR(S): 1996,2001 */
value $fANZ
'A'='Agriculture, Forestry & Fishing'        'B'='Mining'
'C'='Manufacturing'                          'D'='Electricity, Gas & Water Supply'
'E'='Construction'                           'F'='Wholesale Trade'
'G'='Retail Trade'                            'H'='Accommodation, Cafes & Restaurants'
'I'='Transport & Storage'                     'J'='Communication Services'
'K'='Finance & Insurance'                    'L'='Property & Business Services'

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'M'='Government Administration & Defence'      'N'='Education'
'O'='Health & Community Services'              'P'='Cultural & Recreational Services'
'Q'='Personal & Other Services'                  ., 'R', ' '='Missing';

/* VARIABLE: Industry   DESCRIPTION: Industry 1 Digit Code
   YEAR(S): 1981,1991,1996 */
value f1Ind
1='Agriculture, Hunting, Forestry & Fishing'  2='Mining & Quarrying'
3='Manufacturing'                             4='Electricity, Gas & Water'
5='Construction'                              6='Wholesale, Retail Trade & Restaurants & Hotels'
7='Transport, Storage & Communication'        8='Business & Financial Services'
9='Community, Social & Personal Services'     .,0='Missing or Not Adequately Defined';

/* VARIABLE: Industry   DESCRIPTION: Industry 2 Digit Code
   YEAR(S): 1986 */
value f2Ind
11='Agriculture & Hunting'                    12='Forestry & Logging'
13='Fishing'                                   21='Coal Mining'
22='Crude Petroleum & Natural Gas Production'  23='Metal Ore Mining'
29='Other Mining & Quarrying'                 31='Food, Beverage, Tobacco'
32='Textile, Apparel & Leathersgoods'          33='Wood Processing & Wood Product Manufacture'
34='Manufacturing of Paper & Paper Products; Printing & Publishing'
35='Manufacture of Chemicals & of Chemical,Petroleum,Coal,Rubber & Plastic Materials'
36='Concrete,Clay,Glass,Plaster,Masonry,Asbestos & Related Mineral Product Manufacture'
37='Basic Metal Industries'
38='Manufacture of Fabricated Metal Products,Machinery & Equipment'
39='Other Manufacturing Industries'            41='Electry, Gas & Steam'
42='Water Works & Supply'                      51='Construction of Buildings'
52='Construction other than Buildings'        53='Ancillary Construction Services'
61='Wholesale Trade'                          62='Retail Trade'
63='Restaurants & Hotels'                      71='Transport & Storage'
72='Communication'                            81='Financing'
82='Insurance'                                83='Real Estate & Business Services'
91='Public Administration & Defence'           92='Sanitary & Cleaning Services'
93='Social & Related Community Services'       94='Recreational & Cultural Services'
95='Personal & Household Services'
96='International and Extra-territorial Bodies' /*Added for CT*/
99='Not Gainfully Employed' /*Added for CT*/
.,0='Missing or Not Defined Adequately';

/* VARIABLE: IndANZ3     DESCRIPTION: Industry ANZSIC96 - Level 2 Sub-Division
   YEAR(S): 1996,2001 */
value $ANZ2Lev
'A01'='Agriculture'                            'A02'='Services to Agric, Hunting and Trapping'
'A03'='Forestry and Logging'                   'A04'='Commercial Fishing'
'B11'='Coal Mining'                             'B12'='Oil & Gas Extraction'
'B13'='Metal Ore Mining'                       'B14'='Other Mining'

```

'B15'='Services to Mining'	'C21'='Food, Beverage and Tobacco Manufacturing'
'C22'='Textile, Clothing, Footwear, Leather Mfg'	'C23'='Wood & Paper Product Manufacturing'
'C24'='Printing, Publishing and Recorded Media'	'C25'='Petrol, Coal, Chemical & Assoc Prod Mfg'
'C26'='Non-Metallic Mineral Product Manufacture'	'C27'='Metal Product Manufacturing'
'C28'='Machinery and Equipment Manufacturing'	'C29'='Other Manufacturing'
'D36'='Electricity and Gas Supply'	'D37'='Water Supply, Sewerage & Drainage Serv'
'E41'='General Construction'	'E42'='Construction Trade Services'
'F45'='Basic Material Wholesaling'	'F46'='Machinery & Motor Vehicle Wholesaling'
'F47'='Personal & Household Good Wholesaling'	'G51'='Food Retailing'
'G52'='Personal & Household Good Retailing'	'G53'='Motor Vehicle Retailing and Services'
'H57'='Accommodation, Cafes & Restaurants'	'I61'='Road Transport'
'I62'='Rail Transport'	'I63'='Water Transport'
'I64'='Air and Space Transport'	'I65'='Other Transport'
'I66'='Services to Transport'	'I67'='Storage'
'J71'='Communication Services'	'K73'='Finance'
'K74'='Insurance'	'K75'='Services to Finance and Insurance'
'L77'='Property Services'	'L78'='Business Services'
'M81'='Government Administration'	'M82'='Defence'
'N84'='Education'	'O86'='Health Services'
'O87'='Community Services'	'P91'='Motion Picture, Radio and TV Services'
'P92'='Libraries, Museums and the Arts'	'P93'='Sport and Recreation'
'Q95'='Personal Services'	'Q96'='Other Services'
'Q97'='Private Households Employing Staff'	'PPP','999',' ','R99',' '.'='Missing';

Table 56 SAS Income formats used

```

/*****INCOME FORMATS*****/
/* VARIABLE: H_THInc DESCRIPTION: Total Household Income
and VARIABLE: I_TIInc DESCRIPTION: Total Personal Income
YEAR(S): 1981 */
value f81Inc
0='Nil Income' 1=' $1 - $249'
2=' $250 - $499' 3=' $500 - $999'
4=' $1,000 - $1,999' 5=' $2,000 - $3,499'
6=' $3,500 - $4,999' 7=' $5,000 - $6,499'
8=' $6,500 - $7,999' 9=' $8,000 - $9,999'
10=' $10,000 - $11,999' 11=' $12,000 - $13,999'
12=' $14,000 - $15,999' 13=' $16,000 - $17,999'
14=' $18,000 - $19,999' 15=' $20,000 - $22,499'
16=' $22,500 - $24,999' 17=' $25,000 - $27,499'
18=' $27,500 - $29,999' 19=' $30,000 - $34,999'
20=' $35,000 - $39,999' 21=' $40,000 - $49,999'
22=' $50,000 - $59,999' 23=' $60,000 and over'
97,98='Not Available' .,99='Not Specified';

/* VARIABLE: H_THInc DESCRIPTION: Total Household Income
and VARIABLE: I_TIInc DESCRIPTION: Total Personal Income

```

```

YEAR(S): 1986 */
value f86Inc
  1='Nil or loss'                2=' $1 - $1,000'
  3=' $1,001 - $2,500'          4=' $2,501 - $5,000'
  5=' $5,001 - $7,500'          6=' $7,501 - $10,000'
  7=' $10,001 - $12,500'        8=' $12,501 - $15,000'
  9=' $15,001 - $17,500'        10=' $17,501 - $20,000'
  11=' $20,001 - $25,000'        12=' $25,001 - $30,000'
  13=' $30,001 - $35,000'        14=' $35,001 - $40,000'
  15=' $40,001 - $50,000'        16=' $50,001 and over'
  98='Not Available'            .,99='Not Specified';

/* VARIABLE: H_THInc DESCRIPTION: Total Household Income
and VARIABLE: I_TInc DESCRIPTION: Total Personal Income
YEAR(S): 1991 */
value f91Inc
  1='Nil or loss'                2=' $1 - $2,500'
  3=' $2,501 - $5,000'          4=' $5,001 - $7,500'
  5=' $7,501 - $10,000'         6=' $10,001 - $15,000'
  7=' $15,001 - $20,000'        8=' $20,001 - $25,000'
  9=' $25,001 - $30,000'        10=' $30,001 - $40,000'
  11=' $40,001 - $50,000'       12=' $50,001 - $70,000'
  13=' $70,001 and over'        98='Not Available'
  .,99='Not Specified';

/* VARIABLE: H_THInc DESCRIPTION: Total Household Income
and VARIABLE: I_TInc DESCRIPTION: Total Personal Income
YEAR(S): 1996,2001 */
value f96Inc
  1='Loss'                        2='Zero Income'
  3=' $1 - $5,000'                4=' $5,001 - $10,000'
  5=' $10,001 - $15,000'         6=' $15,001 - $20,000'
  7=' $20,001 - $25,000'        8=' $25,001 - $30,000'
  9=' $30,001 - $40,000'        10=' $40,001 - $50,000'
  11=' $50,001 - $70,000'       12=' $70,001 -$100,000'
  13=' $100,001 and over'       88='Unidentifiable'
  98='Not Available'            .,99='Not Specified';

```

Table 57 SAS Equivalised Income formats used

```

/*****EQUIVALISED INCOME RELEVANT FORMATS*****/
/* VARIABLE: Income3_I1 - Income3_I3 DESCRIPTION: 3 Group Equivalised H/H Income (Jensen)
YEAR(S): 1981,1986,1991,1996,2001 */
value f3EInc
  1='Lowest Income'              2='Middle'
  3='Highest Income'             9='Missing';

```

```

/* VARIABLE: Income5_I1 - Income5_I3      DESCRIPTION: 5 Group Equivalised H/H Income (Jensen)
   YEAR(S): 1981,1986,1991,1996,2001 */
value f5EInc
  1='Lowest Income'      2='Second Income'      3='Middle'
  4='Fourth Income'      5='Highest Income'     9='Missing';

/*Midpoints to be used for 1981 Income Variable for calculating Eq. Incomes*/
invalue i81Mid
  0=0      1=125      2=375      3=750      4=1500
  5=2750   6=4250   7=5750   8=7250   9=9000
  10=11000 11=13000 12=15000 13=17000 14=19000
  15=21250 16=23750 17=26250 18=28750 19=32500
  20=37500 21=45000 22=55000 23=81213;

/*Median Income to be used for 1986 Income Variable for calculating Eq. Incomes*/
invalue i86Med
  1=0      2=445      3=1641      4=3626      5=6254
  6=8651   7=11255   8=13811   9=16163   10=18626
  11=22200 12=26888 13=32150 14=36927 15=43748
  16=60000;

/*Median Income to be used for 1991 Income Variable for calculating Eq. Incomes*/
invalue i91Med
  1=0      2=850      3=3593      4=6208      5=8761
  6=11571  7=17436  8=22420  9=27321  10=34545
  11=44019 12=56467 13=90200;

/*Median Income to be used for 1996 Income Variable for calculating Eq. Incomes*/
invalue i96Med
  1=-4285  2=0      3=1675      4=8559      5=12528
  6=17281  7=22347  8=27370  9=34360  10=43934
  11=57426 12=81542 13=135600;

/*Median Income to be used for 2001 Income Variable for calculating Eq. Incomes*/
invalue i01Med
  1=-2440  2=0      3=1981      4=8067      5=12547
  6=17236  7=22373  8=27524  9=34668  10=44164
  11=56912 12=80531 13=135948;

/*Median Income to be used for 2006 Income Variable for calculating Eq. Incomes*/
invalue i06Med
  1=-6998  2=0      3=1604      4=7840      5=12345
  6=17084  7=22201  8=27203  9=32119  10=37131
  11=44168 12=57514 13=80725 14=135007;

```

Table 58 SAS Source of Income formats used

```

/*****SOURCE OF INCOME FORMATS*****/
/* VARIABLE: I_PIS_DP DESCRIPTION: Personal Inc. Srce -Domestic Purposes Benefit
and VARIABLE: I_PIS_UB DESCRIPTION: Personal Inc. Srce -Unemployment Benefit
and VARIABLE: I_PIS_None DESCRIPTION: Personal Inc. Srce -No Social Welfare Payments
and VARIABLE: I_PIS_FB DESCRIPTION: Personal Inc. Srce -Family Benefit
YEAR(S): 1981,1986 */
/* VARIABLE: I_PIS_SBIB DESCRIPTION: Personal Inc. Srce -Sickness/Invalids Benefit
and VARIABLE: I_PIS_FC DESCRIPTION: Personal Inc. Srce -Family Care
YEAR(S): 1986 */
/* VARIABLE: I_PIS_SB DESCRIPTION: Personal Inc. Srce -Sickness Benefit
and VARIABLE: I_PIS_IB DESCRIPTION: Personal Inc. Srce -Invalid's Benefit
YEAR(S): 1981 */
value f86IncS
0='Did not have that Benefit' 1='None'
2='Family benefit' 3='Family care'
4='National superannuation [Not Incl]' 5='Domestic purposes benefit'
6='Unemployment benefit' 7='Sickness or invalid's benefit'
8='Widows benefit [Not Incl]' 9='War pension [Not Incl]'
10='Miners benefit/miners workers benefit [Not Incl]'
11='Orphans benefit [Not Incl]' 12='Death benefit [Not Incl]'
13='Assistance for disabled [Not Incl]' 14='Overseas pension [Not Incl]'
15='Disability allowance [Not Incl]' 16='Childcare subsidy [Not Incl]'
17='Accommodation allowance [Not Incl]' 18='Other [Not Incl]'
24='Sickness benefit' 27='Invalid's benefit'
88='Had a Benefit of some kind' 98='Benefit undefined'
.,99='Not specified';

/* VARIABLE: I_PIS_1 DESCRIPTION: Personal Inc. Srce 1 -Fam Ben/Support
YEAR(S): 1991 */
value f1PIS
0='Neither Family Benefit nor Family Support' 1='Family Benefit'
2='Both Family Benefit and Family Support' 3='Family Support'
.,9='Not Specified';

/* VARIABLE: I_PIS_2 DESCRIPTION: Personal Inc. Srce 2 -Super/ACC
YEAR(S): 1991 */
value f2PIS
0='Neither GRI nor Accident Compensation' 1='National Superannuation'
2='Both National Superannuation & ACC' 3='Accident Compensation weekly payments'
.,9='Not Specified';

/* VARIABLE: I_PIS_3 DESCRIPTION: Personal Inc. Srce 3 -DPB/Unemploy
YEAR(S): 1991 */

```

```

value f3PIS
  0='Neither Domestic Purposes Benefit nor Unemployment Benefit'
  1='Domestic Purposes Benefit'
  2='Both Domestic Purposes Benefit and Unemployment Benefit'
  3='Unemployment Benefit'
  .,9='Not Specified';

/* VARIABLE: I_PIS_4 DESCRIPTION: Personal Inc. Srce 4 -Stud/Sick/Invalid
   YEAR(S): 1991 */
value f4PIS
  0="Neither Youth/Student Allowance nor Sickness/Invalid's Benefit"
  1='Youth/Student allowance'
  2="Both Youth/Student Allowance and Sickness/Invalid's Benefit"
  3="Sickness/Invalid's Benefit"
  .,9='Not Specified';

/* VARIABLE: I_PIS_5 DESCRIPTION: Personal Inc. Srce 5 -War/Other Support
   YEAR(S): 1991 */
value f5PIS
  0='Neither War Pension nor other Income Support'      1='War Pension'
  2='Both War Pension and other Income Support'          3='Other Income Support'
  .,9='Not Specified';

/* VARIABLE: I_PIS_6 DESCRIPTION: Personal Inc. Srce 6 -Other Groups
   YEAR(S): 1991 */
value f6PIS
  10='Other'
  11='None'
  12='Widows Pension'
  13='Disability Allowance'
  14='Maintenance from Former Partner [->88]'
  15='Access and Maori Access [->88]'
  16='Accommodation Benefit [->88]'
  17='Independent Youth Benefit [->88]'
  18='Special Benefit [->88]'
  19='Handicapped Childs Allowance [->88]'
  20='Veterans Pension [->88]'
  21='Overseas Pension [->88]'
  22='Job Search Allowance [->88]'
  88='Other Categories [->88]'
  .,99='Not Specified';

/* VARIABLE: I_PIS_AC DESCRIPTION: Personal Inc. Srce -ACC Regular Payments
and VARIABLE: I_PIS_DP DESCRIPTION: Personal Inc. Srce -Domestic Purposes Benefit
and VARIABLE: I_PIS_GB DESCRIPTION: Personal Inc. Srce -Other Government Benefits
and VARIABLE: I_PIS_IB DESCRIPTION: Personal Inc. Srce -Invalids Benefit
and VARIABLE: I_PIS_SB DESCRIPTION: Personal Inc. Srce -Sickness Benefit
and VARIABLE: I_PIS_SE DESCRIPTION: Personal Inc. Srce -Self-employment
and VARIABLE: I_PIS_UB DESCRIPTION: Personal Inc. Srce -Unemployment Benefit
and VARIABLE: I_PIS_WS DESCRIPTION: Personal Inc. Srce -Wages/Salary etc.
   YEAR(S): 1996,2001 */
/* VARIABLE: I_NoSource DESCRIPTION: Personal Inc. Srce -No Source of Income
   YEAR(S): 2001 */

```



```

value fIncS
  1='Wages, salary, commissions, bonuses etc. paid by employer'
  2='Self-employment, or business you own and work in'
  3='Interest, dividends, rent, other investments'
  4='ACC regular payments (or Private Insurance Payments)'
  5='NZ superannuation (or Veterans Pensions)'
  6='Other superannuation, pensions, annuities'
  7='Unemployment benefit'
  8,28='Domestic purposes benefit'
  9,29='Sickness benefit'
  10='Invalid''s benefit'
  11='Student allowance'
  12='Other govt benefits, income support payments or war pensions'
  13='Other sources of income'
  14='No Source of Income During That Time'
  .,99='None';

/* VARIABLE: I_IncSupNum
DESCRIPTION: Number of Personal Income Support Sources Specified excl ACC/GRI
YEAR(S): 1996 */
value f6num
  0='No Source of Income Support'      1='One Source'
  2='Two Sources'                      3='Three Sources'
  4='Four Sources'                    5='Five Sources'
  6='6 or more'
  99='Income Sources Not Stated'      .= 'Missing';

```

Table 59 SAS Geographical formats used

```

/*****GEOGRAPHICAL VARIABLES*****/
/* VARIABLE: G_AHB DESCRIPTION: Area Health Board 1989
YEAR(S): 1981,1986,1991,1996,2001 */
value f89AHB
  1='Northland'      2='Auckland'      3='Waikato'
  4='Bay of Plenty'  5='Tairāwhiti'    6='Hawke''s Bay'
  7='Taranaki'      8='Manawatu/Wanganui' 9='Wellington'
  10='Nelson/Marlborough' 12='West Coast' 13='Canterbury'
  14='Otago'        15='Southland'   88='Overseas'
  99='Not Applicable' .= 'Missing';

/*Area Health Districts 1993 based on 1995 TLAs*/
/* VARIABLE: G_AHD DESCRIPTION: Area Health District 1993
YEAR(S): 1981,1986,1991,1996,2001 */
value f93AHD
  1='Northland'      2='North West Auckland' 3='Central Auckland'
  4='South Auckland' 5='Eastern Bay of Plenty' 6='Rotorua'

```

7='Taupo'	8='Tauranga'	9='Gisborne'
10='Taranaki'	11='Waikato'	12='Ruapehu'
13='Wanganui'	14='Manawatu'	15='Hawke''s Bay'
16='Wairarapa'	17='Hutt'	18='Wellington'
19='Nelson-Marlborough'	20='West Coast'	21='Canterbury'
22='South Canterbury'	23='Otago'	24='Southland'
.,99='Not Applicable';		
/* VARIABLE: G_DHB DESCRIPTION: District Health Board		
YEAR(S): 1981,1986,1991,1996,2001 */		
value f01DHB		
1='Northland'	2='Waitemata'	
3='Auckland'	4='Counties Manukau'	
5='Waikato'	6='Lakes'	
7='Bay of Plenty'	8='Tairāwhiti'	
9='Taranaki'	10='Hawke''s Bay'	
11='Whanganui'	12='Midcentral'	
13='Hutt'	14='Capital and Coast'	
15='Wairarapa'	16='Nelson Marlborough'	
17='West Coast'	18='Canterbury'	
19='South Canterbury'	20='Otago'	
21='Southland'	99='Area outside District Health Board'	
.='Missing';		
/* VARIABLE: G_RC DESCRIPTION: Regional Council		
YEAR(S): 1981,1986,1991,1996,2001 */		
value fRegCo		
1='Northland Region'	2='Auckland Region'	
3='Waikato Region'	4='Bay of Plenty Region'	
5='Gisborne Region'	6='Hawke''s Bay Region'	
7='Taranaki Region'	8='Manawatu-Wanganui Region'	
9='Wellington Region'	12='West Coast Region'	
13='Canterbury Region'	14='Otago Region'	
15='Southland Region'	16='Tasman Region'	
17='Nelson Region'	18='Marlborough Region'	
99='Area Outside Region'	.='Missing';	
/* VARIABLE: G_RHA DESCRIPTION: Regional Health Authority (1989 AHB)		
YEAR(S): 1981,1986,1991,1996,2001 */		
value frha		
1='Northern'	2='Midland'	
3='Central'	4='Southern'	.,9='Not Applicable';
/* VARIABLE: G_TA DESCRIPTION: Territorial Authority 1995		
YEAR(S): 1981,1986,1991,1996,2001 */		
value f95tla		
1='Far North'	2='Whangarei'	

3='Kaipara'	4='Rodney'		
5='North Shore'	6='Waitakere'		
7='Auckland'	8='Manukau'		
9='Papakura'	10='Franklin'		
11='Thames Coromandel'	12='Hauraki'		
13='Waikato'	15='Matamata-Piako'		
16='Hamilton'	17='Waipa'		
18='Otorohanga'	19='South Waikato'		
20='Waitomo'	21='Taupo'		
22='Western Bay of Plenty'	23='Tauranga'		
24='Rotorua'	25='Whakatane'		
26='Kawerau'	27='Opotiki'		
28='Gisborne'	29='Wairoa'		
30='Hastings'	31='Napier'		
32='Central Hawkes Bay'	33='New Plymouth'		
34='Stratford'	35='South Taranaki'		
36='Ruapehu'	37='Wanganui'		
38='Rangitikei'	39='Manawatu'		
40='Palmerston North'	41='Tararua'		
42='Horowhenua'	43='Kapiti Coast'		
44='Porirua'	45='Upper Hutt'		
46='Lower Hutt'	47='Wellington'		
48='Masterton'	49='Carterton'		
50='South Wairarapa'	51='Tasman'		
52='Nelson'	53='Marlborough'		
54='Kaikoura'	55='Buller'		
56='Grey'	57='Westland'		
58='Hurunui'	59='Waimakariri'		
60='Christchurch'	61='Banks Peninsula'		
62='Selwyn'	63='Ashburton'		
64='Timaru'	65='Mackenzie'		
66='Waimate'	67='Chatham Islands'		
68='Waitaki'	69='Central Otago'		
70='Queenstown-Lakes'	71='Dunedin'		
72='Clutha'	73='Southland'		
74='Gore'	75='Invercargill'		
888='Overseas'	901-998='Other Groupings (N/A)'		
999='TLA Not Applicable'	.='Missing';		
/*Create Rurality Variable from 1981 Urban Area Coding*/			
invalue i81Rur			
01-23=1	24-37=2	38=3	41=4
40=5	39,88,96,98=6;		
/*Create Rurality Variable from 1991 Urban Area Coding*/			
invalue i91Rur			
01-20,22,23,46,47=1	21,24-37=2	38=3	41=4

```

40=5          39,42-45,88,96,98=6;

/*Create Rurality Variable from 2001 Urban Area Coding (also used for 1996)*/
invalue i01Rur
001-025=1          101-115=2      201-300=3          501=4
502=5          505,506,507,510,511=6;

/* VARIABLE: G_Rurality DESCRIPTION: Rurality Indicator
YEAR(S): 1981,1986,1991,1996,2001 */
value f6Rur
1='Main Urban Area'          2='Secondary Urban Area'
3='Minor Urban Area'        4='Rural Centre'
5='Other Rural'            6='Other (Inland Water, Inlet, and Oceanic)'
.='Missing';

```

Table 60 SAS Deprivation formats used

```

/*****DEPRIVATION FORMATS*****/
/* VARIABLE: NZDep91 DESCRIPTION: 1991 NZ Deprivation Quintiles
YEAR(S): 1981,1986,1991 */
/* VARIABLE: NZDep96 DESCRIPTION: 1996 NZ Deprivation Quintiles
YEAR(S): 1996 */
/* VARIABLE: NZDep2001 DESCRIPTION: 2001 NZ Deprivation Quintiles
YEAR(S): 2001 */
/* NOTE: Used to derive NZDep5 */
invalue idquin
1,2=1      3,4=2      5,6=3      7,8=4      9,10= 5      .,0=.;

/* VARIABLE: NZDep5 DESCRIPTION: NZ Deprivation Quintile
YEAR(S): 1981,1986,1991,1996,2001 */
value fdquin
1, -1='Dep1&2'          2, -2='Dep3&4'          3, -3='Dep5&6'          4, -4='Dep7&8'
5, -5='Dep9&10'          .='Miss Dep';

```

Table 61 SAS Smoking formats used

```

/*****SMOKING FORMATS*****/
/* VARIABLE: SmkCur DESCRIPTION: Current Smoking Status
YEAR(S): 1981 */
value fSmkC
0='Never Smoked Cigarettes'          1='Used to Smoke'
2='Currently Smoking Regularly'      .,9='Not Specified';

/* VARIABLE: SmkEver DESCRIPTION: Ever Smoked
YEAR(S): 1996 */

```

```

value fSmkE
    1='Yes - Smoked'                2='No - Never Smoked'
    3='Unidentifiable'              .,9='Not Specified';

/* VARIABLE: SmkQnt  DESCRIPTION: Quantity of Cigarettes Smoked in a day (23/3/81)
   YEAR(S): 1981 */
value fSmkQ
    0='Nil, but otherwise smoked regularly'  1- 4=' 1- 4 Cigarettes'
    5- 9=' 5- 9 Cigarettes'                  10=' 10 Cigarettes'
    11-14='11-14 Cigarettes'                 15-19='15-19 Cigarettes'
    20=' 20 Cigarettes'                      21-24='21-24 Cigarettes'
    25-29='25-29 Cigarettes'                 30=' 30 Cigarettes'
    31-34='31-34 Cigarettes'                 35-39='35-39 Cigarettes'
    40=' 40 Cigarettes'                      41-44='41-44 Cigarettes'
    45-49='45-49 Cigarettes'                 50=' 50 Cigarettes'
    51-54='51-54 Cigarettes'                 55-59='55-59 Cigarettes'
    60=' 60 Cigarettes'                      61-64='61-64 Cigarettes'
    65-69='65-69 Cigarettes'                 70=' 70 Cigarettes'
    71-74='71-74 Cigarettes'                 75-79='75-79 Cigarettes'
    80=' 80 Cigarettes'                      81-84='81-84 Cigarettes'
    85-89='85-89 Cigarettes'                 90=' 90 Cigarettes'
    91-94='91-94 Cigarettes'                 95-96='95-96 Cigarettes'
    97='97 or more Cigarettes'                98='Not Applicable'
    .,99='Not Specified';

/* VARIABLE: SmkReg  DESCRIPTION: Smoking Regularly
   YEAR(S): 1996 */
value fSmkR
    1='Smoking Regularly'                2='Not Smoking Regularly'
    3='Unidentifiable'                    .,9='Not Specified';

/* VARIABLE: SmkStat  DESCRIPTION: Smoking Status
   YEAR(S): 1996 */
value fSmkS
    1='Smoker'                            2='Ex-Smoker'
    3='Never Smoked Regularly'            4='Unidentifiable'
    .,9='Not Specified';

```

Table 62 SAS Baby Born formats used

```

/*****BABY BORN FORMATS*****/
/* VARIABLE: BabyBrn  DESCRIPTION: Number of Live Babies Given Birth To
   YEAR(S): 1981,1996*/
/*Note : The two formats for BabyBrn have been collapsed and the 1981 value changed*/
value fBBrn
    0='No Children'          1='1 Child'          2='2 Children'

```

3='3 Children'	4='4 Children'	5='5 Children'
6='6 Children'	7='7 Children'	8='8 Children'
9='9 Children'	10='10 Children'	11='11 Children'
12='12 Children'	13='13 Children'	14='14 Children'
15='15 Children'		
16='16 or More Children'	/*1981 Only. Originally had value 10*/	
20='10 or More Children'	/*1996 Only*/	
88='Unidentifiable'	/*1996 Only*/	
98='Not Applicable'	99='Not Specified';	

Table 63 SAS Telephone formats used

```

/*****TELEPHONE FORMATS*****/
/* VARIABLE: H_Teleph  DESCRIPTION: Telephone in Dwelling
   YEAR(S): 1981,1996 */
value fTele
  1='Yes - Have Telephone'          0,2='No - No Telephone'
  3='Unidentified'                  ..,9='Not Specified';

/* VARIABLE: H_Teleph  DESCRIPTION: Telephone in Dwelling
   YEAR(S): 2001 */
/* VARIABLE: H_Internet  DESCRIPTION: Access to Internet in Dwelling
   YEAR(S): 2001 */
/* VARIABLE: H_NoTelecom  DESCRIPTION: No Access to Telecomms in Dwelling
   YEAR(S): 2001 */
value f01Tel
  1='Access to a Telephone'          3='Access to the Internet'
  0='No Access to Telecommunication Systems'  9='Not Stated'
  .='Missing';

```

Table 64 SAS Motor Vehicle formats used

```

/*****MOTOR VEHICLE FORMATS*****/
/* VARIABLE: H_Mveh  DESCRIPTION: Number of Motor vehicles in household
   YEAR(S): 1981,1986,1991,1996,2001 */
value fcar
  0='Nil Cars'          1='1 Car'          2='>=2 Cars'          .,9='Missing';

/* VARIABLE: CarAccess  DESCRIPTION: Number of Motor vehicles in household
   YEAR(S): 1981,1986,1991,1996,2001 */
invalue i2max
  0=0          1=1          2-8=2          .,9=9;

```

Table 65 SAS Sex formats used

```

/*****SEX FORMATS*****/
/* VARIABLE: Sex      DESCRIPTION: Sex
   YEAR(S):  1981,1986,1991,1996,2001 */
value fvsex
    1='Males'      2='Females';

```

Table 66 SAS Languages Spoken formats used

```

/*****LANGUAGES SPOKEN FORMATS*****/
/* VARIABLE: LangInd  DESCRIPTION: Official Language Indicator
   YEAR(S):  1996 */
value f96Lang
    1='English but not NZ Māori'      2='NZ Māori but not English'
    3='English and NZ Māori'          4='Neither English nor NZ Māori'
    5='No Language'                   6='Not Applicable'
    .,9='Not Specified';

/* VARIABLE: LangInd  DESCRIPTION: Official Language Indicator
   YEAR(S):  2001 */
value f01Lang
    1='Māori Only'                    2='English Only'
    3='Māori and English'              4='Māori and Other (Not English)'
    5='English and Other (Not Māori)'   6='Māori, English and Other'
    7='Other Language(s) Only (Neither Māori nor English)'
    8='No Language'                    97='Response Unidentifiable'
    98='Response Outside Scope'        .,99='Not Stated';

```

Table 67 SAS Religion formats used

```

/*****RELIGION FORMATS*****/
/* VARIABLE: Religion  DESCRIPTION: Religion
   YEAR(S):  1981,1986,1991,1996,2001 */
value f01rel
    0='No Religion'                   1='Buddhist'
    2='Christian'                     3='Hindu'
    4='Islam/Muslim'                  5='Judaism/Jewish'
    6='Māori Christian'               7='Spiritualism and New Age Religions'
    8='Other Religions'               94="Don't Know"
    95='Object to Answering'          97='Response Unidentifiable'
    98='Response Outside Scope'       .,99='Not Stated/Not Specified';

```

Table 68 SAS Dwelling Type formats used

```

/*****DWELLING TYPE FORMATS*****/
/* VARIABLE: H_DwgTpG DESCRIPTION: Dwelling Type (Detailed)
YEAR(S): 1981 */
value f81dtpe
1='Private Dwelling: Separate house (1 H/H)'
2='Private Dwelling: House or flat attached to business premises'
3='Private Dwelling: House (2 or more H/Hs) with shared facilities'
4='Private Dwelling: House with other private dwellings attached'
5='Private Dwelling: Self-contained flat or apartment'
6='Private Dwelling: Townhouse, rowhouse, villa unit'
7='Private Dwelling: Bach, Crib, hut (not in work camp)'
8='Private Dwelling: Mobile or moveable home'
9='Other private dwellings, incl. temporary'
10='Hotel, Motel, Private Hotel, Guest House'
11='Boarding or Rooming House'
12='Educational Institution (school hostel etc)'
13='Religious institution (convent, monastery)'
14='Hospital, convalescent home'
15='Home for Elderly'
16='Welfare Inst. (church hostel, night shelter)'
17='Other camp or hostel (youth or immigration)'
18='Motor camp'
19='Prison, police lock up or station'
20='Armed forces camp, vessel etc'
21='Staff quarters, nurses home etc'
22='Seasonal group quarters (shearers etc)'
23='Vessel (not Navy)'
24='Communes'
25='Other non private dwelling (fire stations etc)';

/* VARIABLE: H_DwgTp DESCRIPTION: Dwelling Record Type
YEAR(S): 1981,1986,1991,1996,2001 */
value f96dtyp
1='Private Dwelling' 2='Non-Private Dwelling' .,9='Not Elsewhere Included';

/* VARIABLE: H_DwgNat DESCRIPTION: Nature of Dwelling [On Individual Dataset]
YEAR(S): 1986,1991 */
value f91dnat
1='Permanent Private Dwelling' 2='Temporary Private Dwelling'
3='Non-Private Dwelling' .,9='Not Elsewhere Included';

/* VARIABLE: H_DwgTpG DESCRIPTION: Dwelling Type (Detailed)
YEAR(S): 1996,2001 (1996 two digit)*/

```


value f01dtpe

1000='Private Dwelling Not Further Defined'
1100='Permanent Private Dwelling Not Further Defined'
01,1111='Separate House'
02,1112='Two Flats/Units/Townhouses/Apartments/Houses Joined Together'
03,1113='>=3 Flats/Units/Townh./Apart./Houses Joined Together, in 1or2 Storey Build'
04,1114='>=3 Flats/Units/Townh./Apart./Houses Joined Together, in >=3 Storey Building'
05,1115='Flat/Unit/Townhouse/Apart. or House Joined to or Part of a Business or Shop'
06,1116='Bach, Crib or Other Holiday Home'
1200='Temporary Private Dwelling Not Further Defined [->1299]'
07,1211='Caravan, Cabin, Tent or Mobile Unit in a Motor Camp'
08,1212='Mobile Units Not in a Motor Camp'
1213='Makeshift Dwelling and or Shelter [->1299]'
1214='Roofless and or Rough Sleeper [->1299]'
1299='Other Temporary Private Dwellings '
25,2000='Non-Private Dwelling Not Further Defined'
2100='Institution Not Further Defined [->2199]'
10,2111='Home for the Elderly, Retirement Home (Cared)'
15,2112='Public Hospital, Convalescent Home or Maternity Home, Health Camp'
16,2113='Private Hospital, Convalescent Home or Maternity Home, Health Camp'
2114='Welfare Institution (excluding Night Shelters) [->2197]'
13,2115='Educational Institution'
14,2116='Religious Institution [->2199]'
22,2117='Prison, Penal Institution, Police Lock-up'
21,2118='Defence Establishment (includes Navy Vessels)'
2119='Night Shelter [->2197]'
12,2197='Welfare Institution (Including Night Shelters)'
2198='Hospital, Convalescent Home or Maternity Home, Health Camp'
2199='Other Institutions'
2200='Other Non-Private Dwelling Not Further Defined [->2299]'
09 = 'Hotel,Motel,Guest Hse or Boarding Hse (incl. NZPost Welf. Cott, TimeShareUnits)'
2211='Hotel, Motel, or Guest House'
2212='Residential and or Community Care Facilities'
2213='Boarding House'
11,2214='Motor Camp'
19,2215='Work Camp, Construction Camp, Training Camp [->2299]'
18,2216='Yth Camp,Sch Camp,Scout/Guide Camp(inc Yth or Immig. Hostel,Trampers Hut)'
17,2217='Staff Quarters, Nurses Home (including Seasonal Group Quarters) [->2299]'
20,2218='Vessel (except Navy Vessel)'
23,2219='Commune [->2299]'
24,2220='Marae'
2299='Other Non-Private Dwellings';

/* VARIABLE: H_DwgTpG DESCRIPTION: Dwelling Type (Detailed)

YEAR(S): 1986,1991 */

value f91dtpe

01='Separate House'

```

02='Two Flats or Houses Joined Together'
03='Three or More Flats or Houses Joined Together'
04='Flat or House Joined to a Business or Shop'
05='Bach, Crib or Hut (not in a work camp)'
06='Caravan, Cabin or Tent in a Motor Camp'
07='Other (such as yacht)'
1280='Mobile or temporary dwelling'
1290='Other Private Dwelling'
09='Non Specified private dwelling'
11='Hotel, Motel, Guest House, Private Hotel'
12='Boarding/Rooming House'
13='Home for the Elderly'
14='Public Hospital - incl. maternity/convalescent home'
15='Private Hospital - incl. maternity/convalescent home'
16='Motor Camp'
17='Welfare Institution - Church Hostel, night shelter, orphanage etc'
18='Educational Institution, School Hostel, Seminary'
19='Religious Institution - Convent, Monastery (excl. educational institution)'
20='Work Camp, Construction Camp, Training Camp [->2299]'
21='Youth Camp, School Camp, Scout/Guide Camp, youth or immigration hsp'
22='Staff Quarters, Nurses Home [->2299]'
23='Seasonal Group Quarters [->2299]'
24='Prison, Penal Institution [->2117]'
25='Defence Area - Armed Forces Camp, Naval Base, Navy Vessel'
26='Vessel (except navy vessel)'
27='Commune [->2299]'
28='Police Lock-up [->2117]'
29='Other - fire station, marae, lighthouse'
2117='Prison, Penal Institution, Police Lock-up or station'
2199='Other Institutions'
2299='Other Non-Private Dwellings';

```

```
/* VARIABLE: H_OwnDwell DESCRIPTION: Ownership of Dwelling
```

```
YEAR(S): 2001 */
```

```
value f01DwO
```

```
1='Dwelling Owned or Partly Owned by the Usual Resident(s)'
```

```
2='Dwelling is not Owned or Partly Owned by the Usual Resident(s)'
```

```
7='Response Unidentifiable'
```

```
.,9='Not Stated';
```

Table 69 SAS Household Composition formats used

```
*****HOUSEHOLD COMPOSITION FORMATS*****
```

```
/* VARIABLE: H_UsHHC DESCRIPTION: Usual Household Composition
```

```
YEAR(S): 1981,1986 */
```

```
value f81UHC
```

```

1='Couples Only'
2='Couples with Children'
3='One Parent Family'
4='Couples Only plus Others'
5='Couples with Children plus Others'
6='One Parent Family plus Others'
7='Two 2 Parent Families with or without Children'
8='Two Parent plus One Parent Family'
9='Two 1 Parent Families'
10='Three or More Families'
11='Non-Family Households'
12='One-Person Households'
13='Not Elsewhere Classified. i.e. Visitors only'
.,99='Missing or Not Applicable';

```

```

/* VARIABLE: H_Type DESCRIPTION: Household Type
YEAR(S): 1981 */

```

```
value f81HHT
```

```

10='Husband and wife only (no absentees)'
12='Husband and wife only (other(s) absent)'
11='Husband and wife + children (No absentees)'
13='Husband and wife + children (other(s) absent)'
20='Husband and wife only (>= children absent)'
21='Husband and wife + children (>=1 children absent)'
22='Husband and wife only (>= children absent, and other(s) absent) [=>23]'
23='Husband and wife + children (>=1 children absent, and other(s) absent)'
24='One parent + children (spouse temp. abs.)'
25='One parent + children (no absentees)'
26='One parent + children (>=1 children absent, spouse perm. abs.) [DD says temp]'
27='One parent + children (>=1 children, spouse and other(s) temp. abs.) [DD says perm]'
28='One parent + children (>=1 children, spouse and other(s) temp. abs.) [=>30]'
29='One parent + children (>=1 children, and other(s) temp. abs., spouse perm. abs.) [=>31]'
30='One parent + children (spouse and other(s) temp. abs.)'
31='One parent + children (other(s) temp. abs., spouse perm. abs.)'
40='Husband and wife plus other(s) (with or without absentees)'
41='Husband and wife + children, plus other(s), +/- absentees'
42='One parent + children + other(s) related to parent (spouse temp. abs.)'
43='One parent + children + other(s) related to parent (spouse perm. abs.)'
44='One parent + children + other(s) not related to parent (spouse temp. abs.) [=>46]'
45='One parent + children + other(s) not related to parent (spouse perm. abs.)'
46='One parent + children + other(s) +/- related to parent (spouse temp. abs.)'
47='One parent + children + other(s) +/- related to parent (spouse perm. abs.)'
50='Two Couples +/- children'
51='Two One-Parent + children [DD says Couple+children & OnePar+Children]'
52='Couple +/- children and One parent + children'
53='Two One-Parent + children [Metadata says Two fam&OnePar+children]'
54='Two families (+ absentees) [Meta says +other(s)]'
55='Two families, plus other person(s) (+/- absentees)'
60='Three or more families, +/- other person(s) (no absentees)'
61='Three or more families, +/- other person(s) (with absentees)'
70='Relatives only'
71='Persons not related'
72='One person (on census night) [DD says Related & Not Related]'

```

```

80='Usually a one-person household (no absentees)'
81='A one-person household (related person(s) temp. abs.) [=83]'
82='A one-person household (non-related person(s) temp. abs.) [=83]'
83='A one-person household (+/- related person(s) temp. abs.)'
.='Missing';

/* VARIABLE: for creating H_UsHHC for 1991*/
invalue $i91hhc
'01'=111 '06'=120 '04'=121 '05'=122 '02'=131 '09'=140
'07'=141 '08'=142 '03'=151 '12'=160 '10'=161 '11'=162
'15'=210 '13'=211 '14'=212 '18'=220 '16'=221 '17'=222
'21'=230 '19'=231 '20'=232 '22'=311 '23'=411 '24'=421
'26'=429 '25'=431 '27'=511 '28'=601;

/* VARIABLE: H_UsHHC DESCRIPTION: Usual Household Composition
YEAR(S): 1991,1996,2001 */
value f01hhc
111='Couple Only'
120='Couple Only and Other Person(s) nfd'
121='Couple Only and Other Person(s), Some or All Related'
122='Couple Only and Other Person(s), All Unrelated'
131='Couple With Child(ren)'
140='Couple With Child(ren) and Other Person(s) nfd'
141='Couple With Child(ren) and Other Person(s), Some or All Related'
142='Couple With Child(ren) and Other Person(s), All Unrelated'
151='One Parent With Child(ren)'
160='One Parent With Child(ren) & Other Person(s) nfd'
161='One Par. With Child(ren) & Other Person(s), Some or All Related'
162='One Parent With Child(ren) & Other Person(s), All Unrelated'
219='Other 2-Parent Families'
210='Two 2-Parent Families nfd (Rel. betwn Fam Nuc Unknown) [->219]'
211='Two Related 2-Parent Families [->219]'
212='Two Unrelated 2-Parent Families [->219]'
220='One 2-Par.Fam & a 1-Par. Fam. nfd (Rel. bet. Fam Nuc Unknwn)[->229]'
221='One 2-Parent Family Related to a 1-Parent Family [->229]'
222='One 2-Parent Family Unrelated to a 1-Parent Family [->229]'
229='Other 2-Parent Families with other 1-Parent Families'
230='Two 1-Parent Families nfd (Rel. betwn Fam Nuc Unknown)[->239]'
231='Two Related 1-Parent Families [->239]'
232='Two Unrelated 1-Parent Families [->239]'
239='Two 1-Parent Families'
241='Other 2-Family Household'
311='Three- or More Family Household (With or Without Other People)'
400='Other Multiperson Household nfd [->429]'
411='Household of Related People [->429]'
421='Household of Related and Unrelated People [->429]'
429='Other Multiperson Households nfd'

```

```

431='Household of Unrelated People'
511='One-Person Household'
601='Visitor-only household'
611='Household Composition Unidentifiable'
.='Missing';

```

Table 70 SAS Family Type formats used

```

/*****FAMILY TYPE FORMATS*****/
/* VARIABLE: F_FamGroup DESCRIPTION: Identification of Individual's Family Nucleus
YEAR(S): 1986,1991 */
value f91FamG
0='Parent (1st family)'      1='Child (1st family)'
2='Parent (2nd family)'     3='Child (2nd family)'
4='Parent (3rd family)'     5='Child (3rd family)'
6='Member (other families)' 7='Non Family Person'
8='Person Alone'           9='Guest'
99='Missing';

/* VARIABLE: F_FamilyInd DESCRIPTION: Family Indicator [On Family Dataset]
YEAR(S): 1991 */
/* VARIABLE: FamilyInd DESCRIPTION: Family Indicator [On Individual Dataset]
YEAR(S): 1991 */
value f91FamI
7='One Parent Family'      8='Two Parent Family/Couple Only'
9='Non-Family Unit'       .='Missing';

/* VARIABLE: F_FamType DESCRIPTION: Family Type
YEAR(S): 1991 */
value f91FamT
1='One Parent Family with Dependent Children Only'
2='One Parent Family with Dependent & Adult Children'
3='One Parent Family with Adult Children Only'
4='Two Parent Family with Dependent Children Only (Youngest <= 0-4 Yrs)'
5='Two Parent Family with Dependent Children Only (Youngest <= 5-12 Yrs)'
6='Two Parent Family with Dependent Children Only (Youngest <= 13-15 Yrs)'
7='Two Parent Family with Dependent Children Only (Youngest <= 16-18 Yrs)'
8='Two Parent Family with Dependent & Adult Children (Youngest <= 0-4 Yrs)'
9='Two Parent Family with Dependent & Adult Children (Youngest <= 5-12 Yrs)'
10='Two Parent Family with Dependent & Adult Children (Youngest <= 13-15 Yrs)'
11='Two Parent Family with Dependent & Adult Children (Youngest <= 16-18 Yrs)'
13='Two Parent Family with Adult Children Only'
14='Couple Only with Wife Aged 0-29 Years'
15='Couple Only with Wife Aged 30-44 Years'
16='Couple Only with Wife Aged 45-59 Years'
17='Couple Only with Wife Aged >=60 Years'

```

```

        .='Missing';

/* VARIABLE: F_FamType  DESCRIPTION: Family Type
   YEAR(S): 1996 */
value f96FamT
11='Couple without children'
21='Couple with dependent children only'
22='Couple with dependent and adult children'
23='Couple with adult children only'
29='Couple with children, dependency status not classifiable'
31='One parent family with dependent children only'
32='One parent family with dependent and adult children'
33='One parent family with adult children only'
39='One parent family with children, dependency status not classifiable'
91='Family type not classifiable'
        .='Missing';

/* VARIABLE: F_FamilyInd  DESCRIPTION: Family Indicator
   YEAR(S): 1996 */
value f96FamI
1='Couple Only'                2='Two Parent Family'
3='One Parent Family'         9='Family Not Classifiable'
        .='Missing';

/* VARIABLE: FamType  DESCRIPTION: Family Type [On Individual Dataset]
   YEAR(S): 2001 */
value f01FamT
0='Guest or Visitor'          1='First Family Nucleus'
2='Second Family Nucleus'    3='Third Family Nucleus'
4='Fourth Family Nucleus'    5='Fifth Family Nucleus'
6='Sixth Family Nucleus'     7='Seventh Family Nucleus'
8='Eighth Family Nucleus'    9='Ninth Family Nucleus'
10='Not in a Nucleus, But Related to a Nucleus'
20='Related Group of People in No Nucleus Household'
30='Living Alone'
40='Not Related' /*(to a Nucleus, if One is Present, or Anyone Else if No Nucleus Present)*/
50='Unable to Code';

/* VARIABLE: F_FamGroup  DESCRIPTION: Identification of Individual's Family Nucleus
   [On Individual Dataset]
   YEAR(S): 2001 */
value f01FamG
11='First family nucleus'    21='Second family nucleus'
31='Third family nucleus'    41='Fourth and susequent family nuclei'
51='Person related to a family nucleus' 52='A related person (no family nucleus)'
53='An unrelated person'    54='Living Alone'
55='Guest/visitor/inmate/patient/resident'  .,99='Family nucleus unidentifiable';

```

```

/* VARIABLE: F_RoleFam DESCRIPTION: Role within Family
YEAR(S): 1981 */
value f81RoIF
0='Non-private dwelling' 1='Father role in family'
2='Mother role in family' 3='Child or grandchild role in family'
4='Persons related to members of the first family'
5='All other non-family persons (incl. single person household)';

/* VARIABLE: F_RoleFam DESCRIPTION: Role within Family
YEAR(S): 1996 */
value fRoleF
0='Does not belong to a family group'
1='Parent of a child within the nucleus or partner/spouse'
2='Child of the nucleus'
3='Grandparent in parental role'
4='Other person in parental role'
5='Child in child-only household'
11='Sibling in a group of siblings'
21='Related person in a group of non-sibling related people, same generation'
22='Related person in a group of non-sibling related people, two generations'
23='Related person in a group of non-sibling related people, three generations'
50='Unable to allocate'
.='Not in subject population';

```

Table 71 SAS Child Dependency formats used

```

/*****CHILD DEPENDENCY FORMATS*****/
/* VARIABLE: H_DepStat DESCRIPTION: Child Dependency Status of Household
YEAR(S): 2001 */
value fDepHH
0='No Children'
1='Dependent Children Only'
2='Adult Children Only'
3='Dependent and Adult Children Only'
4='Dep Children + Child(ren) of Unknown Dependency'
5='Adult Child(ren) + Child(ren) of Unknown Dependency'
6='Dep Child + Adult Child + Unknown Dependency'
7='Children of Unknown Dependency'
9='Not Further Defined, Other or Unidentifiable'
.='Missing';

/* VARIABLE: ChildDep DESCRIPTION: Child Dependency Status Indicator
YEAR(S): 1996,2001 */
value fChdDep
1='Dependent Child' 2='Adult Child'

```

```
3,9='Child Dependency Status Unknown'    .='Not in the Subject Population';
```

Table 72 SAS Tenure formats used

```
/* ****TENURE FORMATS**** */
/* VARIABLE: H_Tenure  DESCRIPTION: Tenure of Household
   YEAR(S): 1981 */
value f81Tenr
  1='Owned - without mortgage'      2='Owned - with mortgage'
  3='Rented - not from employer'    4='Rented - from employer'
  5='Rented - undefined'           6='Provided free not with job'
  7='Provided free with job'       .,9='Tenure Not Specified';

/* VARIABLE: H_Landlord  DESCRIPTION: Category of Landlord
   YEAR(S): 1981 */
value f81Land
  0='Not applicable (Tenure = 1,2,5,6,9)'      1='Housing Corporation'
  2='Other Central Govt. agency or dept.'      3='Local Authority'
  4='Individual person, company, partnership etc' 5='Other'
  9='Not Specified (Tenure = 3,4,7)'          .='Missing';

/* VARIABLE: H_Tenure  DESCRIPTION: Tenure of Household
   YEAR(S): 1996,2001 */
value f96Tenr
  1,11='Owned with Mortgage'      2,12='Owned without Mortgage'
  3,10='Owned, Mortgage Not Specified'  4,22='Provided Rent Free'
  5,21='Rented'                    6,20='Not Owned, Rental Status Not Specified'
  .,9,99,77='Not Specified';

/* VARIABLE: Tenure_Holder  DESCRIPTION: Tenure Holder in Residence
   YEAR(S): 2001 */
value f01TenH
  1='Own or Partly Own Usual Residence'      2='Do Not Own Usual Residence'
  7='Response Unidentifiable'              .,9='Not Stated/Not Specified';
```

Table 73 SAS Nature of Occupancy formats used

```
/* ****NATURE OF OCCUPANCY FORMATS**** */
/* VARIABLE: H_NOccy  DESCRIPTION: Nature of Occupancy
   YEAR(S): 1986 */
value f810cc
  1='Owned with Mortgage'
  2='Owned without Mortgage'
  3='Rented/Leased from Priv. Person/Comp.-Furnished'
  4='Rented/Leased from Priv. Person/Comp.-Unfurnished'
```


<pre> 5='Rented/Leased from Priv. Person/Comp.-Furnishing Not Spec.' 6='Rented/Leased from Housing Corp.' 7='Rented/Leased from Other Govt Depts' 8='Rented/Leased from Local Authority' 9='Rented/Leased from Landlord Not Spec.' 10='Provided Rent Free' .,99='Tenure Not Specified'; </pre>
<pre> /* VARIABLE: H_NOccy DESCRIPTION: Nature of Occupancy YEAR(S): 1991 */ value f910cc </pre>
<pre> 0='Owned with Mortgage' 1='Owned without Mortgage' 2='Provided Rent Free' 3='Private Person (rented or leased)' 4='Real Estate Agency (rented or leased)' 5='Housing Corporation (rented or leased)' 6='Other Government Departments (rented or leased)' 7='Local Authority (rented or leased)' 8='Landlord Not Specified (rented or leased)' .,9='Tenure Not Specified'; </pre>
<pre> /* VARIABLE: H_NOccy DESCRIPTION: Nature of Occupancy YEAR(S): 1996 */ value f960cc </pre>
<pre> 1='Owned with Mortgage' 2='Owned without Mortgage' 3='Owned, Mortgage not specified' 4='Provided Rent Free' 5='Private Person (rented or leased)' 7='Housing New Zealand (rented or leased)' 8='Other Central Government Agency (rented or leased)' 6='Local Authority or City Council (rented or leased)' 9='Business, Real Estate Agency or other organisation (rented or leased)' 10='Landlord Not Specified (rented or leased)' 11='Not Owned, Rental status not specified' .,99='Tenure Not Specified'; </pre>
<pre> /* VARIABLE: H_NOccy DESCRIPTION: Nature of Occupancy (Sector of Landlord) YEAR(S): 2001 */ value f01Lld </pre>
<pre> 11='Private Person' 12='Private Trust' 21='Local Authority or City Council' 31='Housing New Zealand' 32='Other State-Owned Corporation/SOE/Govt Dept/Ministry' 41='Business or Other Organisation' 44='Don't Know' .,99='Not Stated'; </pre>

Table 74 SAS Imputation Field formats used

<pre> /*****IMPUTATION FIELD FORMATS*****/ /* VARIABLE: Imp DESCRIPTION: Imputation Indicator YEAR(S): 1991 */ </pre>

```

value f91IImp
    0='None'
    1='Age'
    2='Sex'
    3='Total Hours Worked'
    4='Sex & Age'
    5='Sex & Total Hours Worked'
    6='Age & Total Hours Worked'
    7='Sex, Age & Total Hours Worked'
    .='Not Applicable';

/* VARIABLE: ImpAge DESCRIPTION: Age Imputation Indicator
YEAR(S): 1996 */
value f96IAge
    .,0='No Imputation'
    1='Imputed from Family'
    2='No Information'
    3='From Dwelling Form'
    4='Conflicting Information';

/* VARIABLE: ImpForm DESCRIPTION: Form Imputed Indicator (Dummy Form)
YEAR(S): 1996,2001 */
value f01IDum
    0='Non-Dummy Individual Form'
    1='Dummy IF from Dummy Household' /* 1996 Only */
    2='Dummy IF from incomplete household' /* 1996 Only */
    3='Dummy IF from Dummy Household' /* 2001 Only */
    4='Dummy IF from incomplete household' /* 2001 Only */
    .='Missing' ;

/* VARIABLE: H_Dummy DESCRIPTION: Dummy Dwelling Form Indicator
YEAR(S): 2001 */
value f01HDum
    0='Non-Dummy Form'
    1='Dummy Form';

/* VARIABLE: ImpAgeStr DESCRIPTION: Age Imputation Indicator
YEAR(S): 2001 */
value $f01IAge
'0'='No Imp. Needed (Age Calc. from DOB on IF. Not Applicable for Absentees)'
'1'='Age Imputed by Method I (from Spouse)'
'2'='Age Imputed by Method II (from Child)'
'3'='Age Imputed by Method III (from Parent)'
'4'='Age Imputed by Method IV (from Grandparent)'
'5'='Age Imputed by Method V (from Grandchild)'
'6'='Age Imputed by Method VI (from Sibling)'
'7'='Age Imputed by Method VII (from General Distributions)'
'8'='Age Copied from DF (ie DFAge or Absentee Age)'
'A'='Age Imputed from Spouse by Method I'
'B'='Age Imputed from Child by Method II'
'C'='Age Imputed from Parent by Method III'
'D'='Age Imputed from Grandparent by Method'
'E'='Age Imputed from Grandchild by Method'

```

```
'F'='Age Imputed from Sibling by Method'
'X'='Age Imputed from General Distribution';

/* VARIABLE: ImpMonth DESCRIPTION: Month of Birth imputed
YEAR(S): 1981,1986,1991,1996,2001 */
value fImpMth
0='No Imputation of Months'
1='Month Imputed'
10='Age in yrs and Age in Month incompatible. Months adjusted'
11='Month Imputed but incompatible with age in years. Months adjusted';

/* VARIABLE: imp1EthCombiSmall imp2EthCombiSmall imp3EthCombiSmall DESCRIPTION: Imputed Ethnicity
YEAR(S): 1981,1986,1991,1996,2001 */
value EthCombi /*Full Format Name=EthCombiFormat*/
1 = "E[uropean/Other]" 2 = "M[āori]" 3 = "M+E" 4 = "P[acific]"
5 = "P+E" 6 = "P+M" 7 = "P+M+E" 8 = "A[sian]"
9 = "A+E" 10 = "A+M" 11 = "A+M+E" 12 = "A+P"
13 = "A+P+E" 14 = "A+P+M" 15 = "A+P+M+E" ;
```

Table 75 SAS Usual Residence or Years in NZ formats used

```
/******USUAL RESIDENCE OR YEARS IN NZ FORMATS*****/
/* VARIABLE: UsInd DESCRIPTION: Usual Residence Indicator
YEAR(S): 1981 */
value f81USI
0='Different from Census Night Address' 1='Same as Census Night Address'
2='Different from CN but Meshblock Same' .='Not Applicable';

/* VARIABLE: UsInd DESCRIPTION: Usual Residence Indicator
YEAR(S): 1986,1991,1996 */
/*1986 has code 3=No fixed abode, 4=Overseas, but only has the values 1,2,3,.
1991 has code 3=Overseas, 4=No fixed abode, but only has the values 1,2,4,5,.
therefore labelled this way as our data does not have Overseas people*/
value fUSI
1='Same as Census Night Address' 2='Elsewhere in New Zealand'
3,4='No Fixed Abode' 5='Not Specified (within NZ)'
6='Assume Same as Census Night' 8='Assume Not Usual Residence'
.='Not Applicable';

/* VARIABLE: UsInd DESCRIPTION: Usual Residence Indicator
YEAR(S): 2001 */
value f01USI
1='Same as Census Night Address' 2='Elsewhere in New Zealand'
3='Overseas' 4='No Fixed Abode'
.='Not Applicable';
```

```

/* VARIABLE: YrRes5yrs   DESCRIPTION: Usual Residence Five Years Ago Indicator
   YEAR(S): 1986 */
value f86ur5y
1='Same as Usual Address'           2='Elsewhere in New Zealand'
3='Not Alive 5 Years Ago'           4='Overseas'
5='Not Specified (within New Zealand)' 6='Not Specified (Overseas)'
7='No Fixed Abode'                  .='Missing';

/* VARIABLE: YrRes5yrs   DESCRIPTION: Usual Residence Five Years Ago Indicator
   YEAR(S): 2001 */
value fur5y
1='Same as Usual Residence'         2='Elsewhere in New Zealand'
3='Not Born 5 Years Ago'            4='Overseas'
5='No Fixed Abode 5 Years Ago'      .='Missing';

/* VARIABLE: UR5yrsSumm  DESCRIPTION: Usual Residence 5 Years Ago Summary
   YEAR(S): 2001 */
value f01YRSm
1='Same Usual Residence as 5 Years Ago' 2='Same Territorial Authority'
3='Same RC, Different TA'                4='Same RC, TA not known'
5='Different RC, Same Island'            6='Different RC, Different Island'
7='Different TA, RC Missing, Same Island' 8='Different TA, RC Missing, Island not known'
9='No Fixed Abode 5 Years Ago'          10='Overseas 5 Years Ago'
11='Not Born 5 Years Ago'               99='New Zealand, nfd, Area Outside TA and RC'
.='Not Specified';

/* VARIABLE: AU5Yr      DESCRIPTION: Area Unit 5 years ago indicator
   YEAR(S): 1996,2001 */
value fAU5yr
1='Same Area Unit as 5 years ago'       0='Different Area Unit than 5 years ago';

/* VARIABLE: YrsUR      DESCRIPTION: Years at Usual Residence
   YEAR(S): 1986,1991,1996,2001 */
/* VARIABLE: YrsinNZ    DESCRIPTION: Years since Arrival in NZ
   YEAR(S): 1981,1996,2001 */
value fYrsUR
0='Less than 1 year'                    1='One Year'                    2='2 Years'
3='3 Years'                              4='4 Years'                    5='5 Years'
6='6 Years'                              7='7 Years'                    8='8 Years'
9='9 Years'                              10='10 Years'                  11='11 Years'
12='12 Years'                            13='13 Years'                  14='14 Years'
15='15 Years'                            16='16 Years'                  17='17 Years'
18='18 Years'                            19='19 Years'
20-24='20-24 years'                      25-29='25-29 years'            30-34='30-34 years'
35-39='35-39 years'                      40-44='40-44 years'            45-49='45-49 years'
50-54='50-54 years'                      55-59='55-59 years'

```

60-69='60-69 years'	70-79='70-79 years'	80-89='80-89 years'
90-98='90+ years'	777='Response Unidentifiable'	
888='Not Specified (5 years or more)'		
988='Born in New Zealand'		
.,999='Not Specified/Not Applicable';		

Table 76 SAS Record Type formats used

```

/*****RECORD TYPE FORMATS*****/
/* VARIABLE: PerType DESCRIPTION: Personal Record Type
YEAR(S): 1981,1986,1991,1996,2001 */
value fPRecT
1='Absentee' 3='NZ Adult' 4='NZ Child';

/* VARIABLE: AbsentFlg DESCRIPTION: Absentee Indicator
YEAR(S): 1981,1986,1991,1996,2001 */
value fAbs
0='Non-Absentee' 1='Absentee'
2='Dummy Record'; /*Treat as Absentee. Found in 1996 and 2001*/

/* VARIABLE: UsResident DESCRIPTION: Non Absentee Usual Resident Flag
YEAR(S): 1981,1986,1991,1996,2001 */
value fUsRes
0='Not a Non Absentee Usual Resident' 1='Non Absentee Usual Resident'
.='Missing';

/*Household Absentee Flag 2001 H_AbsFlg*/
value fHAbsF
1='Absentees' 2='No Absentees' 7='Response Unidentifiable' 9='Not Stated'
.='Missing';

```

Table 77 SAS General Number formats used

```

/*****GENERAL NUMBER FORMATS*****/
/* VARIABLE: H_Mveh DESCRIPTION: Number of Motor Vehicles in H/H
YEAR(S): 1996,2001 */
value f3num
0='Nil' 1='1' 2='2' 3='3 or more' .,9='Not Specified';

/* VARIABLE: H_Mveh DESCRIPTION: Number of Private Cars in H/H
YEAR(S): 1986 */
/* VARIABLE: H_NAbCh DESCRIPTION: Number of Children Absent in H/H
YEAR(S): 1986 */
/* VARIABLE: H_NAbTot DESCRIPTION: Total Number of Absentees in H/H
YEAR(S): 1986 */

```

value f5num					
0='Nil'	1='1'	2='2'	3='3'	4='4'	
5='5 or more' .,9,99='Not Specified';					
/* VARIABLE: H_BCars DESCRIPTION: Number of Business Cars in H/H					
YEAR(S): 1981 */					
/* VARIABLE: H_Bdrms DESCRIPTION: Number of Bedrooms					
YEAR(S): 1986,1991 */					
/* VARIABLE: H_Mveh DESCRIPTION: Number of Private Cars in H/H					
YEAR(S): 1981 */					
/* VARIABLE: H_NAdult DESCRIPTION: Number of Adults aged 20+ in H/H (on C/N)					
YEAR(S): 1981 */					
/* VARIABLE: H_NAdult DESCRIPTION: Number of Adults aged 16+ in H/H (on C/N)					
YEAR(S): 1986 */					
/* VARIABLE: H_NChn DESCRIPTION: Number of Children aged 0-15 in H/H (on C/N)					
YEAR(S): 1981,1986 */					
/* VARIABLE: H_PBike DESCRIPTION: Number of Pushbikes in H/H					
YEAR(S): 1981 */					
/* VARIABLE: H_MotorBike DESCRIPTION: Number of Motorbikes in H/H					
YEAR(S): 1981 */					
/* VARIABLE: H_Mveh DESCRIPTION: Number of Motor Vehicles in H/H					
YEAR(S): 1991 */					
value f8num					
0='Nil'	1='1'	2='2'	3='3'	4='4'	5='5'
6='6' 7='7' 8='8 or more' .,9='Not Specified';					
/* VARIABLE: H_NAbCh DESCRIPTION: Number of Children Absent in H/H					
YEAR(S): 1981 */					
/* VARIABLE: H_NAbTot DESCRIPTION: Total Number of Absentees in H/H					
YEAR(S): 1981 */					
value f9num					
0='Nil'	1='1'	2='2'	3='3'	4='4'	5='5'
6='6' 7='7' 8='8' 9='9 or more' .='Not Applicable';					
/* VARIABLE: H_Bdrms DESCRIPTION: Number of Bedrooms					
YEAR(S): 1996 */					
value f10num					
1='1'	2='2'	3='3'	4='4'	5='5'	6='6'
7='7' 8='8' 9='9' 10='10 or more' 98='Unidentifiable'					
.,99='Not Specified';					
/* VARIABLE: H_Bdrms DESCRIPTION: Number of Bedrooms					
YEAR(S): 2001 */					
value f14num					
1='1'	2='2'	3='3'	4='4'	5='5'	6='6'
7='7' 8='8' 9='9' 10='10' 11='11' 12='12'					

```

13='13'          14='14 or more'      98,77='Unidentifiable'  .,99='Not Specified';

/* VARIABLE: H_Bdrms  DESCRIPTION: Number of Bedrooms
   YEAR(S): 1981 */
value f20num
1='1'          2='2'          3='3'          4='4'          5='5'          6='6'
7='7'          8='8'          9='9'          10='10'         11='11'         12='12'
13='13'        14='14'        15='15'        16='16'        17='17'        18='18'
19='19'        20='20 or more'  .,99='Not Specified';

```

Table 78 SAS Census Year formats used

```

/*****CENSUS YEAR FORMATS*****/
/* VARIABLE: CenYear  DESCRIPTION: Year of Census
   YEAR(S): 1981,1986,1991,1996,2001 */
value fcyear
-1='All Years'
1981='1981-86'    1986='1986-91'    1991='1991-96'    1996='1996-01'    2001='2001-04';

/* Dates of each Census for CenYear*/
invalue icend
1981='24Mar1981'd    1986='04Mar1986'd    1991='05Mar1991'd
1996='05Mar1996'd    2001='06Mar2001'd    2006='07Mar2006'd;

```

Table 79 SAS Linkage formats used

```

/*****LINKAGE FORMATS*****/
/* VARIABLE: Link  DESCRIPTION: Matched
   YEAR(S): 1981,1986,1991,1996,2001 */
value flink
0='Not Linked'    1='Linked';

/* VARIABLE: LinkStat  DESCRIPTION: Linkage Status (Detailed)
   YEAR(S): 1981,1986,1991,1996,2001 */
value $fLkSt
'MBHigh'='Linked on MB, Weight >= Cutoff'    'MBMedW'='Linked on MB, Weight >= UppLook, <Cutoff'
'MBLowW'='Linked on MB, Weight < UppLook'    'AUHigh'='Linked on AU, Weight >= Cutoff'
'AUMedW'='Linked on AU, Weight >= UppLook, <Cutoff'
'AULowW'='Linked on AU, Weight < UppLook'    ' '= 'Not Linked';

```

Table 80 SAS Unlock formats used

```

/*****UNLOCK FORMATS*****/
/*These are formats specific to some variables in the unlock ratios dataset*/

```

/*Age Groupings*/			
value fageiT			
.='Missing'	0=' 0-14 yrs'	15='15-24 yrs'	25='25-29 yrs'
30='30-34 yrs'	35='35-39 yrs'	40='40-49 yrs'	50='50-59 yrs'
60='60-69 yrs'	70='70-79 yrs'	80='>=80 years';	
value fagei			
.='Missing'	14=' 0-14 yrs'	24=' 0-24 yrs'	
59=' 0-59 yrs'	1524='15-24 yrs'	2544='25-44 yrs'	
4564='45-64 yrs'	2534='25-34 yrs'	3544='35-44 yrs'	
4554='45-54 yrs'	5564='55-64 yrs'	6574='65-74 yrs'	
6074='60-74 yrs'	7584='75-84 yrs'	6599='>=65 yrs'	
7599='>=75 yrs'	8599='>=85 yrs';		
/*NZ Deprivation groupings*/			
value fdecgp			
-99='Missing'	1, -1='Dep 1-4'	5, -5='Dep 5-6'	
7, -7='Dep 7-8'	9, -9='Dep 9-10'	6, -6='Dec 1-6';	
value fdecqu			
-99='Missing'	1, -1='Dec 1-2'	3, -3='Dec 3-4'	
5, -5='Dec 5-6'	7, -7='Dec 7-8'	9, -9='Dec 9-10'	
2, -2='Dec 1-4'	6, -6='Dec 1-6';		
/*Rurality groupings*/			
value frurgpx			
1, -1='Main Urban'	2, -2='Secondary Urban Area'		
3, -3='Minor Urban Area'	4, -4, -40='Rural'		
-9, -99='Missing'	-10='All Urban'		
7, -7, -70='NonUrban or Missing';			
/*Combining DHBS into Regional Cancer Networks (two versions) 16.7.2008*/			
invalue ircna			
1,2,3,4=890	5,6,7=892		
8,9,10,11,12,13,14,15=894	16,17,18,19,20,21=896		
99=898;			
invalue ircnb			
1,2,3,4=891	5,6,7,8,9=893		
10,11,12,13,14,15=895	16,17,18,19,20,21=897		
99=899;			
value frcnab			
890,891='Northern'	892='Midland a (noT&T)'		
893='Midland b (+T&T)'	894='MidCentral a (+T&T)'		


```

895='MidCentral b (noT&T)'          896,897='Southern'
898,899='Area outside Regional Cancer Network';

/*Time Since Census*/
value ftsince
-9='Missing'          -1='Dates -ve'          0=' 0- 6 mths'
7=' 7-12 mths'       13='13-18 mths'        19='19-24 mths'
25='25-30 mths'     31='31-36 mths'        37='37-42 mths'
38='43-48 mths'     49='49-54 mths'        55='55-60 mths'
61='61-high mths'   88='55-high mths';

```

Table 81 SAS Cancer formats used

```

/*****CANCER FORMATS*****/
/*Converting Extent code from NZHIS data to one code over time*/
invalue $iExtnt
'A','0'=10          'B','1'=11          'C'=21          'D'=22
'2'=23          'E','3'=30          'F','5'=-50          'G','6'=-60;

/* VARIABLE: ICDExtent1          DESCRIPTION: Extent of Disease 1
YEAR(S): 1981,1986,1991,1996,2001
/* VARIABLE: ICDExtent2          DESCRIPTION: Extent of Disease 2
YEAR(S): 1981,1986,1991,1996,2001
/* VARIABLE: ICDExtent3          DESCRIPTION: Extent of Disease 3
YEAR(S): 1981,1986,1991,1996,2001
/* VARIABLE: ICDExtent4          DESCRIPTION: Extent of Disease 4
YEAR(S): 1981,1986,1991,1996,2001 */
value fExtnt
10='In Situ'          11='Localised to organ of origin'
20,23='Regional or node involvement'          21='Invasion of adjacent tissue or organ'
22='Regional lymph nodes'          30='Distant metastases'
-50,.='Not Stated'          -60='Not Applicable (lymphomas/leukaemia/myeloma)';

invalue $iBasD
'0'=0          '1'=1          '2','3'=2          '4','5','6','7','8'=4          '9',' '=-9;

/* VARIABLE: ICDBasis1          DESCRIPTION: Basis of Disease Classification 1
YEAR(S): 1981,1986,1991,1996,2001
/* VARIABLE: ICDBasis2          DESCRIPTION: Basis of Disease Classification 2
YEAR(S): 1981,1986,1991,1996,2001
/* VARIABLE: ICDBasis3          DESCRIPTION: Basis of Disease Classification 3
YEAR(S): 1981,1986,1991,1996,2001
/* VARIABLE: ICDBasis4          DESCRIPTION: Basis of Disease Classification 4
YEAR(S): 1981,1986,1991,1996,2001 */
value fBasD

```

```

0='Death certificate only'          1='Clinical only'
2='Investigation but no histology'  4='Tissue dx'
-9='Unknown'                        .= 'Missing';

/*More detailed split of ICD codes for Cancer*/
invalue $iCanGd
'C00', 'C000' - 'C148XX'='C00X'          'C15', 'C150' - 'C159XX'='C15-'
'C16', 'C160' - 'C169XX'='C16-'        'C180' - 'C180XX'='C180'
'C182' - 'C182XX'='C182'                'C183' - 'C183XX'='C183'
'C184' - 'C184XX'='C184'                'C185' - 'C185XX'='C185'
'C186' - 'C186XX'='C186'                'C187' - 'C187XX'='C187'
'C181' - 'C181XX', 'C188' - 'C188XX'='C188' 'C189' - 'C189XX'='C189'
'C19', 'C190' - 'C199XX'='C19-'        'C20', 'C200' - 'C209XX'='C20-'
'C21', 'C210' - 'C218XX'='C21-'        'C22', 'C220' - 'C229XX'='C22-'
'C23', 'C230' - 'C249XX'='C23X'        'C25', 'C250' - 'C259XX'='C25-'
'C17', 'C170' - 'C179XX', 'C26', 'C260' - 'C269XX'='C26X' 'C30', 'C300' - 'C329XX'='C30X'
'C33', 'C330' - 'C330XX', 'C34', 'C340' - 'C340XX'='C33X' 'C341' - 'C341XX'='C341'
'C342' - 'C342XX'='C342'                'C343' - 'C343XX'='C343'
'C348' - 'C348XX', 'C349' - 'C349XX'='C348' 'C40', 'C400' - 'C419XX'='C40X'
'C43', 'C430' - 'C439XX'='C43-'        'C44', 'C440' - 'C449XX'='C44-'
'C45', 'C450' - 'C459XX'='C45-'        'C46', 'C460' - 'C499XX'='C46X'
'C50', 'C500' - 'C509XX'='C50-'
'C51', 'C510' - 'C52XXX', 'C57', 'C570' - 'C58XXX'='C51X'
'C53', 'C530' - 'C539XX'='C53-'        'C54', 'C540' - 'C55XXX'='C54-'
'C56' - 'C56XXX'='C56-'                'C61' - 'C61XXX'='C61-'
'C62', 'C620' - 'C629XX'='C62-'        'C64' - 'C64XXX'='C64-'
'C67', 'C670' - 'C679XX'='C67-'
'C69', 'C690' - 'C709XX', 'C72', 'C720' - 'C729XX'='C69X'
'C71', 'C710' - 'C719XX'='C71-'        'C73' - 'C73XXX'='C73-'
'C76', 'C760' - 'C80XXX'='C76X'        'C81', 'C810' - 'C819XX'='C81-'
'C82', 'C820' - 'C829XX'='C82-'        'C83', 'C830' - 'C839XX'='C83-'
'C84', 'C840' - 'C845XX'='C84-'        'C85', 'C850' - 'C859XX'='C85-'
'C9000' - 'C9020X'='C900'                'C9100' - 'C9101X'='C910'
'C9110' - 'C9111X'='C911'                'C9120' - 'C9191X'='C919'
'C9200' - 'C9201X'='C920'                'C9210' - 'C9211X'='C921'
'C9220' - 'C9290X'='C929'                'C9300' - 'C9591X'='C930'
'C96', 'C960' - 'C969XX'='C96-'
'C37', 'C370' - 'C399XX', 'C60', 'C600' - 'C609XX', 'C63', 'C630' - 'C639XX', 'C65' - 'C65XXX',
'C66' - 'C66XXX', 'C68', 'C680' - 'C689XX', 'C74', 'C740' - 'C759XX', 'C88', 'C880' - 'C889XX'='CXXX'
'D03', 'D030' - 'D039XX'='D03-'        'D05', 'D050' - 'D059XX'='D05-'
'D06', 'D060' - 'D069XX'='D06-'
'D00', 'D000' - 'D024XX', 'D04', 'D040' - 'D049XX', 'D07', 'D070' - 'D099XX', 'D758'='D09X'
'D45' - 'D473XX'='D45X'                other='???';

value $fCanGd
'C00X'='C00X Lip, oral cavity and pharynx' 'C15-'='C15- Oesophagus'
'C16-'='C16- Stomach'                       'C180'='C180 Caecum'

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'C182'='C182 Ascending colon'
'C184'='C184 Transverse colon'
'C186'='C186 Descending colon'
'C188'='C188 Overlapping and appendix'
'C19-'='C19- Rectosigmoid junction'
'C21-'='C21- Anus and anal canal'
'C23X'='C23X Gallbladder and extra-hepatic biliary tract'
'C25-'='C25- Pancreas'
'C26X'='C26X Digestive tract-other, including small intestine'
'C30X'='C30X Ear, larynx and nasal cavity'
'C341'='C341 Upper lobe'
'C343'='C343 Lower lobe'
/*'C37X'='C37X Thymus, mediastinum, heart, pleura & other respiratory & intrathoracic system sites'
Now put with Other Cancers*/
'C40X'='C40X Bone and articular cartilage'
'C44-'='C44- Other skin'
'C46X'='C46X Mesothelial and soft tissue (except mesothelioma)'
'C50-'='C50- Breast'
'C53-'='C53- Cervix'
'C56-'='C56- Ovary'
'C62-'='C62- Testes'
'C67-'='C67- Bladder'
'C71-'='C71- Brain'
'C76X'='C76X Ill defined, secondary or unspecified sites'
'C81-'='C81- Hodgkin''s Disease'
'C83-'='C83- Diffuse NHL'
'C85-'='C85- Other NHL'
'C910'='C910 Acute lymphoid leukaemia'
'C919'='C919 Other lymphoid leukaemia'
'C921'='C921 Chronic myeloid leukaemia'
'C930'='C930 Other leukaemia including monocytic'
'C96-'='C96- Other lymphoid or haematopoietic malignancies'
'CXXX'='CXXX Other Cancers'
'D03-'='D03- Melanoma in situ'
'D06-'='D06- Carcinoma in situ cervix'
'D45X'='D45X Chron. myeloproliferative & myelodysplastic disorders';
'C183'='C183 Hepatic flexure'
'C185'='C185 Splenic flexure'
'C187'='C187 Sigmoid'
'C189'='C189 Unspecified Colon'
'C20-'='C20- Rectum'
'C22-'='C22- Liver and intrahepatic bile ducts'
'C33X'='C33X Trachea and bronchus'
'C342'='C342 Middle lobe'
'C348'='C348 Unspecified and overlapping lung'
'C43-'='C43- Melanoma'
'C45-'='C45- Mesothelioma'
'C51X'='C51X Other female genital organs'
'C54-'='C54- Uterus'
'C61-'='C61- Prostate'
'C64-'='C64- Kidney, except renal pelvis'
'C69X'='C69X Eye, meninges and rest of CNS'
'C73-'='C73- Thyroid'
'C82-'='C82- Follicular Non-Hodgkin''s Disease'
'C84-'='C84- Peripheral and T cell lymphoma'
'C900'='C900 Multiple myeloma'
'C911'='C911 Chronic lymphoid leukaemia'
'C920'='C920 Acute myeloid leukaemia'
'C929'='C929 Other myeloid leukaemia'
'D05-'='D05- Carcinoma in situ breast'
'D09X'='D09X Carcinoma in situ other'

/*Shorter labels for more detailed version*/
/* VARIABLE: ICDGroup1 DESCRIPTION: Cancer 1 ICD Grouping
YEAR(S): 1981,1986,1991,1996,2001 */
/* VARIABLE: ICDGroup2 DESCRIPTION: Cancer 2 ICD Grouping
YEAR(S): 1981,1986,1991,1996,2001 */
/* VARIABLE: ICDGroup3 DESCRIPTION: Cancer 3 ICD Grouping
YEAR(S): 1981,1986,1991,1996,2001 */
/* VARIABLE: ICDGroup4 DESCRIPTION: Cancer 4 ICD Grouping
YEAR(S): 1981,1986,1991,1996,2001 */
value $fCanSD

```

'C00X'='C00X Lip, oral cavity & pharynx'	'C15-'='C15- Oesophagus'
'C16-'='C16- Stomach'	'C18-'='Colon'
'C180'='C180 Caecum'	'C182'='C182 Ascending colon'
'C183'='C183 Hepatic flexure'	'C184'='C184 Transverse colon'
'C185'='C185 Splenic flexure'	'C186'='C186 Descending colon'
'C187'='C187 Sigmoid'	'C188'='C188 Overlapping & appendix'
'C189'='C189 Unspecified Colon'	'C19-'='C19- Rectosigmoid junction'
'C20-'='C20- Rectum'	'C21-'='C21- Anus & anal canal'
'C22-'='C22- Liver'	'C23X'='C23X Gallbladder'
'C25-'='C25- Pancreas'	'C26X'='C26X Digestive tract-other'
'C30X'='C30X Ear, larynx and nose'	'C33X'='C33X Trachea and bronchus'
'C341'='C341 Upper lobe'	'C342'='C342 Middle lobe'
'C343'='C343 Lower lobe'	'C348'='C348 Unspec. lung'
'C37X'='C37X Mediastinum'	'C40X'='C40X Bone and cartilage'
'C43-'='C43- Melanoma'	'C44-'='C44- Other skin'
'C45-'='C45- Mesothelioma'	'C46X'='C46X Mesothelial & soft tissue'
'C50-'='C50- Breast'	'C51X'='C51X Other female genitals'
'C53-'='C53- Cervix'	'C54-'='C54- Uterus'
'C56-'='C56- Ovary'	'C61-'='C61- Prostate'
'C62-'='C62- Testes'	'C64-'='C64- Kidney, except renal pelvis'
'C67-'='C67- Bladder'	'C69X'='C69X Eye, meninges & rest of CNS'
'C71-'='C71- Brain'	'C73-'='C73- Thyroid'
'C76X'='C76X Ill defined sites'	'C81-'='C81- Hodgkin's Disease'
'C82-'='C82- Follicular NHL'	'C83-'='C83- Diffuse NHL'
'C84-'='C84- Peri. & Tcell lymphoma'	'C85-'='C85- Other NHL'
'C900'='C900 Multiple myeloma'	'C910'='C910 Acute lymphoid leuk.'
'C911'='C911 Chronic lymphoid leuk.'	'C919'='C919 Other lymphoid leuk.'
'C920'='C920 Acute myeloid leuk.'	'C921'='C921 Chronic myeloid leuk.'
'C929'='C929 Other myeloid leuk.'	'C930'='C930 Other leukaemia'
'C96-'='C96- Other lymphoid'	'CXXX'='CXXX Other Cancers'
'D03-'='D03- Melan in situ'	'D05-'='D05- CIS breast'
'D06-'='D06- CIS cervix'	'D09X'='D09X CIS other'
'D45X'='D45X Myeloproliferative dis.'	' ' = 'Missing';

/*Following are the International Classification of Childhood Cancer, Third Edition,
plus ICD-0-2 codes that are in our data*/

invalue \$i3KidM

'9820', '9823', '9826', '9827', '9831'-'9837', '9940', '9948'='1a'
'9821'='1a' /*ICD-0-2*/
'9840', '9861', '9866', '9867', '9870'-'9874', '9891', '9895'-'9897', '9910', '9920', '9931'='1b'
'9863', '9875', '9876', '9950', '9960'-'9964'='1c'
'9945', '9946', '9975', '9980', '9982'-'9987', '9989'='1d'
'9800', '9801', '9805', '9860', '9930'='1e'
'9650'-'9655', '9659', '9661'-'9665', '9667'='2a'
'9657', '9666'='2a' /*ICD-0-2*/
'9591', '9670', '9671', '9673', '9675', '9678'-'9680', '9684', '9689'-'9691', '9695',
'9698'-'9702', '9705', '9708', '9709', '9714', '9716'-'9719', '9727'-'9729', '9731'-'9734',

```
'9760'-'9762', '9764'-'9769', '9970'='2b'
'9592', '9593', '9672', '9685', '9686'='2b' /*ICD-0-2*/
'9687'='2c'
'9740'-'9742', '9750', '9754'-'9758'='2d'
'9720'='2d' /*ICD-0-2*/
'9590', '9596'='2e'
'9383', '9390'-'9394'='3a'
'9384', '9400'-'9411', '9420', '9421'-'9424', '9440'-'9442'='3b'
'9470'-'9474', '9480', '9508'='3c'
'9381', '9382', '9430', '9444', '9450', '9451', '9460'='3d'
'8270'-'8281', '8300', '9350'-'9352', '9360'-'9362', '9412', '9413', '9492', '9493', '9505'-'9507',
'9530'-'9539', '9582'='3e'
'9490', '9500'='4a'
'8680'-'8683', '8690'-'8693', '8700', '9520'-'9523'='4b'
'9510'-'9514'='5'
'9380'='X1' /*3b if C72.3*/
/*3d if C70.0-C72.2, C72.4-C72.9, C75.1, C75.3*/
'9501'-'9504'='X2' /*3c if C70.0-C72.9*/
/*4b if C00.0-C69.9, C73.9-C76.8, C80.9*/
'8000'-'8005'='X3' /*3f if C70.0-C72.9, C75.1-C75.3, otherwise code to XX*/
/*Group all others*/
'8010'-'8084', '8090'-'8110', '8120'-'8157', '8160'-'8180', '8190'-'8264', '8290', '8311', '8312',
'8316'-'8319', '8361', '8370'-'8375', '8330'-'8337', '8340'-'8347', '8350', '8390'-'8420',
'8310', '8313'-'8315', '8320'-'8325', '8360', '8380'-'8384', '8480'-'8490', '8441'-'8444',
'8450', '8451', '8460'-'8473', '8430'-'8440', '8452'-'8454', '8500'-'8576', '8587',
'8588'-'8589', '8590'-'8671', '8710'-'8713', '8720'-'8780', '8790', '8800'-'8805', '8810', '8811',
'8823', '8830', '8812', '8813'-'8815', '8821', '8834'-'8835', '8820', '8822', '8824'-'8827',
'8806', '8831'-'8833', '8836', '8840'-'8842', '8850'-'8858', '8860'-'8862', '8870', '8880',
'8881', '8890'-'8898', '8940', '8941', '8983', '8930'-'8936', '8950', '8951', '8971'-'8981',
'8900'-'8905', '8910', '8912', '8920', '8991', '8959', '8960', '8964'-'8967', '8963',
'8921', '8982', '8990', '8970', '9000', '9010'-'9016', '9020', '9030', '9040'-'9044', '9050'-'9055',
'9060'-'9065', '9070'-'9073', '9080'-'9085', '9090', '9091', '9100'-'9105', '9110',
'9120'-'9125', '9130'-'9133', '9135', '9136', '9141', '9142', '9140', '9150', '9160', '9161',
'9170'-'9175', '9180'-'9187', '9191'-'9195', '9200', '9210', '9220', '9240', '9221', '9230',
'9241'-'9243', '9260', '9250', '9261', '9262', '9270'-'9275', '9280'-'9282', '9290',
'9231', '9251', '9252', '9300'-'9302', '9310'-'9312', '9320'-'9322', '9330', '9340'-'9342',
'9370'-'9372', '9363'-'9365', '9373', '9491', '9540'-'9571', '9580', '9581', '9722'='XX'
other='??';
```

value \$f3KidM

```
'1' ='I. Leukemias, myeloproliferative diseases, and myelodysplastic diseases'
'1a' ='Ia. Lymphoid leukemias'
'1b' ='Ib. Acute myeloid leukemias'
'1c' ='Ic. Chronic myeloproliferative diseases'
'1d' ='Id. Myelodysplastic syndrome and other myeloproliferative diseases'
'1e' ='Ie. Unspecified and other specified leukemias'
'2' ='II. Lymphomas and reticuloendothelial neoplasms'
```

```
'2a' = 'IIa. Hodgkin lymphomas'
'2b' = 'IIb. Non-Hodgkin lymphomas (except Burkitt lymphoma)'
'2c' = 'IIc. Burkitt lymphoma'
'2d' = 'IId. Miscellaneous lymphoreticular neoplasms'
'2e' = 'IIe. Unspecified lymphomas'
'3' = 'III. CNS and miscellaneous intracranial and intraspinal neoplasms'
'3a' = 'IIIa. Ependymomas and choroid plexus tumor'
'3b' = 'IIIb. Astrocytomas'
'3c' = 'IIIc. Intracranial and intraspinal embryonal tumors'
'3d' = 'IIId. Other gliomas'
'3e' = 'IIIe. Other specified intracranial and intraspinal neoplasms'
'3f' = 'IIIf. Unspecified intracranial and intraspinal neoplasms'
'4' = 'IV. Neuroblastoma and other peripheral nervous cell tumors'
'4a' = 'IVa. Neuroblastoma and ganglioneuroblastoma'
'4b' = 'IVb. Other peripheral nervous cell tumors'
'5' = 'V. Retinoblastoma'
'X1' = '3b if C72.3; and 3d if C70.0-C72.2, C72.4-C72.9, C75.1, C75.3'
'X2' = '3c if C70.0-C72.9; and 4b if C00.0-C69.9, C73.9-C76.8, C80.9'
'X3' = '3f if C70.0-C72.9, C75.1-C75.3; otherwise XX'
'XX' = 'All other Third Edition Morphology codes';
```

/*Following are the International Classification of Childhood Cancer, Second Edition*/

invalue \$i2KidM

```
'9820'-'9827', '9850' = '1a'
'9840', '9841', '9861', '9864', '9866', '9867', '9891', '9894', '9910' = '1b'
'9863', '9868' = '1c'
'9830', '9842', '9860', '9862', '9870'-'9890', '9892', '9893', '9900', '9930'-'9941' = '1d'
'9800'-'9804' = '1e'
'9650'-'9667' = '2a'
'9591'-'9595', '9670'-'9686', '9690'-'9714', '9723' = '2b'
'9687' = '2c'
'9720', '9731'-'9764' = '2d'
'9590' = '2e'
'9383', '9390'-'9394' = '3a'
'9381', '9400'-'9441' = '3b'
'9470'-'9473' = '3c'
'9382', '9384', '9442'-'9460', '9481' = '3d'
'8270'-'8281', '8300', '9350'-'9362', '9480', '9505', '9530'-'9539' = '3e'
'9490', '9500' = '4a'
'8680', '8693'-'8710', '9501'-'9504', '9520'-'9523' = '4b'
'9510'-'9512' = '5'
'9380' = 'X1' /*3b if C72.3*/
/*3d if C70.0-C72.2, C72.4-C72.9*/
'8000'-'8004' = 'X3' /*3f if C70.0-C72.9, C75.1-C75.3, otherwise code to XX*/
/*Group all others*/
'8010'-'8263', '8290', '8310', '8312', '8314'-'8323', '8330'-'8350', '8370'-'8375', '8380', '8381',
'8390'-'8420', '8430'-'8440', '8441'-'8473', '8480'-'8580', '8590'-'8670', '8720'-'8780',
```

```
'8800'-'8804', '8810'-'8833', '8840'-'8896', '8900'-'8920', '8930', '8933', '8940', '8941', '8950',
'8951', '8960', '8963', '8964', '8970'-'8982', '8990', '8991', '9000', '9020', '9040'-'9044',
'9050'-'9053', '9060'-'9102', '9110', '9120'-'9134', '9140', '9150'-'9170', '9180'-'9200',
'9220'-'9231', '9240', '9250', '9251', '9260'-'9330', '9363', '9364', '9370', '9540'-'9561', '9580',
'9581', '9722'='XX'
other='??';
```

value \$f2KidM

```
'1' = 'I. Leukemias'
'1a' = 'Ia. Lymphoid leukemias'
'1b' = 'Ib. Acute non-lymphocytic leukemia'
'1c' = 'Ic. Chronic myeloid leukemia'
'1d' = 'Id. Other specified leukemias'
'1e' = 'Ie. Unspecified leukemias'
'2' = 'II. Lymphomas and reticuloendothelial neoplasms'
'2a' = 'IIa. Hodgkin's disease'
'2b' = 'IIb. Non-Hodgkin lymphomas'
'2c' = 'IIc. Burkitt's lymphoma'
'2d' = 'IIId. Miscellaneous lymphoreticular neoplasms'
'2e' = 'IIe. Unspecified lymphomas'
'3' = 'III. CNS and miscellaneous intracranial and intraspinal neoplasms'
'3a' = 'IIIa. Ependymoma'
'3b' = 'IIIb. Astrocytoma'
'3c' = 'IIIc. Primitive neuroectodermal tumours'
'3d' = 'IIIId. Other gliomas'
'3e' = 'IIIe. Other specified intracranial and intraspinal neoplasms'
'3f' = 'IIIIf. Unspecified intracranial and intraspinal neoplasms'
'4' = 'IV. Sympathetic nervous system tumours'
'4a' = 'IVa. Neuroblastoma and ganglioneuroblastoma'
'4b' = 'IVb. Other sympathetic nervous system tumours'
'5' = 'V. Retinoblastoma'
'X1' = '3b if C72.3; and 3d if C70.0-C72.2, C72.4-C72.9'
'X3' = '3f if C70.0-C72.9, C75.1-C75.3; otherwise XX'
'XX' = 'All other Second Edition Morphology codes';
```

/*Following are the International Classification of Childhood Cancer, Third Edition,
plus ICD-0-2 codes that are in our data*/

/*This version for slightly different grouping of cancers to analyse*/

invalue \$i3KidMb

```
'9820', '9823', '9826', '9827', '9831'-'9837', '9940', '9948'='1a'
'9821'='1a' /*ICD-0-2*/
'9840', '9861', '9866', '9867', '9870'-'9874', '9891', '9895'-'9897', '9910', '9920',
'9931'='1b'
'9863', '9875', '9876', '9950', '9960'-'9964'='1c'
'9945', '9946', '9975', '9980', '9982'-'9987', '9989'='1d'
'9800', '9801', '9805', '9860', '9930'='1e'
'9650'-'9655', '9659', '9661'-'9665', '9667'='2a'
```

```

'9657', '9666'='2a' /*ICD-0-2*/
'9591', '9670', '9671', '9673', '9675', '9678'-'9680', '9684', '9689'-'9691',
'9695', '9698'-'9702', '9705', '9708', '9709', '9714', '9716'-'9719', '9727'-'9729',
'9731'-'9734', '9760'-'9762', '9764'-'9769', '9970'='2b'
'9592', '9593', '9672', '9685', '9686'='2b' /*ICD-0-2*/
'9687'='2c'
'9740'-'9742', '9750', '9754'-'9758'='2d'
'9720'='2d' /*ICD-0-2*/
'9590', '9596'='2e'
'9383', '9390'-'9394'='3a'
'9384', '9400'-'9411', '9420', '9421'-'9424', '9440'-'9442'='3b'
'9470'-'9474', '9480', '9508'='3c'
'9381', '9382', '9430', '9444', '9450', '9451', '9460'='3d'
'8270'-'8281', '8300', '9350'-'9352', '9360'-'9362', '9412', '9413', '9492', '9493',
'9505'-'9507', '9530'-'9539', '9582'='3e'
'9490', '9500'='4a'
'8680'-'8683', '8690'-'8693', '8700', '9520'-'9523'='4b'
'9510'-'9514'='XX'
'9380'='X1' /*3b if C72.3*/
/*3d if C70.0-C72.2, C72.4-C72.9, C75.1, C75.3*/
'9501'-'9504'='X2' /*3c if C70.0-C72.9*/
/*4b if C00.0-C69.9, C73.9-C76.8, C80.9*/
/*6*/
'8959', '8960', '8964'-'8967', '8311', '8312', '8316'-'8319', '8361'='6'
/*6 with conditions*/
'8000'-'8005'='X3' /*3f if C70.0-C72.9, C75.1-C75.3, otherwise code to XX (or 6)*/
'8963', '9364', '8010'-'8041', '8050'-'8075', '8082', '8120'-'8122', '8130'-'8141', '8143', '8155',
'8190'-'8201', '8210', '8211', '8221'-'8231', '8240', '8241', '8244'-'8246', '8260'-'8263', '8290',
'8310', '8320', '8323', '8401', '8430', '8440', '8480'-'8490', '8504', '8510', '8550', '8560'-'8576'='X4'
/*9*/
'8900'-'8905', '8910', '8912', '8920', '8991', '8820', '8822', '8824'-'8827', '9150', '9160',
'9491', '9540'-'9571', '9580', '9140', '8587', '8710'-'8713', '8806', '8831'-'8833', '8836',
'8840'-'8842', '8850'-'8858', '8860'-'8862', '8870', '8880', '8881', '8890'-'8898',
'8921', '8982', '8990', '9040'-'9044', '9120'-'9125', '9130'-'9133', '9135', '9136', '9141',
'9142', '9161', '9170'-'9175', '9231', '9251', '9252', '9373', '9581'='9'
/*9 with conditions*/
'8810', '8811', '8813'-'8815', '8821', '8823', '8834'-'8835', '8830', '8800'-'8805'='X5'
'9180', '9210', '9220', '9240', '9260', '9365'='X6'
/*10*/
'8441'-'8444', '8450', '8451', '8460'-'8473', '8590'-'8671'='10'
/*10 with conditions*/
'9060'-'9065', '9070'-'9072', '9080'-'9085', '9100', '9101'='X7'
'9073', '9090', '9091', '8232'-'8239', '8380'-'8384', '9000', '9014', '9015'='X8'
'9102'-'9105'='X9'
/*Group all others*/
'8042'-'8049', '8076'-'8081', '8083', '8084', '8090'-'8110', '8123'-'8129', '8142', '8144'-'8154',
'8156', '8157', '8160'-'8180', '8202'-'8209', '8212'-'8220', '8242'-'8243', '8247'-'8259',
'8264', '8370'-'8375', '8330'-'8337', '8340'-'8347', '8350', '8390'-'8400', '8402'-'8420',

```



```
'8313'-'8315', '8321'-'8322', '8324'-'8325', '8360', '8431'-'8439', '8452'-'8454',
'8500'-'8503', '8505'-'8509', '8511'-'8549', '8551'-'8559', '8588'-'8589', '8720'-'8780', '8790',
'8812', '8940', '8941', '8983', '8930'-'8936', '8950', '8951', '8971'-'8981', '8970',
'9010'-'9013', '9016', '9020', '9030', '9050'-'9055', '9110', '9181'-'9187', '9191'-'9195',
'9200', '9221', '9230', '9241'-'9243', '9250', '9261', '9262', '9270'-'9275', '9280'-'9282', '9290',
'9300'-'9302', '9310'-'9312', '9320'-'9322', '9330', '9340'-'9342', '9370'-'9372', '9363', '9722'='XX'
other='??';
```

value \$f3KidMb

```
'1' = 'I. Leukemias, myeloproliferative diseases, and myelodysplastic diseases'
'1a' = 'Ia. Lymphoid leukemias'
'1b' = 'Ib. Acute myeloid leukemias'
'1c' = 'Ic. Chronic myeloproliferative diseases'
'1d' = 'Id. Myelodysplastic syndrome and other myeloproliferative diseases'
'1e' = 'Ie. Unspecified and other specified leukemias'
'2' = 'II. Lymphomas and reticuloendothelial neoplasms'
'2a' = 'IIa. Hodgkin lymphomas'
'2b' = 'IIb. Non-Hodgkin lymphomas (except Burkitt lymphoma)'
'2c' = 'IIc. Burkitt lymphoma'
'2d' = 'IIId. Miscellaneous lymphoreticular neoplasms'
'2e' = 'IIe. Unspecified lymphomas'
'3' = 'III. CNS and miscellaneous intracranial and intraspinal neoplasms'
'3a' = 'IIIa. Ependymomas and choroid plexus tumor'
'3b' = 'IIIb. Astrocytomas'
'3c' = 'IIIc. Intracranial and intraspinal embryonal tumors'
'3d' = 'IIIId. Other gliomas'
'3e' = 'IIIe. Other specified intracranial and intraspinal neoplasms'
'3f' = 'IIIIf. Unspecified intracranial and intraspinal neoplasms'
'4' = 'IV. Neuroblastoma and other peripheral nervous cell tumors'
'4a' = 'IVa. Neuroblastoma and ganglioneuroblastoma'
'4b' = 'IVb. Other peripheral nervous cell tumors'
'5' = 'V. Retinoblastoma (not separated now)'
'6' = 'VI. Renal tumors'
'9' = 'IX. Soft tissue sarcomas'
'10' = 'X. Germ cell tumors'
'X1' = '3b if C72.3; and 3d if C70.0-C72.2, C72.4-C72.9, C75.1, C75.3'
'X2' = '3c if C70.0-C72.9; and 4b if C00.0-C69.9, C73.9-C76.8, C80.9'
'X3' = '3f if C70.0-C72.9, C75.1-C75.3; otherwise XX'
'X4' = '6 with conditions'
'X5' = '9 with conditions a'
'X6' = '9 with conditions b'
'X7' = '10 with conditions'
'XX' = 'All other Third Edition Morphology codes';
```

/*Following are the International Classification of Childhood Cancer, Second Edition*/

/*This version for slightly different grouping of cancers to analyse*/

invalue \$i2KidMb

```

'9820'-'9827','9850'='1a'
'9840','9841','9861','9864','9866','9867','9891','9894','9910'='1b'
'9863','9868'='1c'
'9830','9842','9860','9862','9870'-'9890','9892','9893','9900','9930'-'9941'='1d'
'9800'-'9804'='1e'
'9650'-'9667'='2a'
'9591'-'9595','9670'-'9686','9690'-'9714','9723'='2b'
'9687'='2c'
'9720','9731'-'9764'='2d'
'9590'='2e'
'9383','9390'-'9394'='3a'
'9381','9400'-'9441'='3b'
'9470'-'9473'='3c'
'9382','9384','9442'-'9460','9481'='3d'
'8270'-'8281','8300','9350'-'9362','9480','9505','9530'-'9539'='3e'
'9490','9500'='4a'
'8680','8693'-'8710','9501'-'9504','9520'-'9523'='4b'
'9510'-'9512'='XX'
'9380'='X1' /*3b if C72.3*/
/*3d if C70.0-C72.2, C72.4-C72.9*/
'8000'-'8004'='X3' /*3f if C70.0-C72.9, C75.1-C75.3, otherwise code to XX (or 6)*/
/*6*/
'8960','8964','8312'='6'
/*6 with conditions*/
'8963','8010'-'8041','8050'-'8075','8082','8120'-'8122','8130'-'8141','8143','8155',
'8190'-'8201','8210','8211','8221'-'8231','8240','8241','8244'-'8246','8260'-'8263',
'8290','8310','8320','8323','8401','8430','8440','8480'-'8490','8504','8510','8550',
'8560'-'8573'='X4'
/*9*/
'8810','8811','8813'-'8833','8900'-'8920','8991','9540'-'9561','9140','8840'-'8896',
'8982','8990','9040'-'9044','9120'-'9134','9150'-'9170','9251','9581'='9'
/*9 with conditions*/
'8800'-'8804'='X5'
'9240','9260','9231','9364','9363'='X6'
/*10*/
'8380','8381','8441'-'8473','8590'-'8670','9000'='10'
/*10 with conditions*/
'9060'-'9102'='X7'
'8232'-'8239'='X8'
/*Group all others*/
'8042'-'8049','8076'-'8081','8083'-'8119','8123'-'8129','8142','8144'-'8154','8156'-'8189',
'8202'-'8209','8212'-'8220','8242'-'8243','8247'-'8259','8314'-'8319','8321'-'8322',
'8330'-'8350','8370'-'8375','8390'-'8400','8402'-'8420','8431'-'8439','8491'-'8503',
'8505'-'8509','8511'-'8549','8551'-'8559','8574'-'8580','8720'-'8780','8812',
'8930','8933','8940','8941','8950','8951','8970'-'8981','9020','9050'-'9053',
'9110','9180'-'9200','9220'-'9230','9250','9261'-'9330','9370','9580','9722'='XX'
other='??';

```



```

10='I. Leukemias'
11='Ia. Lymphoid leukemias'
12='Ib. Acute myeloid leukemias'
19='Ic,d,e. Other leukemias'
20='II. Lymphomas'
21='IIa. Hodgkin lymphomas'
22='IIb,c. Non-Hodgkin lymphomas (incl. Burkitt lymphoma)'
29='IIId,e. Other lymphomas'
30='III. CNS neoplasms'
31='IIIb. Astrocytomas'
32='IIIc. Intracranial and intraspinal embryonal tumours'
39='IIIa,d,e,f. Other CNS tumours'
40='IV. Sympathetic NS tumours'
60='VI. Renal tumors'
90='IX. Soft tissue sarcomas'
100='X. Germ cell tumors'
999='Other Childhood Cancers';

```

```

/*Following are Second Edition Morph groupings for Youths (15-24)*/

```

```

invalue i2YthM

```

```

9821,9825,9826,9827=11
9840,9861,9866,9891,9910,9942=12
9863,9820,9822,9823,9824,9860,9862,9864,9865,9810,9830,9841,9842,9850,9867,9868,
9870,9880,9890,9892,9893,9894,9900,9920,9930,9931,9932,9940,9941, 9800-9804=19
9593-9649,9670-9714,9723,9590,9591,9592=21
9652-9667,9650=22
9380,9421,9410-9420,9422-9424,9401,9440-9442,9481,9400,9450,9451,9381-9384,9430,9443,9460,
9391-9394=30
9350=310
9390,9530-9539=30
8281, /*8300,*/9480,9505,9990=320
8000-8004,9260,9364,9470-9473=390
9161,8010,9540-9570=380
9180-9190,9220-9240=40
9250,9261,9370,8812=40
8800,8801,8803=490
8810-8811,8813,8814,8830,8832,8833,8900-8920,8991,8850-8881,8890-8896,9040-9043, 9044,9120-9160=50
9581,8804,8840,8990,9170,9251, /*9561,*/9580=50
8802=520
9060-9102,8140,8270-8280=360
8011-8139,8141-8239,8246-8269,8282-8580=610
8720-8780=70
/*8010-8580=71*/
other=90;

```

```

/* VARIABLE: YouthMorphGp1 DESCRIPTION: Adolescent (>=15 <25 Yrs) Cancer Grouping 1
VARIABLE: YouthMorphGp2 DESCRIPTION: Adolescent (>=15 <25 Yrs) Cancer Grouping 2

```

YEAR(S): 1981,1986,1991,1996,2001 */	
value f2YthM	
10='1. Leukaemias'	11='1.1 Acute lymphoid leukaemia'
12='1.2 Acute myeloid leukaemia'	19='1.x Other Leukaemias'
20='2. Lymphomas'	21='2.1 Non-Hodgkins Lymphoma [NHL]'
22='2.2 Hodgkins Disease [HD]'	30='3. CNS Neoplasms'
40='4. Bone Neoplasms (incl. Ewings)'	50='5. Soft Tissue Sarcomas'
60='6. Germ Cell neoplasms'	70='7. Melanoma & Skin cancers'
81='8.1 Carcinoma in situ cervix'	82='8.2 Thyroid carcinoma'
90='9. Other Youth Cancers'	.='0. Not Applicable';
value fAgeCat	
014='Children (0-14 yrs at Diagnosis)'	1524='Youths (15-24 yrs at Diagnosis)'
2599='Adults (25+ years at Diagnosis)';	

Table 82 SAS Cancer format groupings added in DataLab

/*****CANCER FORMAT GROUPINGS ADDED IN DATALAB*****/	
/* VARIABLE: ICD1Group, ICD2Group, ICD3Group, ICD4Group	
Used to label collapsed ICD Groups into those used in the report (but as numbers so get order right)	
YEAR(S): 1981,1986,1991,1996,2001 */	
value fICDGpn	
10 = 'First Cancer'	100 = 'C00X Lip, oral cavity & pharynx'
110 = 'C15- Oesophagus'	120 = 'C16- Stomach'
130 = 'Colon'	140 = 'C18-C20 Colorectal'
160 = 'C21- Anus & anal canal'	170 = 'C22- Liver'
180 = 'C23X Gallbladder'	190 = 'C25- Pancreas'
200 = 'C26X Digestive tract-other'	210 = 'C30X Ear, larynx and nose'
215 = 'C33-C34 Lung,Trachea&Bronchus'	220 = 'C33X Trachea and bronchus'
230 = 'C34- Lung'	240 = 'C37X Mediastinum'
250 = 'C40X Bone and cartilage'	255 = 'C43-&D03- Melanoma plus in situ'
260 = 'C43- Melanoma'	270 = 'C44- Other skin'
280 = 'C45- Mesothelioma'	290 = 'C46X Mesothelial & soft tissue'
300 = 'C50- Breast'	310 = 'C51X Other female genitals'
320 = 'C53- Cervix'	330 = 'C54- Endometrium'
340 = 'C56- Ovary'	350 = 'C61- Prostate'
360 = 'C62- Testes'	370 = 'C64- Kidney, except renal pelvis'
380 = 'C67- Bladder'	390 = 'C69X Eye, meninges & rest of CNS'
400 = 'C71- Brain'	410 = 'C73- Thyroid'
420 = 'C76X Ill defined sites'	430 = 'C81- Hodgkin''s Disease'
440 = 'C82-C85 NHL'	450 = 'C900 Multiple myeloma'
460 = 'C91-C95 Leukaemia'	470 = 'C96- Other lymphoid'
480 = 'CXXX Other Cancers'	490 = 'CXXX+ Other & Small Cancers'
500 = 'CXXX+ Other,Small,IllDefined'	810 = 'D03- Melan in situ'
820 = 'D05- CIS breast'	830 = 'D06- CIS cervix'

840 = 'D09X CIS other'

850 = 'D45X Myeloproliferative dis.';

Appendix 2. ICD 9 and ICD 10

ICD 9 and ICD 10

ICD-10 represents the most substantial shift in the classification scheme since 1948.

The changes in oncology rules include:

- A new code for malignant neoplasm of independent primary sites
- The transfer of some diseases of the blood and blood forming organs in ICD9 to non-malignant neoplasm in ICD-10
- Transfer between malignant melanoma and other malignant skin neoplasms
- A gain in malignant neoplasms of lymphoid, haematopoietic and related tissue in ICD10
- Introduction of new codes for mesothelioma and Kaposi's sarcoma (Brock, Griffiths et al. 2004).

Also of note is the new interpretation of the rules governing the selection of underlying cause of death on death certificates. This new interpretation now favours selecting cancer as the underlying cause of death with a concomitant shift away from respiratory causes (i.e. pneumonia). In the UK this resulted in a 3.3% increase in cancer mortality solely due to the shift to ICD-10 (Brock, Griffiths et al. 2004). In the US looking at trends in all cancer mortality, the change to ICD-10 made cancer mortality rates per 100 000 appear stable in the first few years after introduction. However if ICD-9 coding was continued cancer mortality rates decreased (Jemal, Ward et al. 2003).

A number of studies have looked at the differences between ICD-9 and 10 for mortality. These are known as bridge coding studies- the basic method is to independently code a group of deaths with ICD-9 and 10 and then calculate comparability ratios. Comparability ratios indicate the net effect of the change in coding on a particular cause. A ratio of 1 indicates the same number of deaths (although not necessarily the same deaths), greater than one is a net gain to that cause and less than one a net loss (Office for National Statistics 2002; Anderson, Minino et al. 2001). These ratios are likely to be slightly different for different countries due to different population causes of deaths.

Cancer mortality concordance between ICD-9 and ICD-10 varies in the reported studies; in England and Wales there was a net increase in cancer mortality of 3.1%, (Office for National Statistics 2002) in the US there was a 0.68% gain (Anderson, Minino et al. 2001) while Australia reported no change (Australian Bureau of Statistics 2006).

Cancer codes for ICD-9 were 140-209, and for ICD10 C00-D48, although not all of these are notifiable to the New Zealand cancer register (e.g. certain skin cancers and benign cancers). The effect of the change between ICD 9 and ICD 10 on incident cancer registrations does not appear to have been documented, although the changes described above would suggest there would be a possible 'gain' in what is considered cancer. In NZ in 2000 (when ICD-10 was first introduced) there were 17700 new cancers registered compared to 16790 in 1999, which is a 5.4% increase (see Figure 4) (New Zealand Health Information Service 2004; New Zealand Health Information Service 2002). Some of that increase may reflect changing classifications of cancer, i.e. inclusion of 'new' cancers. In 2001 there were 17913 new cancers registered (New Zealand Health Information Service 2005).

Interestingly data investigation revealed that prior to 2000 there were two ICD 9 codes that were not officially cancer (i.e. in 140-239) that appear in our dataset. However both of these codes were haemopoetic conditions that 'became' cancer in ICD 10 (see Table 86). These are unlikely to be of significance due to the small numbers.

Figure 4 Total cancer registrations in New Zealand 1995-2004.

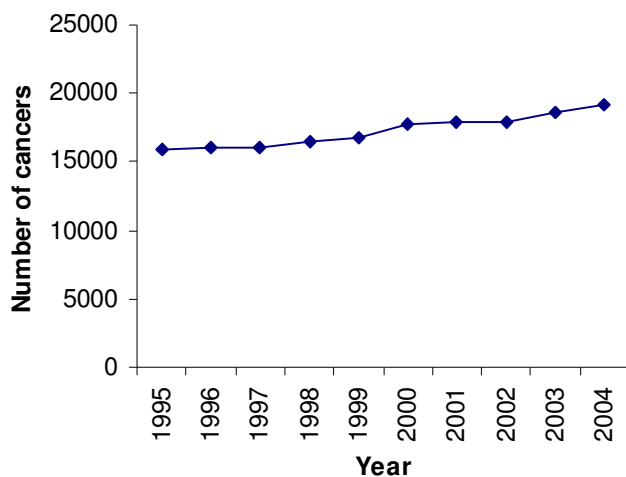


Table 83 'New' neoplasms under ICD-10

ICD-9 code and description	ICD-10 code and description	Number of people affected in dataset
2733-Macroglobulinemia, under Other Metabolic and Immunity Disorders(270-279)	C8800 Waldenstroms macroglobulinaemia	94
2898 Other specified diseases of blood and blood-forming organs under Diseases of the Blood and blood forming organs (280-289)	C9450 Acute myelofibrosis (without mention of remission)	7

Mapping CancerTrends data from ICD 9- ICD10

Ensuring that all the ICD coding on CancerTrends was a complex and iterative process and this is a summary of this process.

As discussed in section 1.4.1 NZHIS had undertaken mapping between ICD 9 and ICD 10 on the Cancer Register, meaning that all registrations in the CancerTrends data (except the 1996 cohort) were in both ICD10 and ICD9. The ICD 9 variable contained diagnoses originally coded in ICD 9 until 2000 and cancers that were subsequently

primary coded in ICD 10, backwards mapped to ICD9. The ICD10 variable contained all diagnoses from 2000 primarily coded in ICD10 and all cancers prior to that mapped to ICD 10.

Two different schemes, logical and historical, are available for mapping registrations prior to 2000 from ICD-9 to ICD-10. On the ICD 10 variable that NZHIS provided us with they had used the logical mapping scheme. The differences between logical and historical mapping scheme are fairly minor (see Table 84).

Table 84 ICD-10 logical and historical mapping scheme differences

ICD-9 code and description	ICD-10 logical code and description	ICD-10 historical code and description	Number of people affected in dataset
1763 Kaposi's sarcoma gastrointestinal sites	C269 Ill defined sites within the digestive system	C467 Kaposi's sarcoma of other sites	1
1764 Kaposi's sarcoma lung	C349 Bronchus or lung unspecified	C467 Kaposi's sarcoma of other sites	1
1838 Other specified sites of uterine adnexa	C574 Uterine adnexa unspecified	C578 Overlapping lesion of female genital organs	37

After consideration of the differences between the two mapping schemes and discussion with NZHIS we decided to map **all** original ICD-9 codes until March 2001 (the end of the 1996 cohort), using the historical mapping scheme. The historical mapping scheme is thought to be more clinically appropriate.

In order to check the mapping we compared the UOW mapped ICD 9 codes with the NZHIS mapped ICD 9 codes for the 1981, 96 and 91 cohorts (note that the 1996 cohort had not been mapped on the UOW dataset). Disconcertingly some substantive differences were apparent (see Table 85).

Table 85 Differences between ICD9 codes mapped by NZHIS and UOW

NZHIS mapped ICD9 Codes	UOW Mapped ICD9 Codes	Comment
C45 (mesothelioma) 404 cases	C37 (thymus cancer) – 342 cases C46 (Kaposi's sarcoma)- 62 cases	No specific mesothelioma codes in ICD9
D03 (melanoma in situ) 2230 cases	D09 (carcinoma in situ excluding melanoma) -2230 cases	Problem with backwards and then forwards mapping and loss of detail
C15 1 case	C26 1 case	Only 1 case so ignored

We contacted NZHIS and they had this to say:

“In the case of these cancers that mapping included analysis of both the site and morphology codes. This was a specific one off piece of mapping work that was done and checked as rigorously as possible at the time. It probably involved a number of unique tweaks and some recoding of events after the fact. I don't have all the details about exactly what did and didn't occur” (personal communication Chris Lewis NZHIS)

So we have used a combination of site and morphology codes to resolve these specific issues:

Mesothelioma:

- 2001 cohort- were coded in ICD10
- All other cohorts: we created a code based on cancer morphology codes for mesothelioma: 9050-9053. Any cancer with those morphology codes, irrespective of the site code, went to C45.

Melanoma in situ:

- 2001 cohort- were coded in ICD10

- Pre 2001 if site9 codes 2320-2329 and morphology code 8720-8790 then go to D03 (melanoma in situ). If not those morphology code then cancers were put in D09 (carcinoma in situ-other).

Appendix 3. Cancer Groupings

Cancer groupings for adults

Table 86 Cancer groupings

Code stored in dataset	Definition	Name/Label	Comment
In situ cancers D00-D09			
D03-	2001 cohort D030-039 Pre 2001 site9 codes 2320-2329 and morphology code 8720- 8790	Melanoma in situ	
D05-	D050-059	Carcinoma in situ breast	
D06-	D060-069	Carcinoma in situ cervix	
D09X	All other D0 codes D000- 024, D040- 049, D070- 099	Carcinoma in situ other	
Neoplasm of uncertain behaviour D37-D48			
D45X	D45, 460-479	Chronic myeloproliferative and myelodysplastic disorders	This group only has cases in 2001 cohort i.e. these became 'new' cancers in ICD-10.
Malignant neoplasms C00-C47			
C00X	C000-148	Lip, oral cavity and pharynx	
C15-	C150-159	Oesophagus	
C16-	C160-169	Stomach	
C180	C180	Caecum	

Code stored in dataset	Definition	Name/Label	Comment
C182	C182	Ascending colon	
C183	C183	Hepatic Flexure	
C184	C184	Transverse colon	
C185	C185	Splenic flexure	
C186	C186	Descending colon	
C187	C187	Sigmoid	
C188	C181 and C188	Overlapping and appendix	
C189	C189	Unspecified	
C19-	C19	Rectosigmoid junction	
C20-	C200-208	Rectum	
C21-	C210-218	Anus and anal canal	Different aetiology from colorectal cancer- HPV- so need to keep separate.
C22-	C220-229	Liver and intrahepatic bile ducts	
C23X	C230-249	Gallbladder and extra-hepatic biliary tract	
C25-	C250-259	Pancreas	
C26X	C170-179 C260-269	Digestive tract-other, including small intestine	Both C17 and C26 groups had quite small numbers so we amalgamated them
C30X	C300-329	Ear, larynx and Nasal cavity	
C33X	C33-340	Trachea and bronchus	Each of these groups has over 1000 in them so big enough to keep at this level.
C341	C341	Upper lobe	
C342	C342	Middle lobe	
C343	C343	Lower lobe	
C348	C348-349	Unspecified and overlapping	
C37X	C370-399	Thymus, mediastinum, heart, pleura and other respiratory and intrathoracic system sites	
C40X	C400-419	Bone and articular cartilage	

Code stored in dataset	Definition	Name/Label	Comment
C43-	C430-439	Melanoma	
C44-	C440-449 for 1996 and 2001 cohorts Other cohorts go to 'other' cancers	Other skin	Less than 10 cases in both the 1981 and 1986 cohorts and 97 in the 1991 cohort so can only have this variable for the 1996 and 2001 cohorts (note only 344 cases in 2001 cohort and 325 in 1996). Presume that these notifications improved after the passing of the Cancer Register Act
C45-	C450-459 for 2001 cohort Pre 2001 cohort morphology code 9050-9053	Mesothelioma	
C46X	C460-499	Mesothelial and soft tissue (except mesothelioma)	Problem with ICD9-10- should be sorted with the new definition for C45- need to check this.
C50-	C500-509	Breast	
C56-	C56	Ovary	
C54-	C540-55X	Uterus	C55 included in this group (similar to EPC report)- less than 200 out of about 6000
C53-	C530-539	Cervix	
C51X	C510-52X and C570-58X	Other female genital organs	
C61-	C61	Prostate	
C62-	C620-629	Testes	
C64-	C64	Kidney, except renal pelvis	
C67-	C670-679	Bladder	
C71-	C710-719	Brain	