

## Chapter 8. Surgery

### Introduction

Most surgical specialities are provided locally for Counties Manukau residents. Cardiac/cardio-thoracic surgery, neurosurgery and transplant surgery are the main exceptions.

In Counties Manukau public hospital discharges for surgery are comparatively low (Table 71). Of all acute care hospitalisations surgery make up about 34%, again low compared to other areas in New Zealand. A significant proportion of elective surgery is carried out in the private sector – over 50% of some procedures. Data relating to private hospital care has not been reported here – the latest information available only relates to 1995. We would expect that with equitable provision of public hospital surgical services that age-standardised rates of public hospital surgery should be roughly equal around the country no matter what provision of private services there is locally. Where this does not hold either there is additional need in the community; or there is additional supply (ie a lower threshold for operation for those residents).

**Table 71. Public hospital surgery discharges, 1999**

area	Surgery discharges	Surgery rate/100,000	All discharges rate/100,000	Surgery rate as % of total
Northland	13,616	9,384	23,189	40
North Shore	13,968	5,722	13,901	41
West Auckland	12,179	6,414	15,839	40
Central Auckland	21,824	5,905	15,668	38
<b>Counties Manukau</b>	<b>25,686</b>	<b>6,615</b>	<b>19,365</b>	<b>34</b>
Waikato	26,235	8,014	19,459	41
Bay of Plenty	25,963	9,380	21,547	44
Tairāwhiti/Hawkes Bay	18,293	9,364	21,388	44
Wanganui/Manawatu	18,602	8,274	18,504	45
Taranaki	10,490	9,719	22,744	43
Wellington	26,600	6,173	16,481	37
Nelson/Marlborough	10,679	8,623	17,273	50
Canterbury/ West Coast	40,050	7,662	19,327	40
Otago/Southland	21,453	7,392	17,838	41
<b>Total</b>	<b>285,638</b>	<b>7,444</b>	<b>18,432</b>	<b>40</b>

Surgery defined as Health Speciality Code = "S". Rates are crude rates per 100,000 population

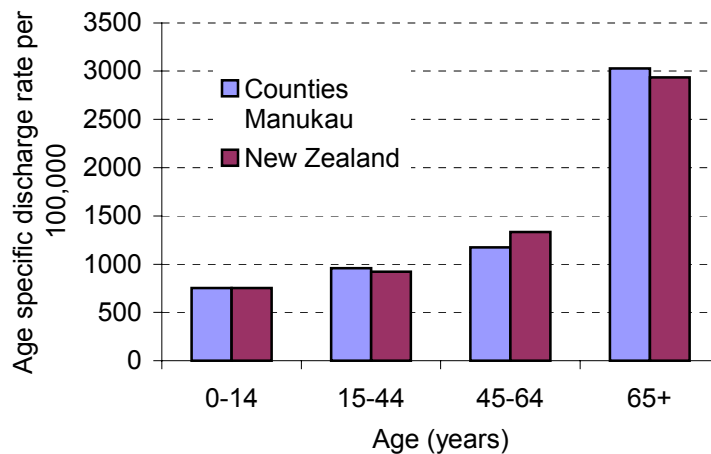
In this section the various surgical specialities are examined, and key or major individual procedures within each speciality are highlighted. As the various hospitals around New Zealand use differing definitions for each speciality, Service Related Groups (SRGs) were used. These are grouping of Diagnosis Related Groups (DRGs) such that every DRG is mapped to the speciality most likely to be treating it. The DRG version used is the Australian National DRG v 3.1. All data is sourced from the NMDS.

Using SRGs allows comparability – the same type of patients are counted no matter where in the hospital they were actually treated – at the expense of local accuracy. For example some cases treated on the general surgery ward here will not be counted as general surgery, while some cases from the orthopaedic ward will be, etc. A full list of the DRGs that have been ascribed to each speciality is available from the authors. Lastly it is worth noting that the SRG method tends to concentrate on procedural DRGs for surgery – patients treated with watchful waiting by the surgeons and then discharged may be counted under medicine in this method.

## General surgery

In 1999 Counties Manukau residents had 4,379 general surgery<sup>1</sup> discharges, a rate of 1128 discharges per 100,000 population. This compares to a rate of 1215/100,000 for the rest of New Zealand. For Counties Manukau residents 77% were treated by South Auckland Health. The age-specific rates of surgical discharges for Counties Manukau were similar to that of New Zealand in 1999 (Figure 142).

**Figure 142. Age specific rates of general surgery discharges, 1999.**



Maori rates of hospitalisation for general surgery for 1999 are slightly higher than the national figures, while the rates for Pacific people and others are similar (Figure 143).

**Figure 143. Surgical discharges by ethnicity, 1999.**

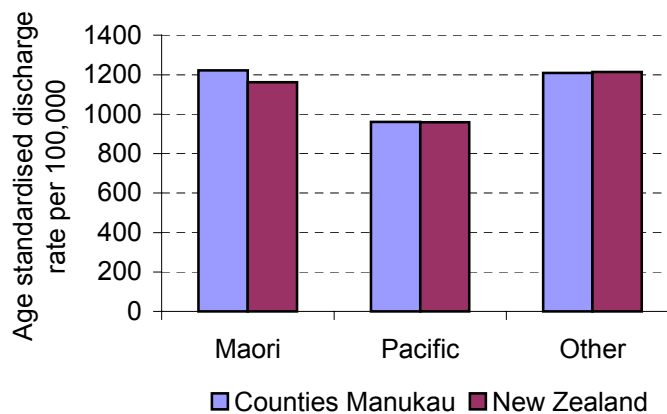
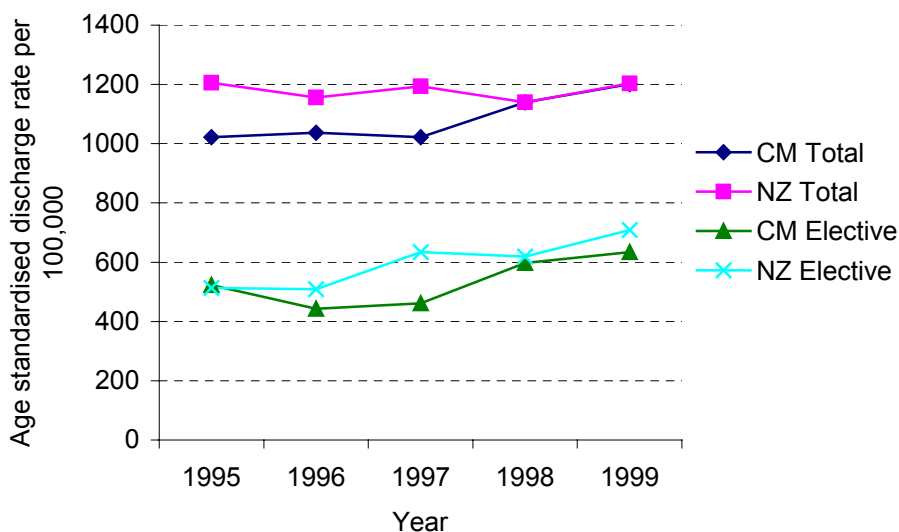


Figure 144 shows the rate of total and elective surgical discharges in Counties Manukau and the rest of New Zealand from 1995 to 1999. Counties Manukau accounts for approximately 9.4% (1999) of all surgical discharges nationally.

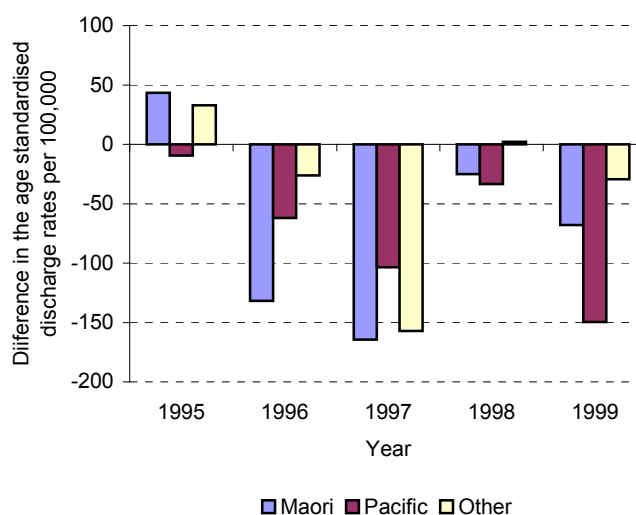
<sup>1</sup> General surgery defined by DRG listing available from author. 68 DRGs included. Note that endoscopy, non-procedural gastroenterology, and cellulitis are not included.

**Figure 144. Age standardised total and elective surgical discharge rate for Counties Manukau and New Zealand, 1995 – 1999.**



The differences in the rate of elective surgery discharges in Counties Manukau compared to the rest of New Zealand are quantified in Figure 145. In recent years the rate of elective general surgical discharges has been lower in Counties Manukau compared to the rest of New Zealand for all ethnic groups. In 1999, these differences were most marked among the Maori and Pacific people. An additional 280 operations per year would be needed to get Counties Manukau up to the current level for the rest of New Zealand.

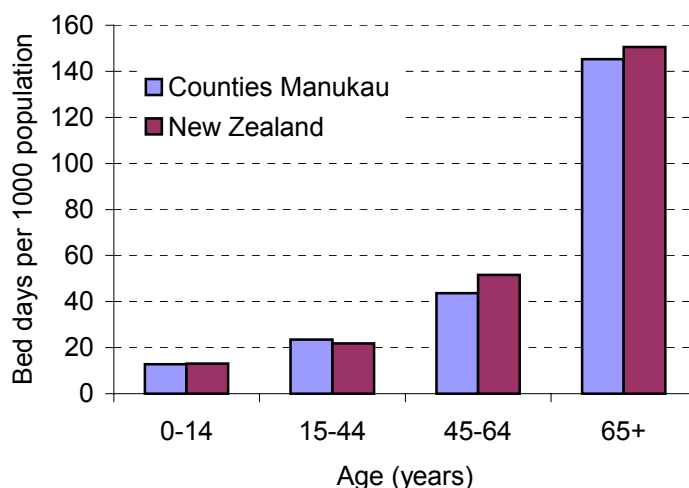
**Figure 145. Differences in elective general surgical discharge rates for Counties Manukau and New Zealand by ethnicity, 1995 – 1999.**



In 1999, Counties Manukau residents had 1,936 (44%) acute and 2,420 (55%) arranged or elective hospitalisations. This compares with 29% acute and 71% arranged/elective discharges for the rest of New Zealand – a marked disparity.

Surgical discharges accounted for 13,689 bed days (8,236 acute, 5,453 arranged/elective) with an average length of stay (ALOS) of 4.3 and 2.3 days for acute and arranged/elective discharges respectively in 1999. For the rest of New Zealand the ALOS were longer for both acute (5.5 days) and arranged/elective (2.6 days) discharges. Counties Manukau has slightly fewer bed days per 1000 population for those 45+ years compared to national figures (Figure 146).

**Figure 146. Surgical bed days per 1000 by age for Counties Manukau and New Zealand, 1999.**



Fifty percent of acute surgical discharges and 86% of arranged/elective discharges had their surgery on the day of admission. This compares with 56% and 78% for acute and arranged/elective surgery respectively for all of New Zealand. South Auckland Health elective general surgery services would appear to be relatively efficiently run, but the high rate of acute surgery apparent for the Counties Manukau population may be placing pressure on the acute service.

### Cholecystectomy procedures

Helped by Waiting Time Fund (WTF) contracts Counties Manukau residents now have a higher public hospital provision of cholecystectomy procedures than the New Zealand average, ranking 6<sup>th</sup> overall. The Counties Manukau ALOS of 4.7 days is above the New Zealand average of 3.8 days.

**Table 71. Cholecystectomy procedures, public hospitals, 1999**

Residents of:	Cholecystectomy Procedures		
	Number	Age-std rate	ALOS
Northland	150	103	4.0
North Shore	174	68	5.8
West Auckland	157	89	4.4
Central Auckland	207	57	6.7
<b>Counties Manukau</b>	<b>312</b>	<b>88</b>	<b>4.7</b>
Waikato	211	66	4.4
Rest of NZ	2,511	113	3.8
<b>Total NZ</b>	<b>3,722</b>	<b>97</b>	<b>4.2</b>

Note: Rate is per 100,000 total population, age-standardised to total New Zealand population ICD-9-CMA procedure code 512 (ie both laparoscopic and open)

Maori people in Counties Manukau tended to have a higher cholecystectomy than the European/Other group, and Pacific people a lower rate, but these were not statistically significant. Numerically the most gall bladders were removed in the 25-44 age group, but the risk of cholecystectomy was highest in the 65+ age group. Females had a statistically significant 3-fold higher rate of operation than males for all ethnic groups apart from Asian, and tended to have their operations earlier. Virtually all the operations in the 15-24 age group were for females (data not shown).

**Table 72. Cholecystectomy procedures, age standardised rates and as % of northern region for Counties Manukau residents compared with Northern HFA region, 1993-1997**

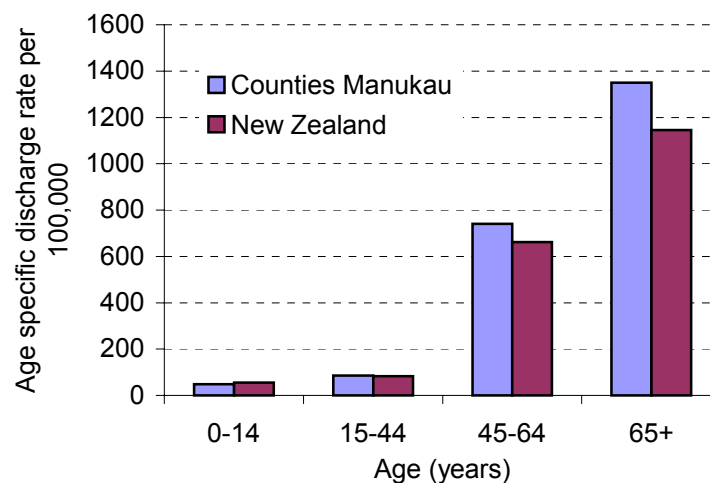
	Maori	Pacific	Asian	European/ Other	Total	% M to Euro	% PI to Euro
<b>Counties Manukau age-standardised rate</b>							
Male	55	26	64	46	47	118	57
Female	156	63	78	115	113	135	54
Total	111	45	67	80	80	139	57
0-14	1	1	3	1	1	-	-
15-24	70	22	7	36	38	196	62
25-44	146	70	55	86	91	169	81
45-64	165	74	78	128	123	128	58
65+	176	58	252	194	188	91	30
<b>% of Northern Region</b>							
Male	141	98	190	99	103		
Female	131	91	163	114	115		
Total	137	93	166	108	111		

Discharges per 100,000 population per year with a cholecystectomy, ICD -9-CM 512 in any procedure code, standardised to NZ usually resident population at 1996 census. Age group rates are age-specific.

## Cardio-thoracic Surgery

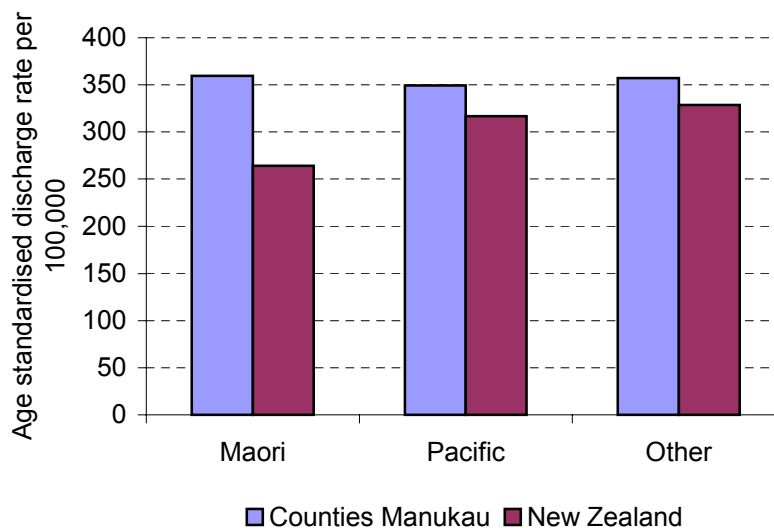
In 1999 Counties Manukau residents had 1,229 cardio-thoracic discharges<sup>2</sup>, a rate of 360 discharges per 100,000 population. This compares to a rate of 320/100,000 for the rest of New Zealand. South Auckland Health treated twenty-one per cent of South Auckland residents, mainly related to trauma under orthopaedic and plastic surgeons. The majority of Counties Manukau residents are treated at Auckland Healthcare at Greenlane Hospital. Figure 147 shows the rates of cardio-thoracic discharges by age group for Counties Manukau and New Zealand in 1999.

**Figure 147. Age specific rates of cardio-thoracic discharges for Counties Manukau residents and New Zealand, 1999.**



The rates of discharge for all ethnic groups residing in Counties Manukau for cardio-thoracic surgery are higher than the national figures. (Figure 148)

**Figure 148. Age standardised rate of cardiothoracic discharges by ethnicity for Counties Manukau residents and New Zealand, 1999.**

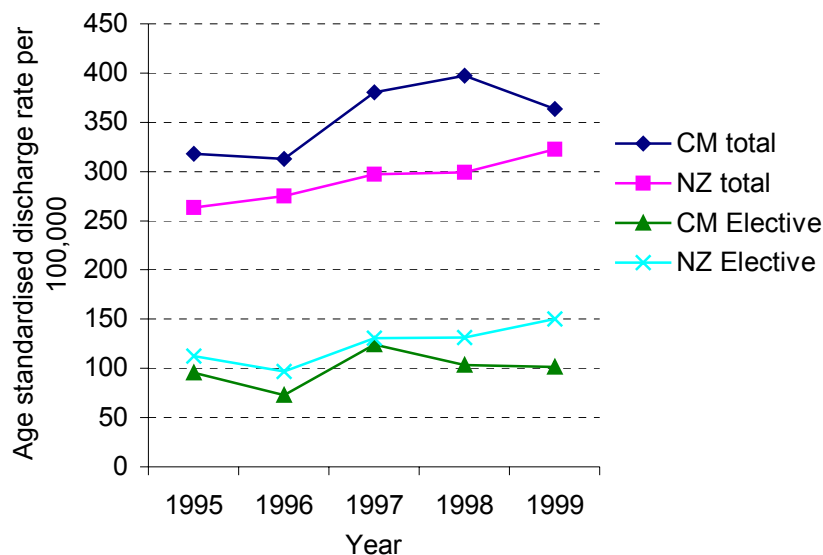


While the total rate of cardio-thoracic surgery has increased for Counties Manukau residents each year since 1995, the rate of elective surgery in Counties Manukau has not kept pace with the rest of the country in more recent years (Figure 149). Counties

<sup>2</sup> Cardio-thoracic defined by DRG listing available from author. 26 DRGs included.

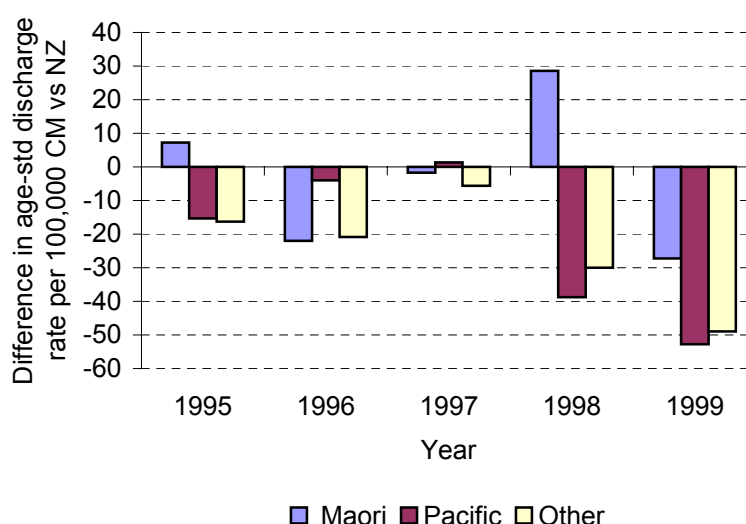
Manukau residents account for approximately 11% (in 1999) of all cardio-thoracic discharges nationally.

**Figure 149. Age standardised rate of total and elective cardio-thoracic discharges for Counties Manukau and New Zealand, 1995 – 1999.**



In recent years the rate of elective cardio-thoracic discharges has been lower for residents of Counties Manukau compared to the rest of New Zealand, for all ethnic groups (Figure 150). An additional 180 operations per year would be needed to get Counties Manukau up to the current level for the rest of New Zealand if that were to be used as a benchmark of population need.

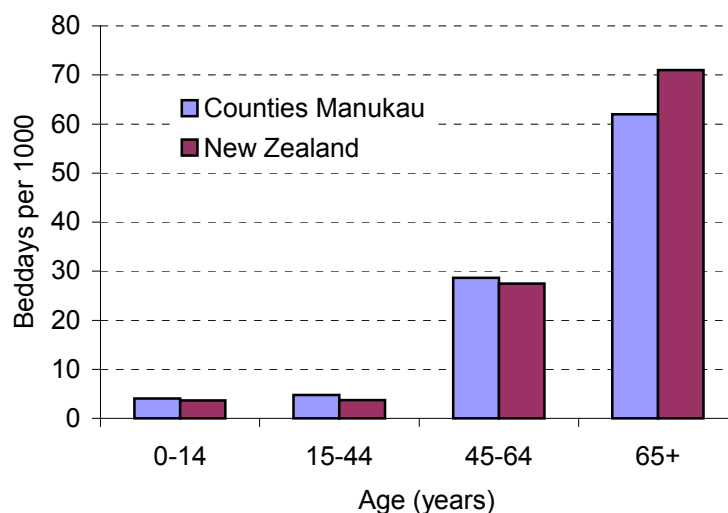
**Figure 150. Differences in elective cardio-thoracic discharge rates for Counties Manukau and New Zealand by ethnicity, 1995 – 1999.**



In 1999, Counties Manukau residents had 364 (30%) acute and 864 (70%) arranged or elective hospitalisations. This compares with 28% acute and 72% arranged/elective discharges for the rest of New Zealand. Cardio-thoracic discharges accounted for 5,554 bed days (3,001 acute, 2,553 arranged/elective) with an average length of stay (ALOS) of 8.2 days for acute and 3.0 days for arranged/elective discharges in 1999. For the rest of New Zealand the ALOS were longer for both acute (9.8 days) and arranged/elective

(3.2 days) discharges. Cardio-thoracic bed days per 1000 population by age are shown in Figure 151.

**Figure 151. Cardio-thoracic bed days per 1000 population by age for Counties Manukau and New Zealand, 1999.**



Forty-one per cent of acute cardio-thoracic discharges and 41% of arranged/elective discharges for Counties Manukau residents had their cardio-thoracic surgery on the day of admission. This compares with 33% and 46% respectively for all of New Zealand.

### Coronary artery bypass grafts and angioplasty

The Auckland metropolitan area has a relatively high rate of cardiac surgery compared to the rest of New Zealand. Counties Manukau people have the fourth highest rate of intervention for coronary artery bypass graft (CABG) and angioplasty procedures of the 14 localities across New Zealand. Interestingly, North Auckland residents, whilst presumably enjoying the same access as the rest of Auckland (Greenlane Hospital seems to treat West, Central and Counties Manukau reasonably similarly for these procedures) have a much lower rate of cardiac intervention. This presumably relates to the relatively affluent nature of the population there, and thus lower need for cardiac surgery, and to a greater likelihood of using private providers when surgery is required.

**Table 73. Coronary artery bypass graft & angioplasty operations, public hospitals, 1999**

Residents of:	Number of operations		Age-std rate/100,000		ALOS	
	CABG	Angioplasty	CABG	Angioplasty	CABG	Aplsty
Northland	88	77	43	49	13.5	3.4
North Shore	97	97	30	37	11.7	2.9
West Auckland	87	79	43	49	11.5	3.2
Central Auckland	188	197	50	59	12	3.0
<b>Counties Manukau</b>	<b>161</b>	<b>182</b>	<b>42</b>	<b>54</b>	<b>10.7</b>	<b>2.3</b>
Waikato	151	198	40	62	15.2	5.6
Rest of NZ	995	1612	41	71	13.2	4.2
<b>Total</b>	<b>1,767</b>	<b>2,442</b>	<b>332</b>	<b>446</b>	<b>12.9</b>	<b>3.9</b>

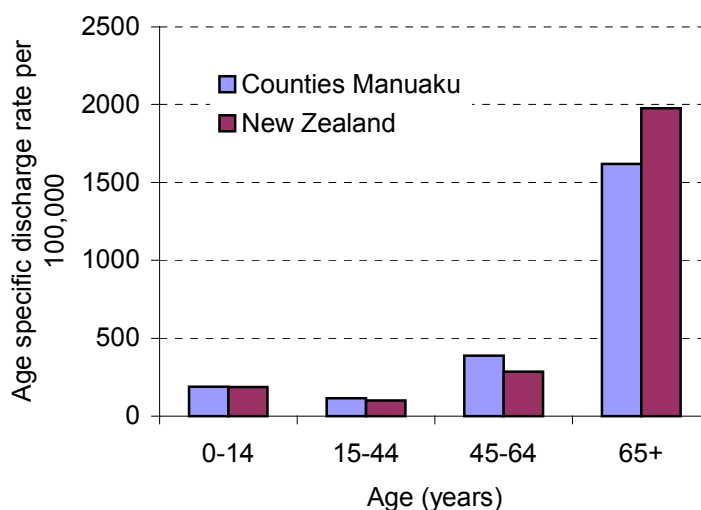
Note: Age-standardised to total New Zealand population. CABG = coronary artery bypass graft. ALOS = average length of stay. CABG ICD-9-CMA procedure code 361, angioplasty ICD-9-CMA procedure code 360

Despite having similar ischaemic heart disease discharge rates Maori and Pacific people in Counties Manukau have a much lower rate of cardiac intervention than do Europeans. This is particularly noticeable in the over 65 age group, where only one-sixth of the operations expected are performed.

## Ophthalmology

In 1999 Counties Manukau residents had 1238 ophthalmology discharges<sup>3</sup>, a rate of 370 discharges per 100,000 population. This is similar to the rate of 375/100000 for the rest of New Zealand. South Auckland Health treat 35% of Counties Manukau residents. Figure 152 shows the rate of ophthalmology discharges for Counties Manukau and New Zealand in 1999.

**Figure 152. Age specific rates of ophthalmology discharges by age for Counties Manukau residents and New Zealand, 1999.**



Compared with the rates for New Zealand for 1999 Counties Manukau Maori rates are lower than the national figures, while the rates for Pacific people and others are similar (Figure 153).

**Figure 153. Ophthalmology discharges by ethnicity for Counties Manukau and New Zealand, 1999.**



The total rate of Counties Manukau ophthalmology discharges has increased in recent years to be more in line with the national rate (Figure 154). Counties Manukau accounts for approximately 8.5% (in 1999) of all ophthalmology discharges nationally.

**Figure 154. Age standardised rate of total and elective ophthalmology discharges for Counties Manukau and New Zealand, 1995 - 1999**

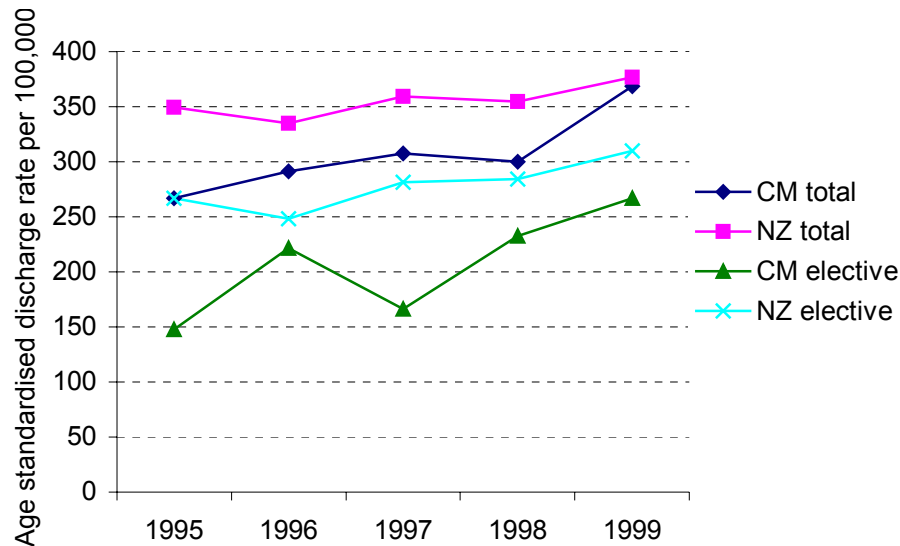
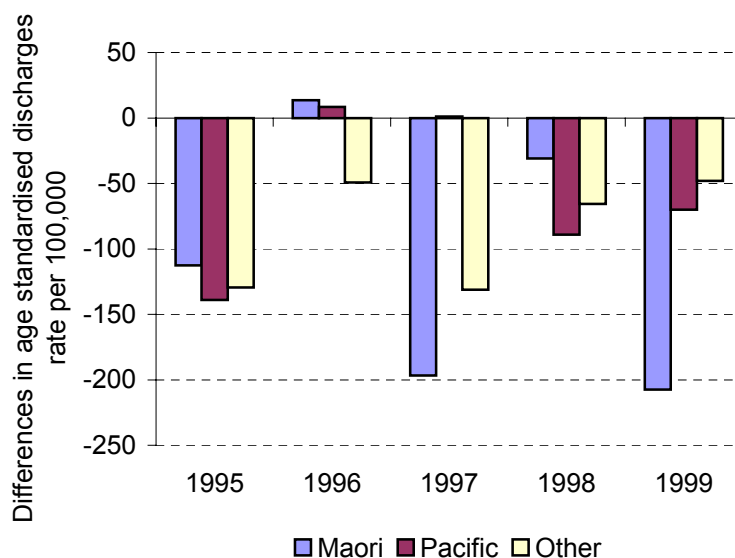


Figure 155 shows the differences in the rate of elective ophthalmology discharges in Counties Manukau compared to the rest of New Zealand. The rate of elective ophthalmology discharges has been lower in Counties Manukau compared to the rest of New Zealand for all ethnic groups. In 1999 these differences were most marked among Maori. An additional 160 operations per year would be needed to get Counties Manukau up to the current level for the rest of New Zealand. Appropriate and equitable CPAC (Clinical Priority Access Criteria) levels are required.

**Figure 155. Differences in elective ophthalmology discharge rates for Counties Manukau and New Zealand by ethnicity, 1995 – 1999.**

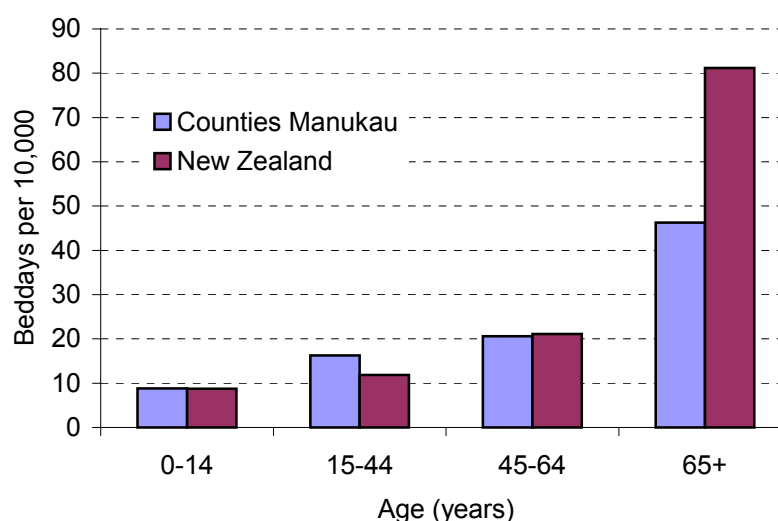


<sup>3</sup> Ophthalmology defined by DRG listing available from author. 19 DRGs included.

In 1999 Counties Manukau residents had 169 (14%) acute and 1065 (86%) arranged or elective ophthalmology hospitalisations. This compares with 9% acute and 91% arranged/elective discharges for the rest of New Zealand.

Ophthalmology discharges accounted for 691 bed days (397 acute, 294 arranged/elective) with an average length of stay (ALOS) of 2.3 and 0.3 days for acute and arranged/elective discharges respectively, in 1999. For the rest of New Zealand the ALOS for acute (2.6 days) and arranged/elective (0.3 days) discharges were very similar. Counties Manukau residents had fewer bed days per 10,000 population for those aged 65+ years compared to national figures (Figure 156).

**Figure 156. Ophthalmology bed days per 10,000 by age for Counties Manukau and New Zealand, 1999.**



Sixty six percent of acute ophthalmology discharges and 98% of arranged/elective discharges had their surgery on the day of admission. This compares with 71% and 97% for acute and arranged/elective ophthalmological surgery respectively for all of New Zealand.

### Cataract procedures

Counties Manukau people seem to get good access to what ophthalmology services are available at Auckland Hospital, having a similar rate of operation to people living in Central Auckland for example. If we compare Counties Manukau to the rest of New Zealand however the rates are much lower. Assuming this level of operation was appropriate Counties Manukau residents would need an additional 80 cataract removals to come up to the current New Zealand average.

**Table 74. Cataract removal operations, public hospitals, 1999**

Residents of:	Cataract procedures		
	Number	Age-std rate	ALOS
Northland	364	240	0.6
North Shore	231	87	0.1
West Auckland	175	125	0.1
Central Auckland	449	130	0.2
<b>Counties Manukau</b>	<b>534</b>	<b>174</b>	<b>0.1</b>
Waikato	517	165	0.4
Rest of NZ	5,620	242	0.2
Total NZ	7,890	206	0.2

Note: Rate is per 100,000 population age-standardised to total New Zealand population.

ALOS = average length of stay. Cataract ICD-9-CMA procedure code 131-136

Cataracts are mainly a disease of old age (Table 75). Counties Manukau Maori and Pacific people have 2-3 times the rate of public hospital surgery for cataract than the European/Other group, and tend to have the operation at an earlier age. This would seem to be a disease prevalence difference, possibly related to diabetes. Only around a third of all cataract surgery in the Northern Region occurs in public hospitals, but it is unlikely that this differential relates to access to private surgery because similar rates exists across New Zealand, despite varying private surgery proportions.

**Table 75. Cataract removal procedures, Counties Manukau residents compared with Northern HFA region, 1993-1997**

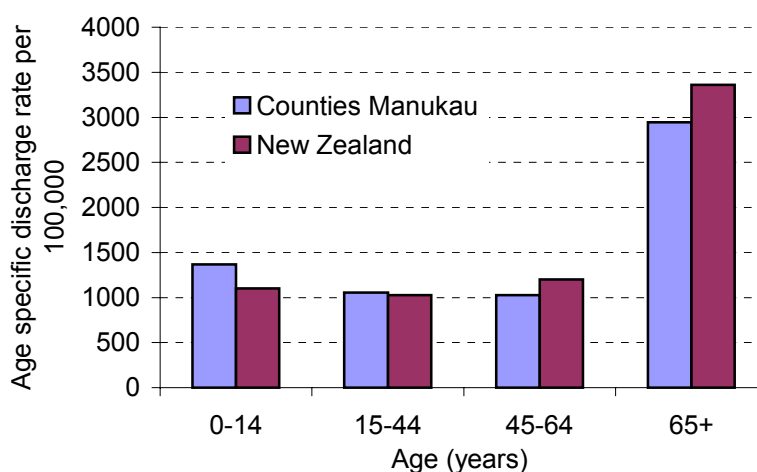
	Maori	Pacific	Asian	European/ Other	Total	% M to Euro	% PI to Euro
<b>Counties Manukau age-standardised rate*</b>							
Male	228	325	93	91	119	250	356
Female	253	408	183	100	136	254	409
Total	246	373	144	96	129	256	388
0-14	6	17	0	5	8	115	347
15-24	3	11	0	6	6	56	187
25-44	22	34	8	9	15	236	374
45-64	318	464	96	66	136	481	702
65+	1323	2133	901	668	783	198	320
<b>% of Northern Region</b>							
Male	92	115	89	101	110		
Female	121	106	126	105	117		
Total	109	109	113	103	114		

Discharges per 100,000 population per year with a cataract procedure ICD -9-CM: 131 - 136 in any procedure code. Age standardised to 1996 NZ population. Age group rates are age-specific rather than standardised.

## Orthopaedic surgery

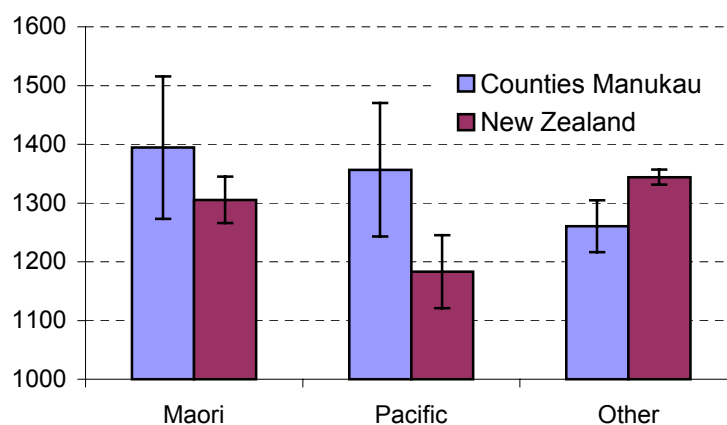
In 1999 Counties Manukau residents had 5,028 orthopaedic<sup>4</sup> discharges, a rate of 1,350 discharges per 100,000 population. This is the same as for the rest of New Zealand (1,347/100,000). Eighty three percent of Counties Manukau residents were treated by South Auckland Health. The majority of those not treated by South Auckland Health will have suffered their injury away from home, and been treated by the local hospital. Figure 157 shows the age-specific rate of orthopaedic discharges for Counties Manukau and New Zealand in 1999.

**Figure 157. Age specific rates for orthopaedic discharges by age for Counties Manukau residents and New Zealand, 1999.**



Maori and Pacific people in Counties Manukau are over represented compared to the national figures (Figure 158). This relates in part to the prevalence of injury requiring hospitalisation that is covered by age group in the section on the life cycle. Elective discharge rates in Counties Manukau are well below that for the rest of New Zealand (Figure 159). Counties Manukau accounts for approximately 9.6% (1999) of all orthopaedic discharges nationally.

**Figure 158. Age standardised rate for orthopaedic discharges by ethnicity for Counties Manukau residents and New Zealand, 1999.**



<sup>4</sup> Orthopaedics defined by DRG listing available from author. 57 DRGs included. Note that skin related disorders and arthritis related disorders are not included.

**Figure 159. Age standardised rate of total and elective orthopaedic discharges for Counties Manukau and New Zealand, 1995 – 1999.**

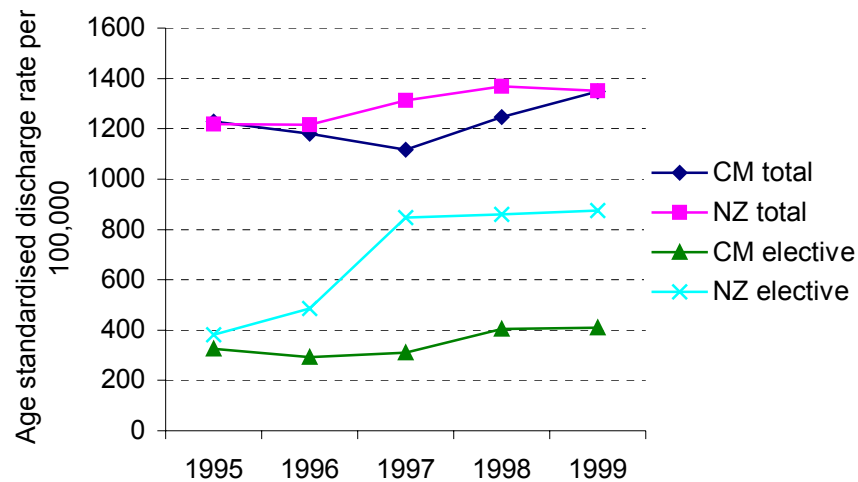
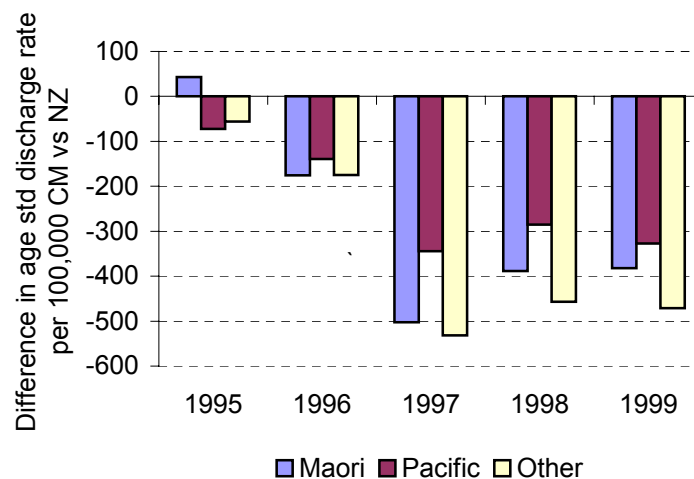


Figure 160 shows the differences in the rate of elective orthopaedic discharges in Counties Manukau compared to the rest of New Zealand. The rate of elective orthopaedic discharges for the past four years has been lower than for the rest of New Zealand. An additional 1700 elective operations per year would be needed to get Counties Manukau up to the current level for the rest of New Zealand, not allowing for any "backlog" of need for surgery.

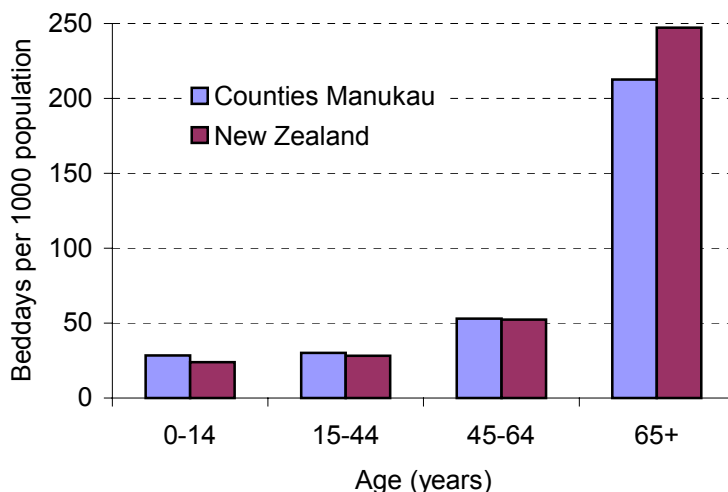
**Figure 160. Differences in elective orthopaedic discharge rates for Counties Manukau and New Zealand by ethnicity, 1995 – 1999.**



In 1999 Counties Manukau residents had 3,171 (59%) acute and 2,209 (41%) arranged or elective orthopaedic hospitalisations. This compares with 32% acute and 68% arranged/elective discharges nationally. The low rate of elective surgery in Auckland is clearly evident. Orthopaedic discharges accounted for 19,503 bed days (12,612 acute, 6,891 arranged/elective) with an average length of stay (ALOS) of 4.0 and 3.1 days for acute and arranged/elective discharges respectively, in 1999. National ALOS were longer for both acute (5.2 days) and arranged/elective (3.7 days) admissions – South Auckland Health orthopaedic services appears to be relatively efficient. Orthopaedic

bed days per 1000 population by age are shown in Figure 161. Counties Manukau has slightly more bed days per 1000 population for those between 1 – 65 years compared to national figures. This pattern is reversed for those 65+ years in Counties Manukau.

**Figure 161. Orthopaedic bed days per 1000 by age for CM and NZ, 1999.**



Forty two percent of acute orthopaedic discharges and 81% of arranged/elective discharges had their surgery on the day of admission. This compares with 48% and 71% for acute and arranged/elective orthopaedic surgery respectively for all of New Zealand.

### Hip and knee replacements

Counties Manukau residents have a higher age-standardised rate of total hip joint replacement, and total knee joint replacement than their counterparts across Auckland (Table 76). However, Counties Manukau ranks 11<sup>th</sup> of the 14 localities across New Zealand – only the residents of the other Auckland areas have worse public provision. This inequity in elective orthopaedic provision across New Zealand has existed for years; and comes despite large Waiting Time Fund (WTF) contracts for both hips and knees in 1997/98 (otherwise it would have been even worse).

**Table 71. Total hip and total knee joint replacement procedures, public hospitals, 1999**

Residents of:	Procedures		Age-std rate/100,000 pop		ALOS	
	Hips	Knees	Hips	Knees	Hips	Knees
Northland	109	56	69 (56-83)	46 (35-57)	10.8	9.1
North Shore	113	36	44 (36-52)	27 (21-33)	9.3	11.9
West Auckland	71	37	48 (37-59)	34 (25-44)	8.4	9.3
Central Auckland	173	44	52 (44-60)	29 (23-35)	10.2	10.2
<b>Counties Manukau</b>	<b>204</b>	<b>55</b>	<b>64 (55-73)</b>	<b>42 (35-50)</b>	<b>7.2</b>	<b>8.1</b>
Waikato	251	69	79 (69-89)	44 (37-51)	10.8	10.3
Rest of NZ	2,511	105	109 (105-113)	62 (59-65)	8.5	8.6
<b>Total</b>	<b>3,432</b>	<b>86</b>	<b>89 (87-92)</b>	<b>52 (50-54)</b>	<b>8.8</b>	<b>8.9</b>

Age-standardised to total New Zealand population. Rank is for hips and knees combined. THJR ICD-9-CMA procedure code 8151 or 8153 (ie new + revision, excluding partial), knee ICD-9-CMA procedure code 8154 or 8155.

Around three-quarters of these operations in Counties Manukau were funded through the WTF. The new sustainable threshold work and HFA emphasis on national consistency, equity and needs analysis provide further means for demonstrating this

inequity. Counties Manukau residents would need an additional 55 hip and 37 knee operations to come up to the current New Zealand average (and current WTF levels would need to be maintained). To get to the average of the rest of New Zealand (ie New Zealand excluding Auckland) an additional 92 hip and 59 knee operations would be needed for Counties Manukau if this was an appropriate goal. CPAC thresholds should help determine what appropriate targets there should be.

The average length of stay for hip replacement for Counties Manukau residents in 1999 was 7.2 days, below the New Zealand average of 8.5 days despite the relatively complex/high threshold cases being operated upon. Knee replacement was slightly lower, an ALOS of 8.1, compared to a New Zealand average of 8.6. The majority of these procedures for Counties Manukau residents are carried out at South Auckland Health.

Maori and Pacific people have lower rates of operation for both hip and knee joint replacement (data not shown), presumably related to their lower prevalence of osteoarthritis and osteoporosis.<sup>5</sup> Maori and Pacific hip fracture rates are among the lowest recorded internationally.<sup>6</sup>

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<sup>5</sup> Reid IR, Mackie M, Ibbertson HV. Bone mineral density in Polynesian and white New Zealand women. *BMJ* 1986; 292: 1547-8

<sup>6</sup> Norton R, Butler M, Currie R et al. Hip fracture incidence among older people in Auckland: a population-based study. *NZ Med J* 1995; 108: 426-8

## Plastic surgery

In 1999 Counties Manukau residents had 1,430 plastic surgery<sup>7</sup> discharges, a rate of 400 discharges per 100,000 population. This compares to a rate of 316/100000 for the rest of New Zealand. 95% of Counties Manukau residents were treated by South Auckland Health. The rate of discharges in Counties Manukau is higher for all ages compared to national figures (Figure 162). This is perhaps not surprising given that South Auckland Health provides a regional plastics service for all Auckland and Northland.

**Figure 162. Age specific rates of plastic surgical discharges by age for Counties Manukau residents and New Zealand, 1999.**

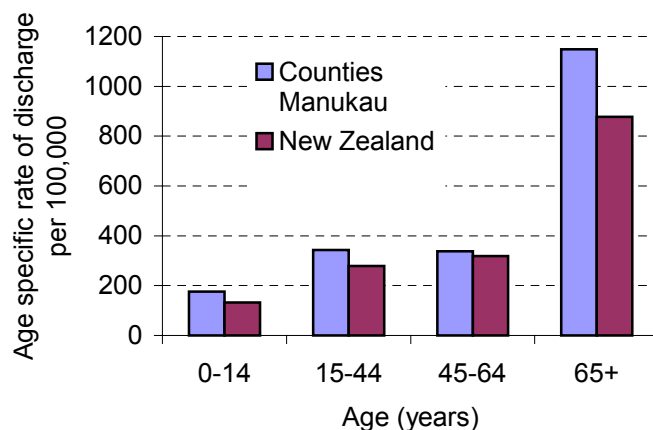
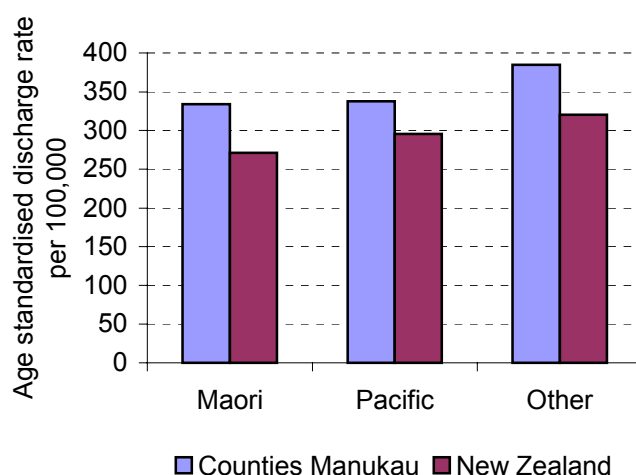


Figure 163 shows the rate of discharge by ethnicity for Counties Manukau residents in 1999, compared with the rates for New Zealand. Rates for all ethnic groups in Counties Manukau are higher than national rates.

**Figure 163. Age standardised rate of plastic surgical discharges by ethnicity for Counties Manukau residents and New Zealand, 1999.**



The total rate of plastic surgery has been greater for Counties Manukau residents compared to the rest of New Zealand (Figure 164) over the past five years. This seems

<sup>7</sup> Plastic surgery defined by DRG listing available from author. 19 DRGs included. It includes burns and hand surgery as well as the standard plastics procedures such as skin grafts, cleft lip and palate repair, etc

to be mainly due to a greater acute load – elective surgery rates are similar. Counties Manukau residents accounted for approximately 11.5% of all plastic surgical discharges nationally in 1999.

**Figure 164. Age standardised rate of total and elective plastic surgical discharges for Counties Manukau and New Zealand, 1995 - 1999**

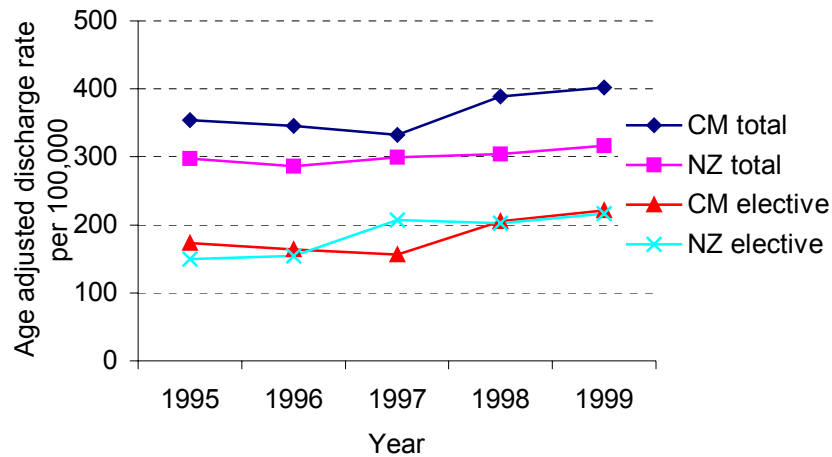
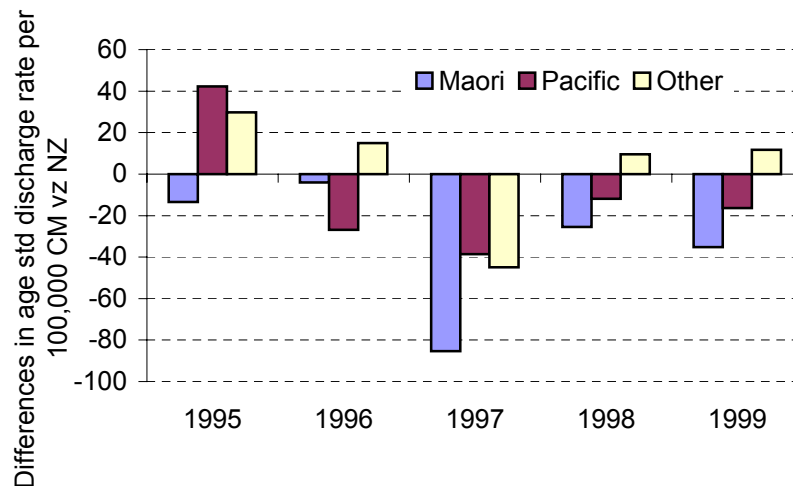


Figure 165 shows the differences in the rate of elective plastic surgery discharges in Counties Manukau compared to the rest of New Zealand. The rate of elective discharges has been lower in Counties Manukau compared to the rest of New Zealand for Maori and Pacific people for the past four years. Overall in 1999 Counties Manukau residents had the same elective surgery utilisation as the rest of New Zealand.

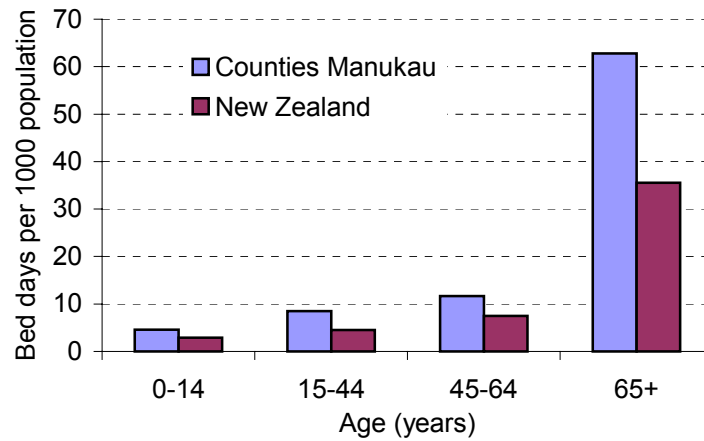
**Figure 165. Differences in elective plastic surgery discharge rates for Counties Manukau and New Zealand by ethnicity, 1995 – 1999.**



In 1999 Counties Manukau residents had 585 (40%) acute and 861 (60%) arranged or elective hospitalisations. This compares with 13.5% acute and 86.5% arranged/elective discharges for the rest of New Zealand. Plastic surgery discharges accounted for 4,977 bed days (2,880 acute, 2,097 arranged/elective) with an average length of stay (ALOS) of 4.9 for acute and 2.4 days for arranged/elective discharges in 1999. For the rest of New Zealand the ALOS were longer for acute (7.0 days) and slighter shorter for arranged/elective (2.0 days) discharges. Plastic surgery bed days per 1000 population

by age are shown in Figure 166. Counties Manukau has more bed days per 1000 population for all age groups compared with the rest of New Zealand.

**Figure 166. Plastic surgery bed days per 1000 by age for Counties Manukau and New Zealand, 1999.**

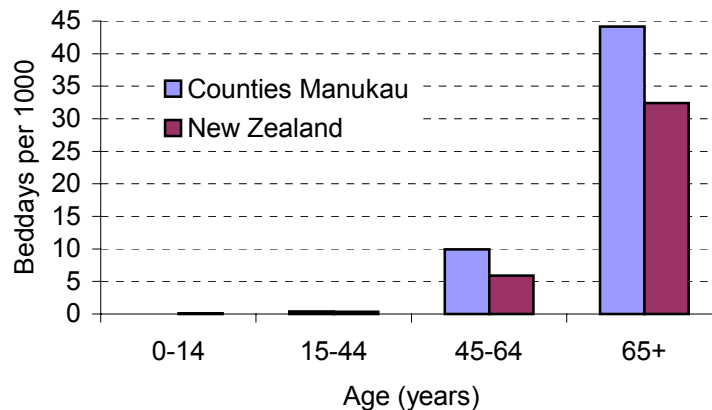


For Counties Manukau residents' plastic surgery 52% of acute and 86% of arranged/elective discharges had their surgery on the day of admission. This compares with 58% and 85% for acute and arranged/elective surgery respectively for all of New Zealand.

## Vascular surgery

In 1999 Counties Manukau residents had 223 vascular surgery<sup>8</sup> discharges, a rate of 70 discharges per 100,000 population. This compares to a rate of 90/100000 for the rest of New Zealand. Of Counties Manukau residents 81% were treated by South Auckland Health. Figure 167 shows the age-specific rate of vascular discharges for Counties Manukau and New Zealand in 1999.

**Figure 167. Vascular surgery age-specific discharge rates for Counties Manukau residents and New Zealand 1999**



Vascular surgery discharge rates for Maori are significantly higher than their Pacific counterparts both within Counties Manukau and nationally (Figure 168). With the high prevalence of diabetes in the Maori and Pacific population, and the arterial complications that ensue, one might have expected both to be high.

**Figure 168. Vascular discharges by ethnicity for Counties Manukau residents and New Zealand, 1999.**

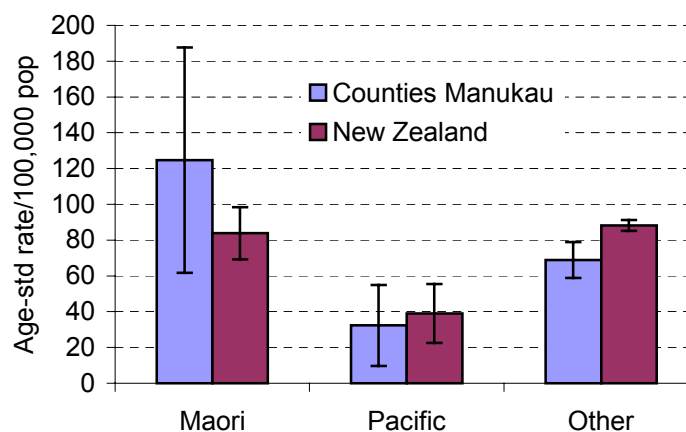


Figure 169 shows the rate of total and elective vascular discharges in Counties Manukau and the rest of New Zealand from 1995 to 1999. 1999 saw a decline in both total and

<sup>8</sup> Vascular surgery here is defined by DRG. Given the overlaps with general surgery, orthopaedics, plastics and even general medicine quite a tight set of mainly arterial grafting is used – only 8 DRGs are included. Trauma tends to sit under orthopaedics in this analysis, and non-procedural cases under general medicine.

elective vascular discharges for Counties Manukau residents. Counties Manukau accounts for approximately 6.6% (1999) of all vascular discharges nationally.

**Figure 169. Total and elective vascular discharges for Counties Manukau and New Zealand, 1995 – 1999**

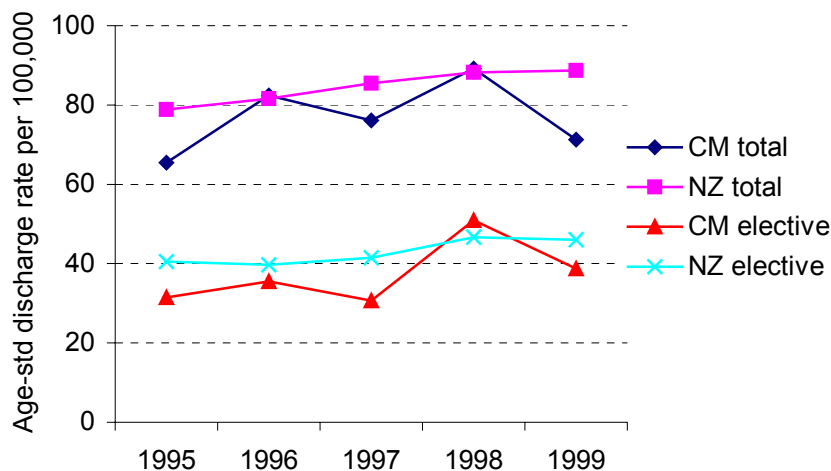
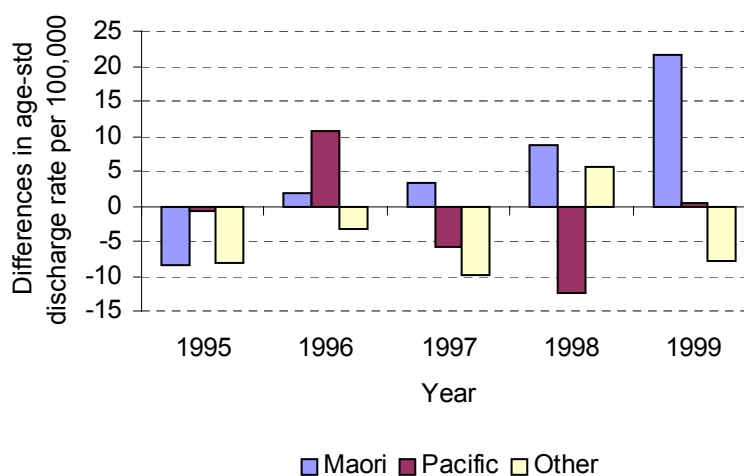


Figure 170 shows the differences in the rate of elective vascular discharges in Counties Manukau compared to the rest of New Zealand. The rate of elective vascular discharges for Maori has increased each year and is currently at a rate exceeding that for the rest of New Zealand. The converse is true for Pacific people, except in 1999 when the rate was about the same. An additional 30 operations per year would be needed to get Counties Manukau up to the current level for the rest of New Zealand. However, the appropriateness of this rate for the Counties Manukau population has not been examined.

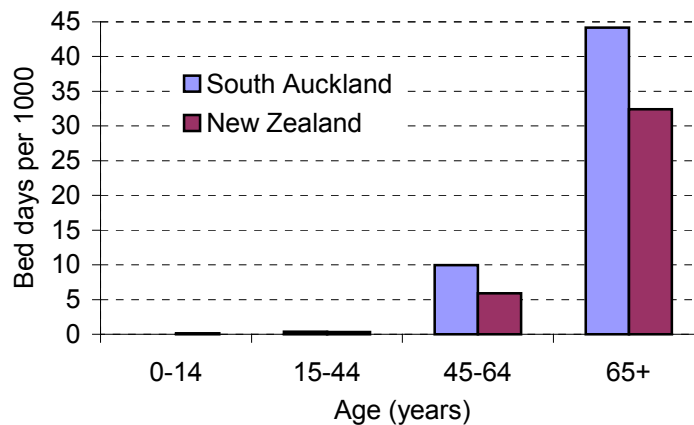
**Figure 170. Differences in elective vascular discharge rates for Counties Manukau and New Zealand by ethnicity, 1995 – 1999.**



In 1999 Counties Manukau residents had 75 (34%) acute and 146 (66%) arranged or elective hospitalisations. This compares with 22% acute and 78% arranged/elective discharges for the rest of New Zealand.

Vascular surgery discharges accounted for 2,330 bed days (1,465 acute, 865 arranged/elective) with an average length of stay (ALOS) of 19.5 days for acute and 5.9 days for arranged/elective discharges in 1999. For the rest of New Zealand the ALOS for acute (11.1 days) and arranged/elective (4.5 days) discharges were considerably shorter. Quite a different casemix seems to be experienced by the Counties Manukau population. Vascular surgery bed days per 1000 population by age are shown in Figure 171. Counties Manukau has more bed days per 1000 population for those 45+ years compared to national figures.

**Figure 171. Vascular surgery bed days per 1000 by age for Counties Manukau and New Zealand, 1999.**



Thirty seven percent of acute vascular discharges and 60% of arranged/elective discharges had their surgery on the day of admission. This compares with 52% and 57% for acute and arranged/elective vascular surgery respectively for the rest of New Zealand.

## Urology

In 1999 Counties Manukau residents had 1,976 urology<sup>9</sup> discharges, a rate of 540 discharges per 100,000 population. This is similar to the rate of 550/100,000 for New Zealand. Of Counties Manukau residents 34% were treated by South Auckland Health. The majority of urological surgery for Counties Manukau residents up to 2000 has been provided by Auckland Healthcare. A process of changing provision of secondary urology is under way. Figure 172 shows the rate of urology discharges for Counties Manukau and the rest of New Zealand in 1999.

**Figure 172. Age specific rates of urology discharges by age for Counties Manukau residents and New Zealand, 1999.**

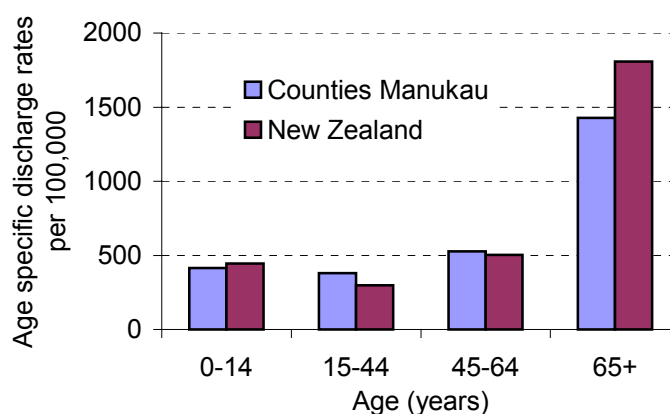
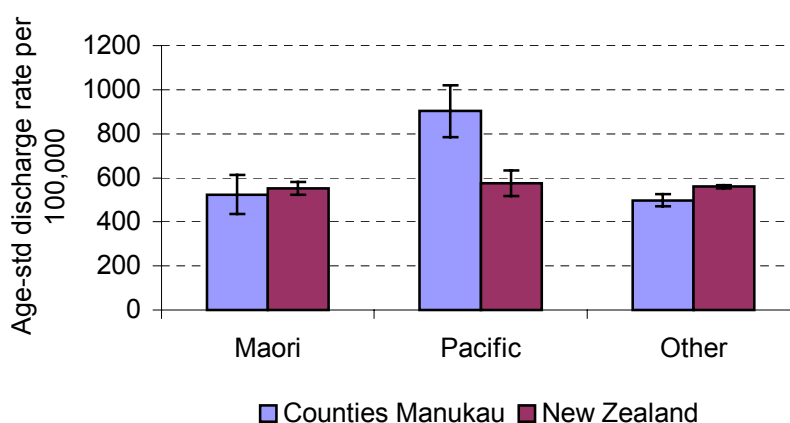


Figure 173 shows the rate of discharge by ethnicity for Counties Manukau residents in 1999. Maori and “other” have rates that are lower than the national figures, while the rates for Pacific people are higher. The Counties Manukau Pacific urology discharge rate is significantly higher than for Maori or “other”. It is unclear why this should be.

**Figure 173. Age standardised rate of urology discharges by ethnicity for Counties Manukau residents and New Zealand, 1999.**



The total rate of urology discharges has remained approximately the same for the past four years (Figure 174). While the rate of elective urology in Counties Manukau has increased over the past two years it is still well below that for the rest of the country. Counties Manukau accounted for approximately 9.3% of all urology discharges nationally in 1999.

<sup>9</sup> Defined by DRG. Includes 46 DRGs, covering urology and genitourinary surgery.

**Figure 174. Age standardised rate of total and elective urology discharges for Counties Manukau and New Zealand, 1995 - 1999**

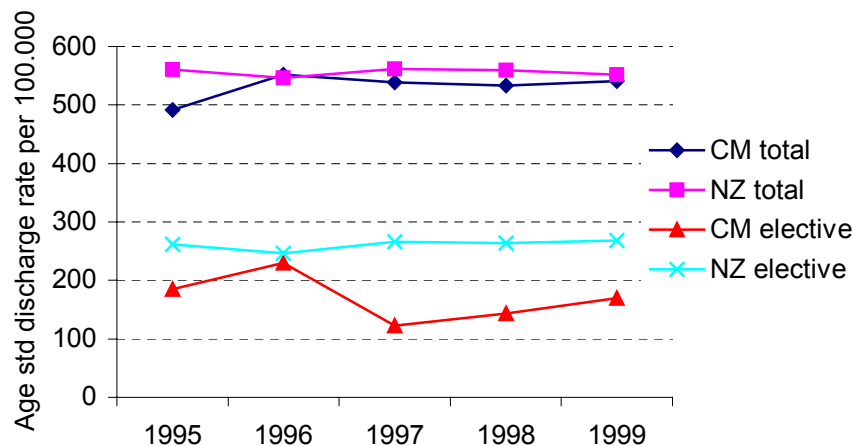
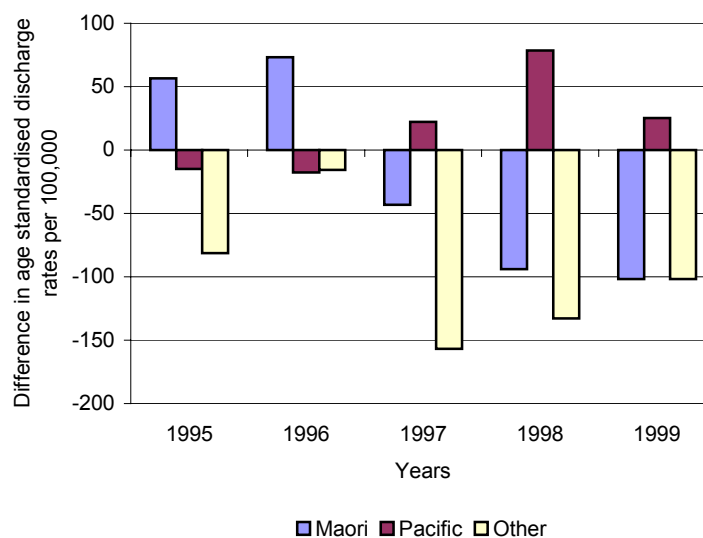


Figure 175 shows the differences in the rate of elective urology discharges in Counties Manukau compared to the rest of New Zealand. The rate of elective discharges has been lower in Counties Manukau compared to the rest of New Zealand for Maori and Others. However, the rate for Pacific people for the past three years has been higher than that for Pacific people in the rest of New Zealand. An additional 360 operations per year would be needed to get Counties Manukau up to the current level for the rest of New Zealand, the size of which implies there is some unmet need for urology services for the Counties Manukau population.

**Figure 175. Differences in elective urology discharge rates for Counties Manukau and New Zealand by ethnicity, 1995 -1999.**



In 1999 Counties Manukau residents had 1266 (64%) acute and 704 (36%) arranged or elective hospitalisations. This compares with 42% acute and 58% arranged/elective discharges for the rest of New Zealand.

Urology discharges accounted for 1,970 bed days (1,266 acute, 704 arranged/elective) with an average length of stay (ALOS) of 2.2 and 2.4 days for acute and

arranged/elective discharges respectively in 1999. In comparison to the rest of New Zealand the ALOS for acute (3.3 days) discharges are a day longer while arranged/elective (2.0 days) discharges are shorter.

### Prostatectomy

Prostatectomies can be carried out for a variety of indications ranging from benign prostate enlargement to prostate cancer. The place of prostatectomy in cancer treatment is controversial – see discussion in Chapter 7 Medicine page 149. Counties Manukau has the second lowest public hospital operation rate for prostatectomy in New Zealand. Provision across all Auckland is low - Counties Manukau people do not seem to be unduly penalised by having the service provided out of Auckland Hospital – it is the overall resource level across Auckland rather than geographic constraints operating (Table 72).

There are a number of concerns about the effectiveness and side effects of this operation. If it were appropriate an extra 97 operations per year would be needed to get Counties Manukau up to the current New Zealand average.

**Table 72. Prostatectomy operations, public hospitals, 1999**

Residents of:	Prostatectomy procedures		
	Number	Age-std rate*	ALOS
Northland	114	72	3.9
North Shore	107	41	3.8
West Auckland	101	70	3.4
Central Auckland	156	48	4.5
<b>Counties Manukau</b>	<b>117</b>	<b>39</b>	<b>3.3</b>
Waikato	212	67	2.8
Rest of NZ	1750	75	3.6
<b>Total</b>	<b>2,557</b>	<b>67</b>	<b>3.6</b>

\*Rate is per 100,000 total population, age-standardised to total New Zealand population ICD-9-CMA procedure codes 602-606 – ie all types, TURP, radical etc

Most prostatectomy operations occur in the over 65 age group (Table 73). Prostatectomy age-standardised rates in Counties Manukau vary by ethnicity, with Pacific males having high rates, and Asian males having low rates (albeit with low numbers for both in the main age range for prostatectomy). The divergence between Maori and Pacific men is intriguing, mirrors the results for all urology noted above, and warrants further investigation as to its significance and possible cause.

**Table 73. Prostatectomy operations, Counties Manukau residents compared with Northern HFA region, 1993-1997**

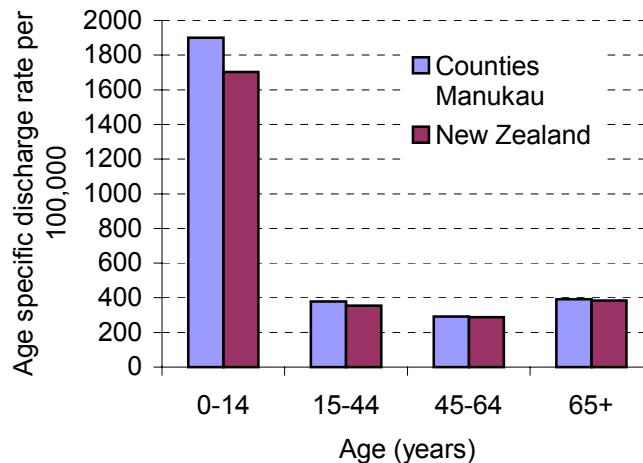
	Maori	PI	Asian	European/ Other	Total	% M to Euro	% PI to Euro
<b>Counties Manukau age-standardised rate</b>							
Total	111	196	57	126	125	88	155
0-14	0	0	0	0	0	-	-
15-24	0	0	0	0	0	-	-
25-44	0	0	0	1	0	-	-
45-64	14	37	9	47	40	31	79
65+	300	478	147	386	381	78	124
<b>% of Northern Region</b>							
Total	91	122	144	88	89		

Discharges per 100,000 population per year with a prostatectomy, ICD -9-CM: 602 - 606 in any procedure code, standardised to NZ male population at 1996 census. Age group rates are age-specific rather than standardised.

## Otolaryngology (ENT)

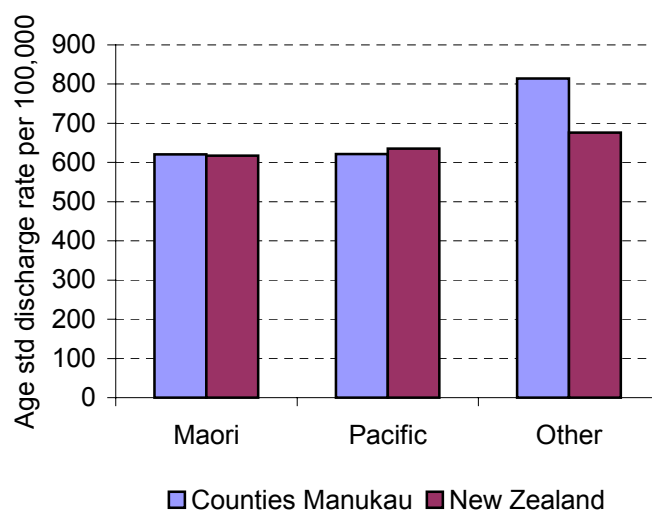
In 1999 Counties Manukau residents had 2,964 otolaryngology<sup>10</sup> (ENT or ear, nose, throat) discharges, a rate of 700 discharges per 100,000 population. This is slightly higher than the New Zealand rate of 656/100,000. Of Counties Manukau residents 83% were treated by South Auckland Health. Most discharges are for children, and the Counties Manukau excess is mainly in the 0-14 group (Figure 176).

**Figure 176. Age specific rates of otolaryngology discharges by age for Counties Manukau residents and New Zealand, 1999.**



Counties Manukau Maori and Pacific rates are similar to the rest of New Zealand, while Others have a significantly higher discharge rate (Figure 177). This presumably relates to the relative socio-economic status of Counties Manukau children.

**Figure 177. Age standardised rate of otolaryngology discharges by ethnicity for Counties Manukau residents and New Zealand, 1999.**



The elective and total rate of otolaryngology discharges has increased rapidly over the past two years for Counties Manukau residents, and both exceed now those for New

<sup>10</sup> Defined by DRG – list available from author. 19 DRGs included.

Zealand as a whole (Figure 178). Counties Manukau accounts for approximately 11.8% (1999) of all otolaryngology discharges nationally.

**Figure 178. Age standardised rate of total and elective otolaryngology discharges for Counties Manukau and New Zealand, 1995 - 1999**

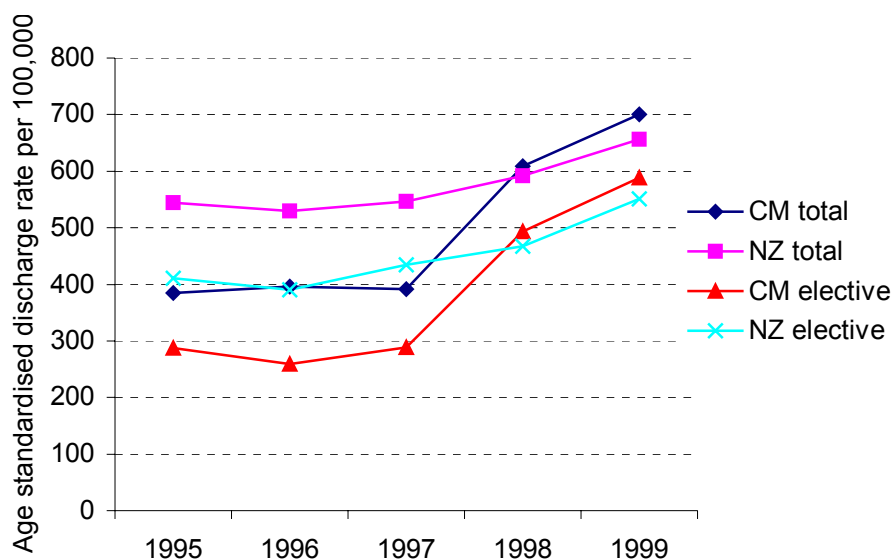
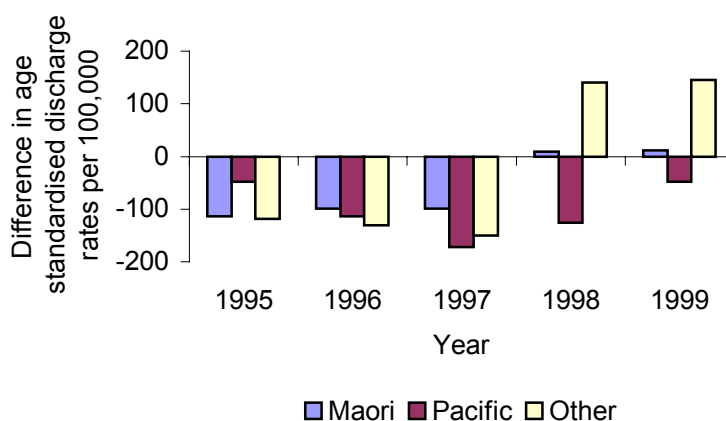


Figure 179 shows the differences in the rate of elective otolaryngology discharges in Counties Manukau compared to the rest of New Zealand. While the overall rate of elective otolaryngology discharges have increased in Counties Manukau, the rates for Pacific people are lower than those for Pacific people elsewhere in New Zealand. The Maori rate is only slightly higher than the Maori in the rest of New Zealand. In 1999 Counties Manukau performed 150 more elective operations per year than the current level for the rest of New Zealand. However, given the socio-economic level of Counties Manukau children it may be that a shortfall based on need for service still exists.

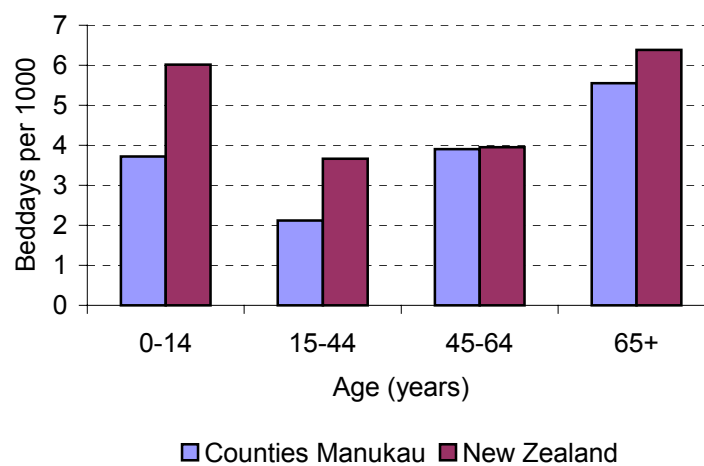
**Figure 179. Differences in elective otolaryngology discharge rates for Counties Manukau and New Zealand by ethnicity, 1995 - 1999.**



In 1999 Counties Manukau residents had 319 (11%) acute and 2,645 (89%) arranged or elective hospitalisations. This is similar to the 10% acute and 90% arranged/elective discharges for New Zealand.

Otolaryngology discharges accounted for 1,241 bed days (585 acute, 656 arranged/elective) with an average length of stay (ALOS) of 1.8 and 0.2 days for acute and arranged/elective discharges respectively in 1999. Note that a day procedure is counted as zero days, so an ALOS of 0.2 implies that most procedures are carried out on a day basis. This compares to 2.2 days and 0.6 days for acute and arranged/elective discharges respectively for the rest of New Zealand. Otolaryngology bed days per 1000 population by age are shown in Figure 180. Counties Manukau has fewer bed days per 1000 population for all age groups compared to national figures.

**Figure 180. Otolaryngology bed days per 1000 by age for Counties Manukau and New Zealand, 1999.**



Fifty seven percent of acute otolaryngology discharges and 98% of arranged/elective discharges had their surgery on the day of admission. This compares with 60% and 94% for acute and arranged/elective for otolaryngology services respectively for all of New Zealand.

### Grommet insertion, and tonsillectomy or adenoidectomy

Children in Counties Manukau have a public hospital operative rate for tympanostomy tube (grommet) insertion and tonsillectomy/adenoidectomy similar to the rest of New Zealand. This may or may not be appropriate as Counties Manukau has the largest number of deprived children in the country. No particular target rate of operation has been set nationally, and there are concerns about the effectiveness of both these operations in terms of the outcomes sought<sup>11 12 13</sup>.

Maori and Pacific children have lower rates of operation for grommet insertion or tonsillectomy/adenoidectomy than their European counterparts, despite having similar or higher rates of ENT infections necessitating hospital admission (data not shown). The difference is statistically significant for tonsillectomy/adenoidectomy for both ethnic groups, and for Pacific children for grommets.

<sup>11</sup> Paradise JL, Feldman HM, Campbell TF et al. Effect of early or delayed insertion of tympanostomy tubes for persistent otitis media on developmental outcomes at the age of three years. *N Engl J Med* 2001; 344: 1179-87.

<sup>12</sup> Burton MJ, Towler B, Glasziou P. Tonsillectomy versus non-surgical treatment for chronic / recurrent acute tonsillitis (Cochrane Review). In: *The Cochrane Library*, 2, 2001. Oxford: Update Software

<sup>13</sup> Larizgoitia I. Tonsillectomy: scientific evidence, clinical practice and uncertainties. Barcelona: Catalan Agency for Health Technology Assessment, 1999:16

**Table 74. Grommet and tonsillectomy or adenoidectomy operations, age 0-14, public hospitals, 1999**

Residents of:	Number of operations		Age-std rate/100,000		ALOS	
	Grommet	T&A	Grommet	T&A	Grommet	T&A
Northland	374	342	233	219	0.1	0.3
North Shore	428	318	197	142	0.2	0.3
West Auckland	548	351	254	171	0	0.4
Central Auckland	754	636	228	186	0.2	0.3
<b>Counties Manukau</b>	<b>1,035</b>	<b>902</b>	<b>226</b>	<b>205</b>	<b>0.1</b>	<b>0.1</b>
Waikato	1,133	726	323	207	0.2	0.8
Rest of NZ	4,331	4,296	206	202	0.2	0.7
Total NZ	8,603	7,571	224	197	0.2	0.6

\*Age-standardised to total New Zealand population. T&A = tonsillectomy and/or adenoidectomy  
Grommet ICD-9-CMA procedure code 2001, tonsillectomy and/or adenoidectomy 282, 283, 286

## Summary (all surgery)

The majority of surgery for Counties Manukau residents takes place at South Auckland Health. In general the surgical hospitalisation rates for Counties Manukau and New Zealand are very similar. Counties Manukau residents tend to have higher rates of acute admissions to public hospitals, but less access to elective surgery. Gynaecology (covered in Chapter 9 *Women's Health*) shows the largest discrepancy - the rate for New Zealand is considerably higher than that for Counties Manukau (Table 75).

**Table 75. Discharge rates per 100,000 by specialty, Counties Manukau compared with New Zealand 1999**

Surgical Specialty	Counties Manukau	New Zealand
Orthopaedics	1,350	1,347
General surgery	1,128	1,215
Gynaecology	1,040	1,250
Otolaryngology	700	656
Urology	540	550
Plastic Surgery	400	316
Ophthalmology	370	375
Cardiothoracic	360	321
Vascular	70	90

Source: NMDS. Age-standardised discharge rates per 100,000 population.

Average length of stay and day of admission figures suggest that South Auckland Health is a relatively efficient provider of surgical services.

