

# **The WHO MONICA Study, Australia, 1984–93**

**A summary of the Newcastle and Perth MONICA Projects**

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CARDIOVASCULAR DISEASE SERIES  
Number 13

# **The WHO MONICA Study, Australia, 1984–93**

**A summary of the Newcastle and Perth  
MONICA Projects**

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**October 2000**

Australian Institute of Health and Welfare  
Canberra

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## Preface

The MONICA Project was a multinational study to MONItor trends and determinants of Cardiovascular disease. Organised by the World Health Organization, the project aimed to measure trends in cardiovascular disease mortality and coronary heart disease morbidity and to assess the extent to which these trends were related to changes in known risk factors, daily living habits, health care or major socioeconomic features. Forty well-defined populations from 25 countries were involved in the study from the mid-1980s to the mid-1990s. Most of the MONICA centres were established in Europe but Australia participated in the project with two centres, one in Newcastle, New South Wales, and the other in Perth, Western Australia.

This report provides a detailed statistical analysis of the information collected by both the MONICA centres in Australia. Information relating to non-fatal acute myocardial infarctions and coronary deaths was collected for people aged between 25 and 64 years in Perth and for people aged between 25 and 69 years in Newcastle. Rates of coronary events and trends in the rates of coronary events from 1985 to 1993 are presented for each centre and for men and women separately. Information relating to medical treatment was also recorded; this information included drug treatments before, during and after the acute episode and information on utilisation of coronary care units.

Population levels of the major risk factors of cardiovascular disease were also measured. During the study period, three surveys of risk factors were conducted by each centre in the same population. Data from the surveys of risk factors are presented in this document as age-standardised levels of risk factors during each survey period and as trends in levels of risk factors from 1983 to 1994.

The work of the MONICA centres during the 1980s and 1990s in Australia highlighted the need for a national monitoring system for cardiovascular disease. In January 1996, following extensive consultation with representatives of government and non-government agencies, public health researchers and epidemiologists, the National Centre for Monitoring Cardiovascular Disease commenced operation at the Institute (Bennett et al. 1995). Funded by the Federal Health Department, it has the responsibility for monitoring nationally the impact of cardiovascular disease, its treatment and risk factors.

It was appropriate therefore for the Institute to publish these data from the Australian MONICA centres, following the advice of the Advisory Committee to its National Centre for Monitoring Cardiovascular Disease. This report makes the data more generally available and will support the Institute's publications elsewhere of information from the WHO MONICA study. Staff of the National Centre assisted the authors in the preparation of the report, which forms part of the Institute's Cardiovascular Disease Series. As well as contributing to international research efforts, these data represent an important national resource.

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Director  
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The National Centre is funded by the Commonwealth Department of Health and Aged Care.

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## List of abbreviations

ACE	angiotensin-converting enzyme
AMI	acute myocardial infarction
BMI	body mass index
CABG	coronary artery bypass grafting
CHD	coronary heart disease
CI	confidence interval
EKG	electrocardiograph
HDL	high-density lipoprotein
ICD-9	International Classification of Diseases, Ninth Revision
Lp(a)	Lipoprotein(a)
MONICA	World Health Organization's Project to MONItor the trends and determinants of CArdiovascular disease
PTCA	percutaneous transluminal coronary angioplasty
WHO	World Health Organization

## Summary

This report provides results from Australia's two MONICA centres in Newcastle and Perth.

Death rates from coronary heart disease began to fall in Australia in the late 1960s. The Australian MONICA data is consistent with data from the Australian Bureau of Statistics showing that the fall continued during the late 1980s and early 1990s. The reduction occurred for both men and women and for all age groups up to 69 years. During the same period there was also a reduction in non-fatal definite acute myocardial infarctions.

Case fatality declined significantly in Newcastle but not in Perth. New drug therapies, such as thrombolytic therapy and angiotensin-converting enzyme inhibitors, were introduced during the period. These therapies were quickly accepted and their use increased rapidly. The use of aspirin also increased rapidly and by 1993 aspirin was used by over 80% of patients who were treated in hospital.

The risk factor profile of the population showed some improvements between 1983 and 1994. In both centres there was a substantial reduction in the prevalence of smoking. There was a reduction in systolic blood pressure and serum cholesterol and an increase in high-density lipoprotein cholesterol. Unfortunately, there was a large increase in the prevalence of obesity and an increase in the prevalence of diabetes.

The use of aspirin in the general population increased substantially from 1983 to 1994. In 1994, approximately 28% of men aged 65–69 years in Newcastle were taking aspirin on a daily basis. There was also an increase in the use of angiotensin-converting enzyme inhibitors and calcium channel blockers in the general population and a reduction in the use of diuretics and other antihypertensive medications.





# 1 Introduction

## 1.1 The WHO MONICA Project

The MONICA Project was a World Health Organization (WHO) study MONItoring trends and determinants of CARdiovascular disease (Tunstall-Pedoe et al. 1999). Forty well-defined populations from 25 countries were involved in the study from the mid-1980s to the mid-1990s. The analysis of the MONICA data will be conducted by the MONICA Data Centre in Helsinki, Finland. The objectives of the MONICA Project were:

- to assess the association between changes in coronary heart disease (CHD) event rates, defined as fatal CHD events and non-fatal acute myocardial infarction (AMI) events, and changes in the main cardiovascular risk factors including smoking, blood pressure, cholesterol and obesity; and
- to assess the association between changes in case fatality and changes in medical care.

Australia participated in the Project with two centres, one in Newcastle, New South Wales, and the other in Perth, Western Australia (Dobson et al. 1993).

## 1.2 Aim of this report

This document describes the methods used to register subjects in the two MONICA centres in Australia, presents rates of coronary events in persons aged 35–64 years, and estimates of the annual change in rates of events during the study period. In addition, the level of medical treatment used before, during and after hospitalisation and estimates of the annual change in the use of medical treatment are given.

Similarly, the methods used to sample subjects for the surveys of risk factors are described and the methods of measuring levels of risk factors explained. Levels of risk factors and estimates of the annual change in levels of risk factors are presented.

Data are given as age-standardised rates, percentages or means for each centre and separately for men and women. Data by sex and age group are shown in the appendixes.

# 2 Methodology

## 2.1 Data collection

### 2.1.1 Perth, Western Australia

The population defined for the MONICA Study in Perth was persons aged 25–64 years who were normally residents of the Perth Statistical Division, effectively the Perth Metropolitan Area. There were 195,417 men and 199,636 women aged 35–64 years in the study population in 1991. Coronary events were registered for 10 full years from 1984 to 1993 using the 'cold pursuit' method. That is, non-fatal events were ascertained by surveillance of routinely collected statistics compiled from diagnoses recorded at discharge from hospital. These cases were identified from records bearing the Ninth Revision of the International Classification of Diseases (ICD-9) codes for AMI or sub-acute ischaemic heart disease (ICD codes 410 and 411 respectively). Additionally, three times during the year, computerised hospital separation records for all hospitals in Western Australia were searched systematically for mention of these codes in records of persons normally resident in the Perth Statistical Division and this resulted in a small number of additional cases being registered. Information about coronary deaths in Perth was obtained either by notification from the Coroner's pathologist or by regular searches of death registrations. Supplementary information was obtained from hospitals and coroner's records and from medical practitioners involved in managing the cases. In Perth, information on medical treatment was collected continuously during the 10 years of registering coronary events.

Three surveys of risk factors were conducted in Perth during the study period, the first in 1983, the second in 1989 and the third in 1994.

### 2.1.2 Newcastle, New South Wales

The population for the MONICA Project in Newcastle was residents aged 25–69 years of the five local government areas of Newcastle, Lake Macquarie, Port Stephens, Maitland and Cessnock. There were 76,831 men and 76,502 women aged 35 to 64 years in the study population in 1991.

Registration of coronary events began in Newcastle in August 1984 and continued until March 1994. The 'hot pursuit' method was used to identify patients; that is, study nurses monitored all hospitals in the area and registered every patient likely to meet the study criteria. Patients were interviewed while they were in hospital and information was extracted from their medical records at that time (rather than retrospectively). Fatal events were ascertained by continuous surveillance of all death certificates and details of fatal cases were obtained from death certificates, post-mortem records and from doctors, relatives or other informants. Information on the use of medical treatment during and after hospitalisation was collected in Newcastle from August 1984 to December 1985 and from July 1988 to March 1994 but information on the use of medical treatment before hospitalisation was collected continuously throughout the period.

Three surveys of risk factors were conducted during the study period, the first in 1983, the second in 1988 and 1989 and the third in 1994.

## 2.2 Age standardisation

All means and percentages are calculated by direct age standardisation. Age standardisation allows comparisons between populations with different age distributions. The age distribution of the reference population used for age standardisation needs to bear some relationship to the age distribution of the phenomena under study lest important artifacts be introduced by the calculations. For this reason two different populations are used for age standardisation in this document. All data for the surveys of risk factors and all rates of coronary events are age-standardised to the 1991 Australian population as these phenomena relate to the whole population (Table 2.1).

**Table 2.1: Australian population by sex and age group, 1991**

Age group (years)	Population	
	Men	Women
35–39	664,228	664,159
40–44	655,138	639,133
45–49	526,498	502,647
50–54	433,762	413,172
55–59	367,302	358,648
60–64	366,779	370,089

Data on treatments for people who suffer an AMI or coronary death, and case fatality of AMI are age-standardised to the distribution of events in the MONICA populations in Australia (Table 2.2).

**Table 2.2: Weightings for MONICA populations by sex and age group**

Age group (years)	Weightings	
	Men	Women
35–39	311	46
40–44	673	96
45–49	1,097	188
50–54	1,512	331
55–59	2,328	622
60–64	3,260	1,168

This is appropriate as both treatment and outcome of AMI are related to the cases of the disease and not to the general population.

Separate weights are used for men and women in both situations, therefore a comparison of age-standardised rates between men and women is not strictly valid.

There is no weighting for any response differences (e.g. by age, sex, country of birth or area). This is different from the way in which data on risk factors are published by the National Heart Foundation.

## 2.3 Trends in rates of events

The annual percentage change in rates of events is calculated from the estimated value of  $\alpha$  from a Poisson regression model. The outcome variable is the number of events in each age group and the predictor variables are year and age group.

Based on  $\alpha$ , an average annual rate of change has been derived as follows:

$$\text{percentage change} = [e^{\alpha} - 1] \times 100\%$$

## 2.4 Trends in levels of medical treatment and trends in levels of risk factors

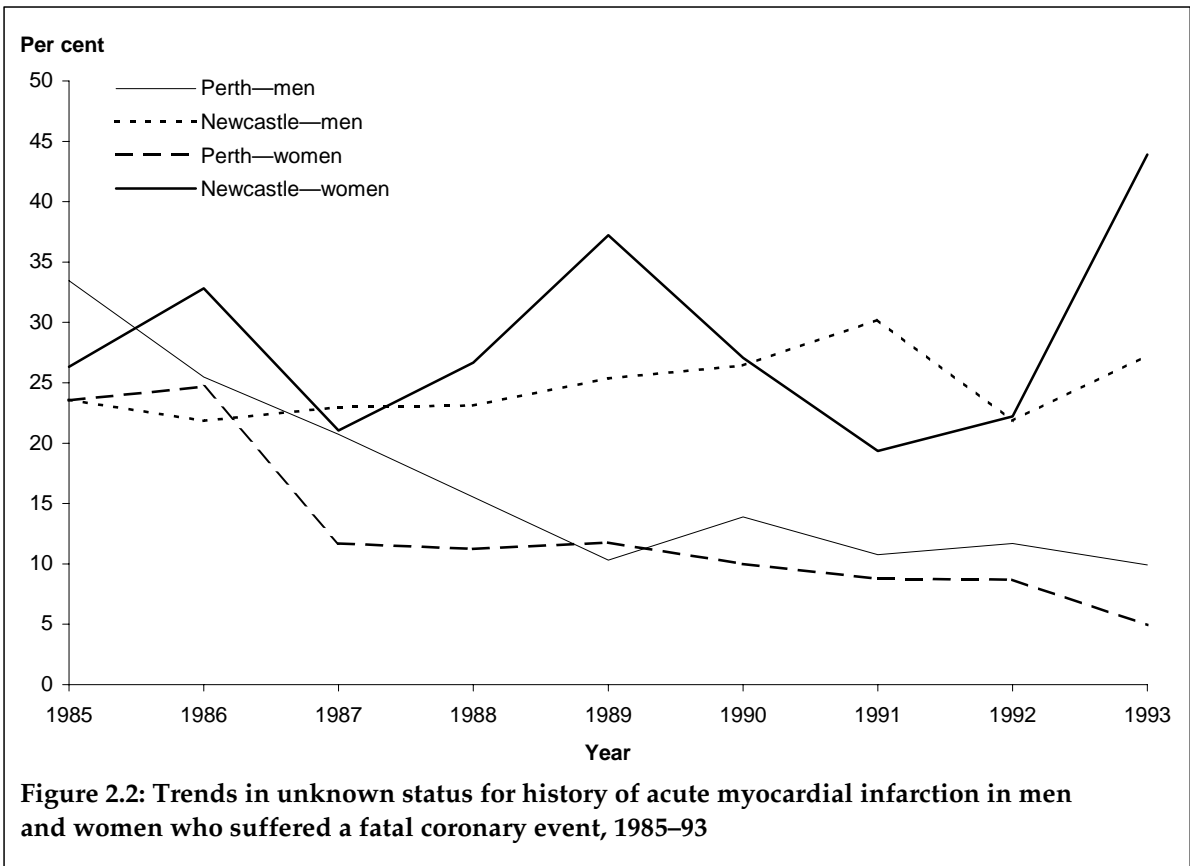
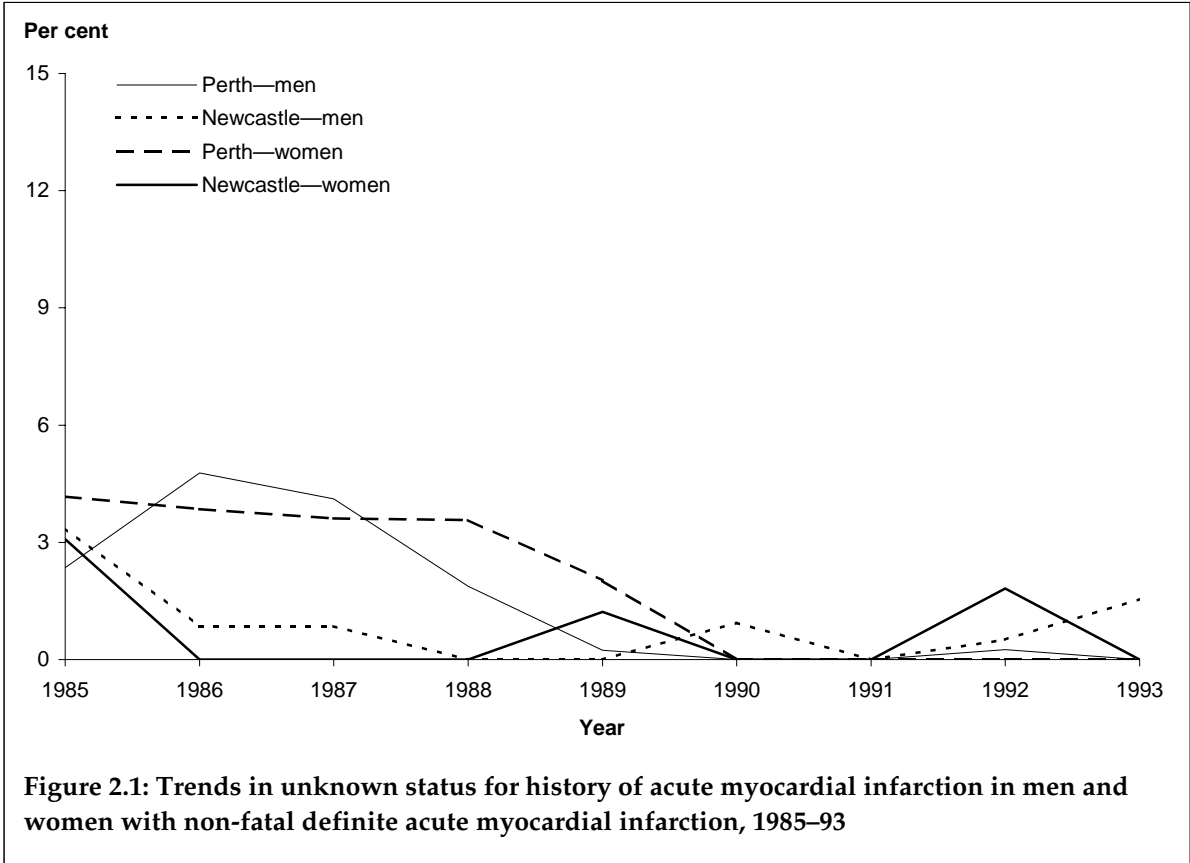
Trends in the use of medication in those who suffer coronary events and trends in levels of risk factors and the use of medications in the general population are estimated using linear regression. Individual data are fitted to the model, the outcome variable is the risk factor or treatment of interest, and the predictor variables are year and age group. The coefficient of year from this model is the estimate of annual change. Data on events and the use of medical treatment are presented in three-year periods but estimates of trend are based on data for individual years.

## 2.5 Definition of previous AMI

Patients were classified as having a history of AMI if:

- there was any evidence in the medical records indicating that the subject had suffered a definite, possible or suspected AMI; or
- the patient or their relative responded yes when asked if the patient had previously suffered a heart attack.

If medical records were not seen and there was no response to the question on whether the patient had suffered a heart attack, history of AMI was classified as unknown. Status on previous AMI was unknown for less than 4% of non-fatal events but for substantially more fatal events (Figures 2.1 and 2.2). Previous MONICA records were not used to determine status on previous AMI because there would have been no such records at the start of the study and 10 years of records at the end. Therefore, using the MONICA records would have introduced bias.



# 3 Fatal and non-fatal events

## 3.1 Fatal events

### 3.1.1 Definition

Fatal events were classified as:

- *definite AMI* if they satisfied the diagnostic criteria of 'non-fatal definite AMI' before death occurred or if autopsy data confirmed AMI;
- *possible AMI* if there were suggestive terminal symptoms, a history of coronary artery disease or autopsy evidence of chronic occlusive coronary disease without another cause of death established; and
- *unclassifiable* if no autopsy was performed, CHD was mentioned on the death certificate as the cause of death and no alternative cause of death could be established.

For this document all of these deaths are included as fatal coronary events.

### 3.1.2 Trends in Newcastle and Perth

In the Newcastle and Perth MONICA populations there was a substantial reduction in the rate of mortality from CHD from 1985 to 1993 for both men and women (Table 3.1). Newcastle had higher rates of mortality from CHD than Perth during this period but it also had the greater absolute and relative declines.

Men in Newcastle with a history of AMI accounted for 30% of fatal events throughout the study period. In contrast, men in Perth with a history of AMI accounted for 46% of fatal events in 1985–87 and this fell to 40% in 1991–93. The prevalence of previous AMI was also greater in fatal events among women from Perth compared with fatal events among women from Newcastle but it declined in women from both centres. These data suggest that there was a difference in the ascertainment of a history of AMI between centres. Events with unknown status for history of AMI were excluded from calculations of the proportion of fatal and non-fatal events among patients with previous AMI.

**Table 3.1: Average annual rates of mortality for coronary heart disease and percentage of deaths in patients with previous AMI for persons aged 35–64 years, 1985–93**

Centre	Rate (per cent previous AMI) <sup>(a)</sup>			Estimated annual percentage change (95% CI)
	1985–87	1988–90	1991–93	
<b>Men</b>				
Perth	158.2 (46)	148.4 (42)	123.2 (40)	–3.9 (–5.5, –2.4)
Newcastle	222.0 (29)	177.3 (31)	142.0 (30)	–7.7 (–9.6, –5.7)
<b>Women</b>				
Perth	44.7 (41)	40.8 (33)	34.3 (31)	–3.9 (–6.8, –0.9)
Newcastle	81.9 (27)	54.2 (22)	46.8 (20)	–8.6 (–11.9, –5.2)

AMI = acute myocardial infarction.

(a) Age-standardised rate per 100,000 population.

## 3.2 Non-fatal events

### 3.2.1 Definition

Non-fatal events were classified as ‘definite AMI’ if they satisfied the following criteria:

- definite sequential changes in a series of electrocardiographs (ECGs); or
- symptoms of AMI that were typical, atypical or inadequately described, together with more minor ECG changes and abnormal enzymes; or
- typical symptoms, abnormal enzymes and ischaemic or non-codable ECG or ECG not available.

As the MONICA definition of non-fatal definite AMI is more strict than the definition used clinically to define AMI, some non-fatal events that would be classified clinically as AMI were not included in the MONICA data in Perth. A non-fatal event was one in which the patient was alive 28 days after the onset of AMI. Therefore a second or recurrent event could only begin at least 28 days after any preceding event.

### 3.2.2 Trends in Newcastle and Perth

There was a reduction in the rate of non-fatal definite AMI in Newcastle and Perth from 1985 to 1993 (Table 3.2). The rate of decrease was less than that observed for fatal cases of CHD. The reductions in non-fatal definite AMI were similar in both centres. The prevalence of previous AMI was lower in cases of non-fatal definite AMI than in fatal events and it was constant throughout the period, except among women from Perth where it declined.

**Table 3.2: Average annual rates of non-fatal definite AMI and percentage of non-fatal definite AMIs in patients with previous AMI for persons aged 35–64 years, 1985–93**

Centre	Rate (per cent previous AMI) <sup>(a)</sup>			Estimated annual percentage change (95% CI)
	1985–87	1988–90	1991–93	
<b>Men</b>				
Perth	256.2 (22)	244.9 (24)	217.9 (20)	-3.0 (-4.1, -1.7)
Newcastle	310.7 (27)	264.9 (22)	247.9 (25)	-3.9 (-5.6, -2.2)
<b>Women</b>				
Perth	46.6 (29)	55.2 (20)	43.5 (17)	-1.0 (-3.7, 1.8)
Newcastle	96.4 (19)	89.8 (22)	71.1 (21)	-3.0 (-5.9, 0.0)

AMI= acute myocardial infarction.

(a) Age-standardised rate per 100,000 population.

### 3.2.3 Differences in case ascertainment

As mentioned in section 2.1, non-fatal events were identified by using a 'cold pursuit' method in Perth and a 'hot pursuit' method in Newcastle. The latter, by identifying more possible cases, could be expected to identify more mild cases. However, for events classified according to the MONICA criteria as non-fatal definite AMI, the higher rates in Newcastle are believed to reflect true differences because:

- they are consistent with the known higher mortality and hospital admission rates for AMI in Newcastle,
- case fatality was higher in Newcastle than in Perth which is against a systematic bias towards ascertaining more milder non-fatal cases in Newcastle (both centres undertook the same care to collect data on fatal cases).

Both Australian centres produced high quality data as determined by the quality control procedures implemented by the MONICA Data Centre in Helsinki and documented in the major publications from the project and in detailed reports available from the WHO MONICA Project web-site <http://www.ktl.fi/monica/>

### 3.2.4 Rates and trends of mild AMI in Newcastle

To ensure that information on all non-fatal definite AMIs in each population was collected, the MONICA protocol required centres to register all suspected coronary events. Some centres, including Newcastle, collected information on all patients who reported prolonged chest pain (that is, pain lasting longer than 20 minutes) but did not meet the criteria for 'non-fatal definite AMI'. These cases were called 'non-fatal possible AMIs'. A recent MONICA paper specified criteria which allowed AMIs to be subdivided into 'non-fatal probable AMIs', denoted as 'mild AMI' subsequently in this report, and 'prolonged chest pain' (Salomaa et al. 1997). Events were categorised as 'non-fatal probable AMI' if any of the following sets of criteria were met:

- typical symptoms, probable ECG and enzyme changes categorised as equivocal, non-specific, normal, incomplete or insufficient data;
- typical symptoms, abnormal enzymes and ECG categorised as 'other', that is, mainly normal; or
- typical symptoms, equivocal enzymes and ECG categorised as ischaemic, uncodable, insufficient data, or other.



There was no statistically significant change in either sex in the rate of 'mild AMI' in Newcastle, that is, in cases meeting the criteria for 'non-fatal probable AMI', from 1985–93 (Table 3.3). The Perth MONICA Centre did not collect information on patients with possible AMI.

**Table 3.3: Average annual rates of non-fatal probable AMI in Newcastle and percentage of non-fatal probable AMIs in patients with previous AMI for men and women aged 35–64 years, 1985–93**

Sex	Rate (per cent previous AMI) <sup>(a)</sup>			Estimated annual percentage change (95% CI)
	1985–87	1988–90	1991–93	
Men	190.7 (30)	229.7 (30)	192.7 (25)	1.0 (–1.0, 3.1)
Women	104.3 (19)	92.0 (22)	85.7 (19)	–2.0 (–4.8, 0.9)

AMI = acute myocardial infarction.

(a) Age-standardised rate per 100,000 population.

# 4 Case fatality and medical care

## 4.1 Case fatality

### 4.1.1 Definition

The definition of total case fatality used in this document is the number of coronary deaths in the population (that is, deaths that occurred in and out of hospital) divided by the sum of all coronary deaths and non-fatal definite AMIs. Estimates of case fatality for any subgroup only include those events that belong to the subgroup. Estimates of case fatality are presented separately for all events, for those who survived to be admitted to hospital, for those admitted to coronary care units and for those who were admitted to hospital and survived at least 24 hours from the onset of symptoms.

### 4.1.2 Trends in case fatality in Newcastle and Perth

Total case fatality declined from 1985 to 1993 (Table 4.1). The reduction was statistically significant in Newcastle but not in Perth. The level of case fatality for patients who reached hospital alive fell for men and women in Newcastle but not for men and women in Perth. For those admitted to a coronary care unit there was a statistically significant reduction in case fatality for men in Perth and a similar size reduction, which was not statistically significant, for women in Perth and men in Newcastle.

**Table 4.1: Case fatality and estimated average annual percentage change for persons aged 35–64 years, 1985–93<sup>(a)</sup>**

Phase of the acute episode	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent<sup>(b)</sup></b>					
<b>Men</b>					
Pre-hospital	Perth	27.8	26.4	25.3	–0.4 (–0.9, 0.0)
	Newcastle	30.2	29.4	28.5	–0.3 (–1.0, 0.3)
Admitted to hospital	Perth	14.7	15.6	14.7	0.1 (–0.3, 0.5)
	Newcastle	17.2	16.3	12.1	–0.9 (–1.5, –0.3)
Admitted to coronary care unit	Perth	9.8	9.3	6.7	–0.4 (–0.8, –0.1)
	Newcastle	9.6	9.4	7.9	–0.4 (–1.0, 0.2)
Admitted to hospital and survived >24 hours	Perth	9.0	10.7	8.8	0.0 (–0.4, 0.3)
	Newcastle	10.5	10.7	7.3	–0.5 (–1.0, 0.0)
<b>Total case fatality</b>	<b>Perth</b>	<b>38.2</b>	<b>37.6</b>	<b>36.1</b>	<b>–0.3 (–0.8, 0.2)</b>
	<b>Newcastle</b>	<b>42.0</b>	<b>40.7</b>	<b>37.0</b>	<b>–0.9 (–1.6, –0.3)</b>
<b>Women</b>					
Pre-hospital	Perth	29.4	28.1	22.1	–1.3 (–2.2, –0.4)
	Newcastle	28.5	22.5	25.1	–0.6 (–1.6, 0.4)
Admitted to hospital	Perth	27.9	20.2	27.5	0.0 (–1.0, 1.1)
	Newcastle	24.5	20.0	20.2	–1.0 (–2.1, 0.1)
Admitted to coronary care unit	Perth	19.8	12.6	16.5	–0.4 (–1.4, 0.6)
	Newcastle	16.2	16.9	16.5	0.0 (–1.3, 1.4)
Admitted to hospital and survived >24 hours	Perth	19.2	14.2	20.5	0.4 (–0.6, 1.4)
	Newcastle	14.9	13.5	12.6	–0.5 (–1.5, 0.5)
<b>Total case fatality</b>	<b>Perth</b>	<b>49.1</b>	<b>42.8</b>	<b>43.5</b>	<b>–1.0 (–2.0, 0.1)</b>
	<b>Newcastle</b>	<b>46.0</b>	<b>37.9</b>	<b>40.0</b>	<b>–1.2 (–2.4, –0.1)</b>

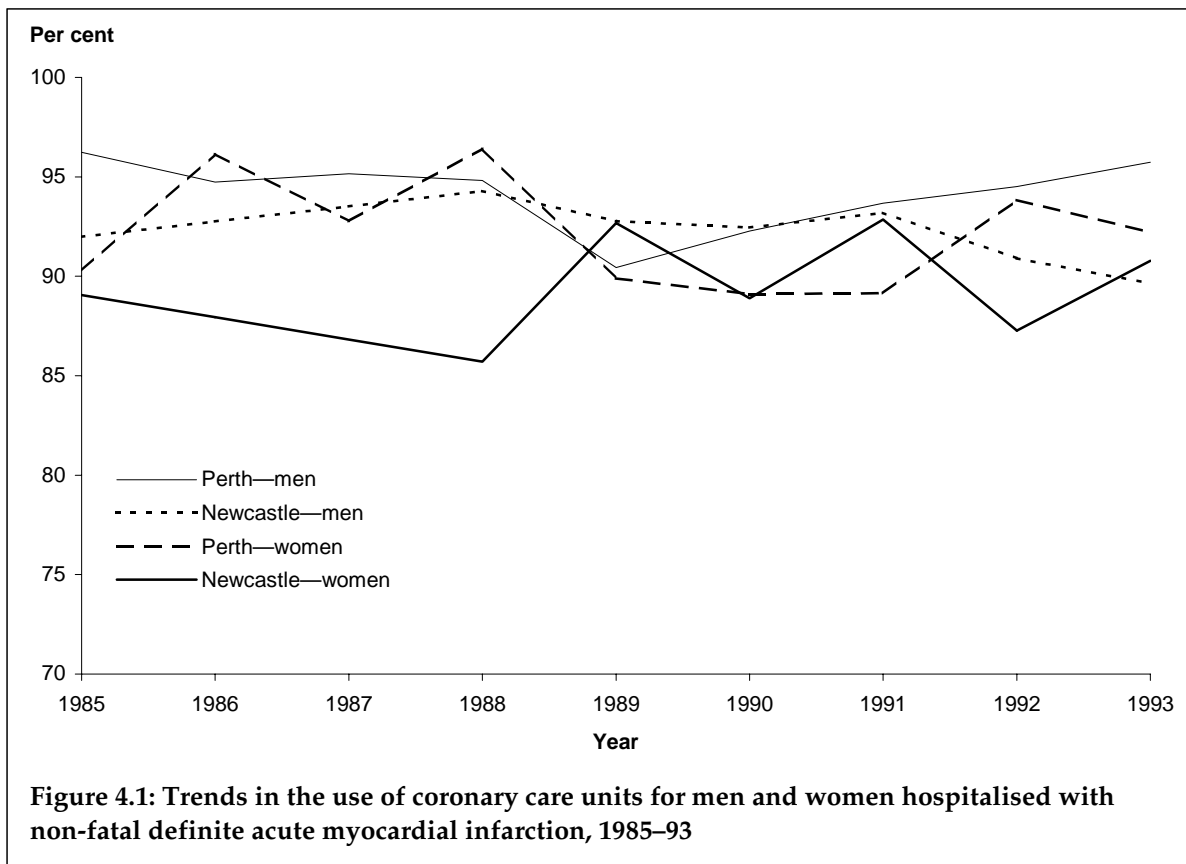
(a) Different rows of this table relate to different denominators.

(b) Age-standardised to the 1991 Australian population.

## 4.2 Medical care

### 4.2.1 Coronary care units

In Australia coronary care units have become the principal place for treating patients with definite AMI. Figure 4.1 shows that approximately 90–95% of men and women who were hospitalised with non-fatal definite AMI were treated in coronary care units. The proportion was relatively constant from 1985 to 1993 in both Newcastle and Perth.



## 4.2.2 Trends in treatments used before the onset of symptoms of AMI

The use of all medications and the prevalence of having undergone a procedure before the onset of symptoms of the current acute episode were much higher among subjects with a previous AMI. The use of aspirin, angiotensin-converting enzyme (ACE) inhibitors and calcium channel blockers before the onset of symptoms among people who had a coronary event increased substantially between 1985 and 1993 (Tables 4.2, 4.3, 4.4 and 4.5). The increase was far greater for those who had suffered a previous AMI. The use of beta blockers before the onset of symptoms decreased—especially in Newcastle—while that of diuretics fell in both centres, but especially in Perth. There were also large increases in Newcastle in the prevalence of those who had undergone angiography and, in both centres, in the prevalence of those who had undergone coronary artery bypass grafting (CABG) or percutaneous transluminal coronary angioplasty (PTCA). The increase in the use of these procedures was predominantly in those with a history of AMI.

**Table 4.2: Treatment before the event (per cent) and estimated annual percentage change in level of treatment for men aged 35–64 years with no previous AMI, 1985–93**

Treatment	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
Aspirin	Perth	4.0	7.8	9.8	1.0 (0.6, 1.3)
	Newcastle	9.7	8.7	10.8	0.3 (–0.2, 0.8)
ACE inhibitor	Perth	0.7	3.4	8.1	1.2 (0.9, 1.5)
	Newcastle	2.3	7.3	10.4	1.3 (0.8, 1.7)
Inotropic	Perth	2.6	2.1	1.6	–0.1 (–0.3, 0.1)
	Newcastle	6.6	5.3	4.8	–0.3 (–0.7, 0.1)
Beta blocker	Perth	19.0	16.0	13.4	–0.8 (–1.3, –0.3)
	Newcastle	20.9	20.0	14.9	–1.0 (–1.7, –0.3)
Calcium channel blocker	Perth	7.2	9.6	11.3	0.7 (0.3, 1.0)
	Newcastle	10.3	14.3	16.9	1.3 (0.6, 1.9)
Other antiarrhythmic	Perth	1.1	0.7	0.4	–0.1 (–0.2, 0.0)
	Newcastle	1.0	0.8	1.0	–0.1 (–0.2, 0.1)
Anticoagulant	Perth	0.4	1.2	1.4	0.2 (0.0, 0.3)
	Newcastle	1.8	2.0	1.7	0.0 (–0.3, 0.2)
Diuretic	Perth	13.9	10.8	9.1	–0.7 (–1.1, –0.3)
	Newcastle	17.0	13.2	11.0	–1.0 (–1.6, –0.4)
Nitrate	Perth	9.8	8.7	8.9	–0.1 (–0.5, 0.3)
	Newcastle	14.4	14.6	10.2	–0.6 (–1.2, 0.0)
Coronary angiography	Perth	6.8	6.6	7.6	0.2 (–0.3, 0.7)
	Newcastle	8.3	11.9	14.7	1.1 (0.6, 1.7)
PTCA	Perth	0.7	1.5	1.1	0.1 (–0.1, 0.2)
	Newcastle	0.0	0.0	1.4	0.6 (0.3, 0.9)
CABG	Perth	2.2	2.5	2.5	0.1 (–0.1, 0.3)
	Newcastle	4.2	5.9	6.3	0.4 (0.0, 0.7)

ACE = angiotensin-converting enzyme; AMI = acute myocardial infarction; CABG = coronary artery bypass grafting; PTCA = percutaneous transluminal coronary angioplasty.

**Table 4.3: Treatment before the event (per cent) and estimated annual percentage change in level of treatment for men aged 35–64 years with previous AMI, 1985–93**

Treatment	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
Aspirin	Perth	16.9	36.5	51.9	5.7 (4.7, 6.8)
	Newcastle	19.9	33.7	47.0	4.2 (2.8, 5.6)
ACE inhibitor	Perth	3.8	6.2	15.8	2.1 (1.4, 2.8)
	Newcastle	5.6	17.5	36.6	4.9 (3.8, 6.1)
Inotropic	Perth	12.4	10.7	6.9	-0.9 (-1.6, -0.2)
	Newcastle	25.1	26.2	17.6	-1.7 (-3.0, -0.5)
Beta blocker	Perth	35.9	37.1	40.0	0.8 (-0.4, 1.9)
	Newcastle	40.4	26.7	29.5	-1.7 (-3.1, -0.3)
Calcium channel blocker	Perth	28.2	34.6	32.5	1.0 (-0.1, 2.1)
	Newcastle	34.4	35.1	40.8	1.3 (-0.1, 2.8)
Other antiarrhythmic	Perth	6.5	2.9	3.4	-0.4 (-0.8, 0.1)
	Newcastle	6.3	5.2	2.7	-0.6 (-1.3, 0.0)
Anticoagulant	Perth	8.8	6.9	10.4	0.6 (0.0, 1.3)
	Newcastle	2.8	3.6	9.4	1.0 (0.3, 1.7)
Diuretic	Perth	32.4	21.3	22.6	-1.7 (-2.7, -0.6)
	Newcastle	30.9	28.7	24.8	-1.1 (-2.4, 0.3)
Nitrate	Perth	49.4	50.5	52.2	0.2 (-0.9, 1.4)
	Newcastle	56.6	51.8	54.3	-0.5 (-2.0, 0.9)
Coronary angiography	Perth	49.3	62.4	64.3	1.5 (-0.1, 3.1)
	Newcastle	39.0	62.4	67.4	4.4 (3.1, 5.8)
PTCA	Perth	7.9	13.3	14.5	0.9 (0.1, 1.7)
	Newcastle	0.0	1.4	7.4	1.7 (0.4, 3.0)
CABG	Perth	15.8	21.5	21.0	1.0 (0.2, 1.8)
	Newcastle	14.1	31.2	27.6	2.2 (1.0, 3.4)

ACE = angiotensin-converting enzyme; AMI = acute myocardial infarction; CABG = coronary artery bypass grafting; PTCA = percutaneous transluminal coronary angioplasty.

**Table 4.4: Treatment before the event (per cent) and estimated annual percentage change in level of treatment for women aged 35–64 years with no previous AMI, 1985–93**

Treatment	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
Aspirin	Perth	2.9	5.3	8.2	0.9 (0.2, 1.6)
	Newcastle	7.8	12.9	12.1	0.7 (–0.3, 1.7)
ACE inhibitor	Perth	2.6	4.1	15.5	2.3 (1.4, 3.1)
	Newcastle	4.4	10.8	12.4	1.4 (0.5, 2.3)
Inotropic	Perth	2.7	2.4	2.4	0.1 (–0.4, 0.5)
	Newcastle	18.3	9.1	6.1	–1.8 (–2.8, –0.8)
Beta blocker	Perth	18.1	18.2	18.0	–0.1 (–1.3, 1.0)
	Newcastle	36.0	23.4	24.8	–2.1 (–3.5, –0.7)
Calcium channel blocker	Perth	11.1	15.3	19.4	1.3 (0.2, 2.4)
	Newcastle	18.1	17.1	24.8	1.0 (–0.2, 2.2)
Other antiarrhythmic	Perth	1.0	0.5	0.0	–0.2 (–0.4, 0.0)
	Newcastle	4.3	1.0	1.3	–0.4 (–0.8, 0.1)
Anticoagulant	Perth	2.6	0.3	2.2	0.0 (–0.4, 0.3)
	Newcastle	2.7	0.0	2.5	0.0 (–0.4, 0.4)
Diuretic	Perth	28.5	23.5	21.9	–1.1 (–2.3, 0.2)
	Newcastle	37.5	25.5	35.2	–0.2 (–1.7, 1.2)
Nitrate	Perth	14.8	17.4	14.9	0.1 (–1.0, 1.2)
	Newcastle	24.6	14.7	13.4	–1.6 (–2.8, –0.4)
Coronary angiography	Perth	8.5	8.7	7.3	–0.3 (–1.4, 0.7)
	Newcastle	7.9	10.9	16.5	1.6 (0.7, 2.5)
PTCA	Perth	1.0	0.7	1.9	0.2 (–0.2, 0.5)
	Newcastle	0.0	0.7	0.7	0.0 (–0.6, 0.5)
CABG	Perth	1.3	2.0	2.0	0.2 (–0.2, 0.5)
	Newcastle	1.7	5.1	5.4	0.6 (0.0, 1.1)

ACE = angiotensin-converting enzyme; AMI = acute myocardial infarction; CABG = coronary artery bypass grafting; PTCA = percutaneous transluminal coronary angioplasty.

**Table 4.5: Treatment before the event (per cent) and estimated annual percentage change in level of treatment for women aged 35–64 years with previous AMI, 1985–93**

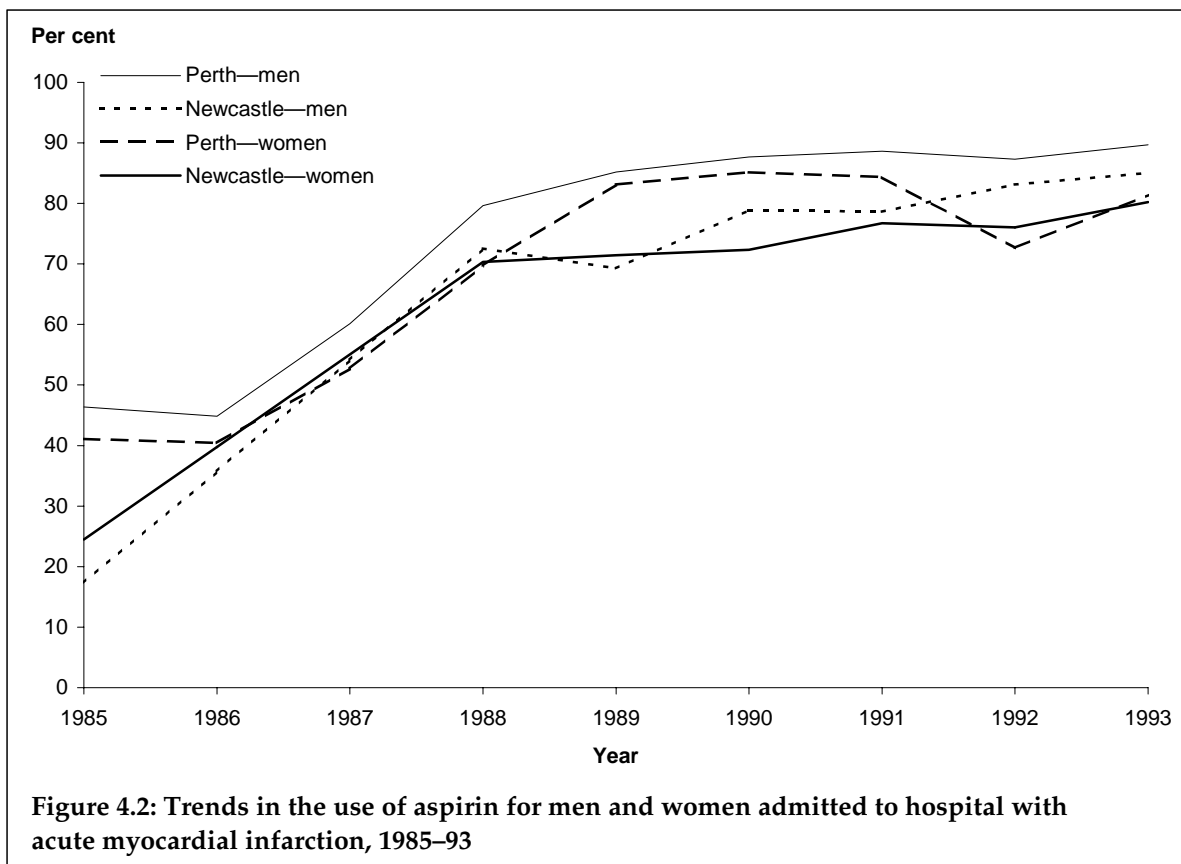
Treatment	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
Aspirin	Perth	24.1	41.9	44.1	4.5 (2.3, 6.8)
	Newcastle	23.6	25.4	48.0	3.8 (0.9, 6.8)
ACE inhibitor	Perth	1.0	8.7	28.6	4.9 (3.3, 6.5)
	Newcastle	11.6	28.8	26.4	2.7 (–0.1, 5.5)
Inotropic	Perth	15.5	18.9	17.9	0.1 (–1.8, 1.9)
	Newcastle	54.7	26.7	31.1	–4.1 (–7.1, –1.2)
Beta blocker	Perth	44.0	32.5	38.2	–1.0 (–3.3, 1.3)
	Newcastle	47.8	40.2	32.5	–3.2 (–6.3, –0.1)
Calcium channel blocker	Perth	44.2	43.2	42.0	0.0 (–2.4, 2.4)
	Newcastle	51.9	43.6	43.6	–0.7 (–3.7, 2.4)
Other antiarrhythmic	Perth	0.9	4.1	6.7	0.9 (–0.1, 1.8)
	Newcastle	6.5	4.4	13.5	0.8 (–1.0, 2.6)
Anticoagulant	Perth	4.0	5.2	17.1	2.0 (0.7, 3.3)
	Newcastle	2.3	8.7	2.1	–0.2 (–1.6, 1.2)
Diuretic	Perth	57.6	43.0	44.5	–2.6 (–5.0, –0.2)
	Newcastle	56.1	39.6	48.6	–1.4 (–4.5, 1.8)
Nitrate	Perth	49.2	58.6	61.0	2.0 (–0.4, 4.4)
	Newcastle	72.5	54.5	63.0	–2.1 (–4.9, 0.7)
Coronary angiography	Perth	63.1	48.7	50.4	–0.5 (–4.0, 3.0)
	Newcastle	38.8	45.5	57.9	4.4 (1.6, 7.3)
PTCA	Perth	8.5	5.1	9.6	0.3 (–1.0, 1.6)
	Newcastle	0.0	2.1	5.1	0.2 (–2.0, 2.4)
CABG	Perth	12.1	14.2	22.0	1.5 (0.0, 3.1)
	Newcastle	21.6	17.3	34.2	2.4 (0.1, 4.8)

ACE = angiotensin-converting enzyme; AMI = acute myocardial infarction; CABG = coronary artery bypass grafting; PTCA = percutaneous transluminal coronary angioplasty.



### 4.2.3 Trends in treatments used during AMI

From 1985 to 1993 there was a rapid increase in the use of aspirin, ACE inhibitors and thrombolytic therapy for men and women admitted to hospital with definite AMI in both Perth and Newcastle (Figures 4.2, 4.3, 4.4 and Tables 4.6 and 4.7). The use of beta blockers increased in both centres but while the use of calcium channel blockers increased in Newcastle there was a substantial reduction in their use in Perth (Figures 4.5 and 4.6). There was also an increase in the use of angiography, CABG and PTCA in both centres.



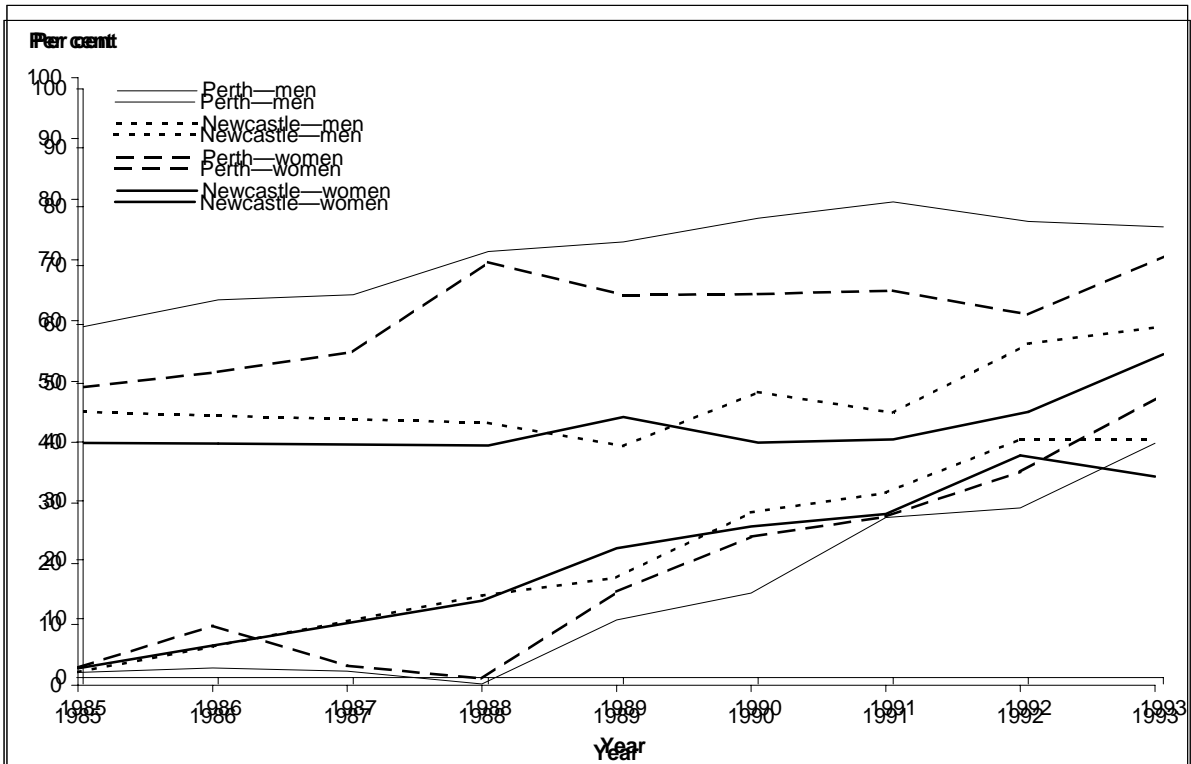


Figure 4.3: Trends in the use of ACE inhibitors for men and women admitted to hospital with acute myocardial infarction, 1985-93

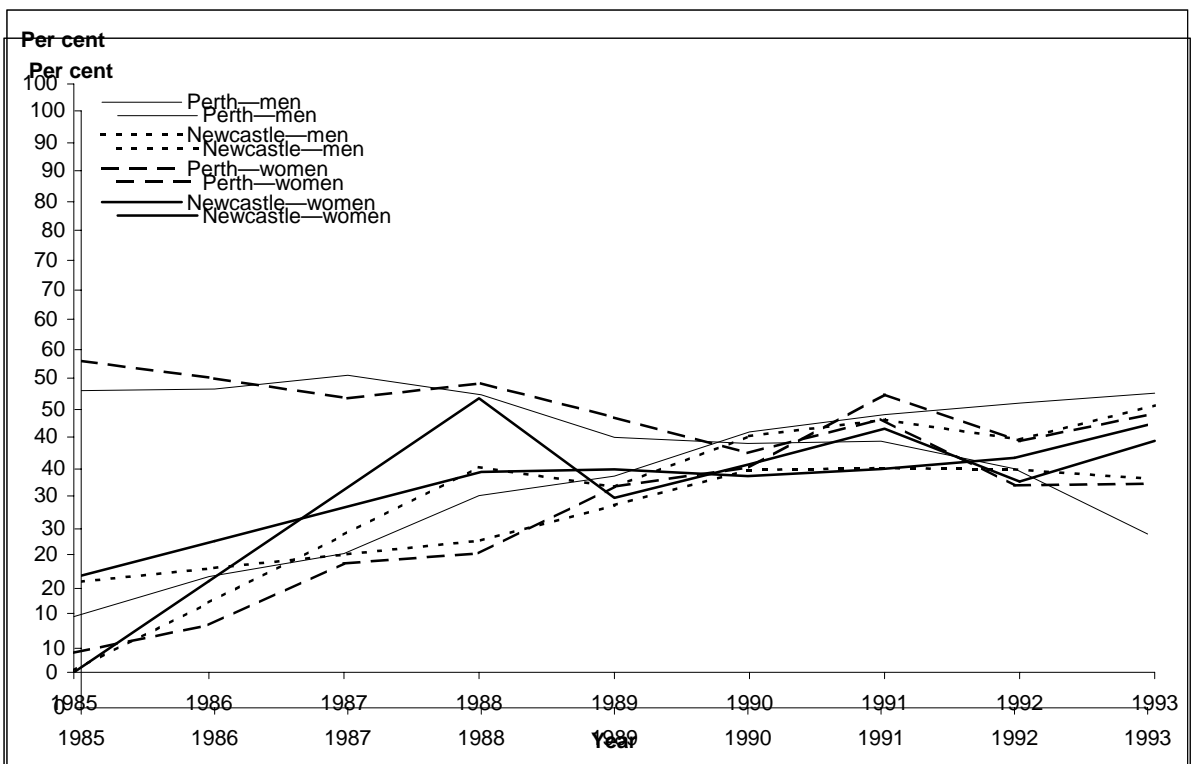


Figure 4.4: Trends in the use of thrombolytic therapy for men and women admitted to hospital with acute myocardial infarction, 1985-93

**Table 4.6: Treatment during the event (per cent) and estimated annual percentage change in level of treatment for men aged 35–64 years, 1985–93**

Treatment	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
Aspirin	Perth	46.7	52.7	84.4	88.7	6.1 (5.7, 6.6)
	Newcastle	17.4	NR	73.9	82.1	8.5 (7.7, 9.3)
ACE inhibitor	Perth	2.1	2.6	9.1	32.1	4.9 (4.5, 5.2)
	Newcastle	2.0	NR	21.3	36.9	5.1 (4.3, 5.9)
Thrombolytic therapy	Perth	9.8	18.3	35.0	45.9	5.1 (4.6, 5.6)
	Newcastle	0.4	NR	36.0	43.2	5.6 (4.8, 6.5)
Inotropic	Perth	20.1	20.2	19.5	15.1	-0.7 (-1.2, -0.3)
	Newcastle	25.0	NR	22.3	21.6	-0.5 (-1.3, 0.3)
Beta blocker	Perth	60.0	65.1	75.1	78.6	2.5 (2.0, 3.0)
	Newcastle	45.0	NR	44.0	53.8	1.8 (0.8, 2.8)
Calcium channel blocker	Perth	53.0	54.6	47.1	38.0	-2.8 (-3.4, -2.2)
	Newcastle	20.7	NR	34.9	39.3	2.6 (1.7, 3.5)
Other antiarrhythmic	Perth	43.4	40.9	30.5	31.2	-1.7 (-2.2, -1.1)
	Newcastle	28.4	NR	25.4	30.4	0.5 (-0.3, 1.4)
Anticoagulant	Perth	87.6	88.7	80.3	84.0	-0.6 (-1.0, -0.1)
	Newcastle	78.6	NR	84.2	85.5	1.0 (0.3, 1.7)
Diuretic	Perth	43.0	37.1	34.5	33.7	-0.9 (-1.5, -0.4)
	Newcastle	36.6	NR	28.7	31.5	-0.6 (-1.5, 0.3)
Nitrate	Perth	88.2	85.0	85.8	89.7	0.5 (0.1, 0.9)
	Newcastle	74.0	NR	72.1	85.0	2.0 (1.2, 2.8)
Coronary angiography	Perth	13.8	18.8	19.9	28.1	1.9 (1.4, 2.4)
	Newcastle	0.0	NR	6.6	11.9	1.9 (1.4, 2.4)
PTCA	Perth	7.6	4.9	7.4	8.7	0.5 (0.2, 0.8)
	Newcastle	0.0	NR	0.0	0.4	0.1 (0.0, 0.2)
CABG	Perth	2.6	3.2	3.9	4.3	0.2 (0.0, 0.4)
	Newcastle	0.0	NR	0.5	1.2	0.2 (0.1, 0.4)

NR = not recorded.

ACE = angiotensin-converting enzyme; AMI = acute myocardial infarction; CABG = coronary artery bypass grafting; PTCA = percutaneous transluminal coronary angioplasty.

**Table 4.7: Treatment during the event (per cent) and estimated annual percentage change in level of treatment for women aged 35–64 years, 1985–93**

Treatment	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
Aspirin	Perth	41.4	46.1	79.9	79.6	5.8 (4.7, 6.9)
	Newcastle	25.0	NR	70.3	77.9	7.0 (5.5, 8.4)
ACE inhibitor	Perth	2.0	6.2	16.3	36.6	5.6 (4.7, 6.6)
	Newcastle	3.2	NR	23.7	33.1	4.2 (2.8, 5.6)
Thrombolytic therapy	Perth	3.0	12.6	28.6	42.7	5.5 (4.4, 6.5)
	Newcastle	0.0	NR	32.2	36.5	4.3 (2.8, 5.7)
Inotropic	Perth	26.4	30.1	29.9	27.7	−0.2 (−1.3, 0.9)
	Newcastle	36.6	NR	29.6	30.1	−1.0 (−2.6, 0.5)
Beta blocker	Perth	48.0	53.3	65.3	66.3	2.3 (1.1, 3.5)
	Newcastle	39.7	NR	41.1	46.7	1.4 (−0.3, 3.1)
Calcium channel blocker	Perth	57.2	54.0	49.1	40.5	−2.6 (−3.8, −1.4)
	Newcastle	24.1	NR	40.4	43.1	2.4 (0.8, 4.1)
Other antiarrhythmic	Perth	39.4	42.1	33.1	38.5	−0.9 (−2.1, 0.3)
	Newcastle	30.9	NR	26.5	31.5	0.1 (−1.4, 1.7)
Anticoagulant	Perth	78.1	85.2	79.9	76.8	−0.6 (−1.6, 0.3)
	Newcastle	76.1	NR	77.5	81.7	0.9 (−0.4, 2.3)
Diuretic	Perth	57.6	50.6	49.9	48.4	−0.5 (−1.8, 0.7)
	Newcastle	44.3	NR	37.5	49.4	1.0 (−0.6, 2.7)
Nitrate	Perth	83.4	85.5	86.9	82.0	−0.4 (−1.3, 0.5)
	Newcastle	71.2	NR	71.6	79.6	1.7 (0.2, 3.2)
Coronary angiography	Perth	9.0	16.4	19.0	25.5	2.0 (1.0, 2.9)
	Newcastle	0.0	NR	9.2	10.6	1.3 (0.4, 2.2)
PTCA	Perth	3.1	7.6	4.7	8.1	0.4 (−0.2, 1.0)
	Newcastle	0.0	NR	0.0	0.4	0.1 (−0.1, 0.2)
CABG	Perth	0.8	1.8	4.5	3.9	0.5 (0.0, 0.9)
	Newcastle	0.0	NR	0.0	1.5	0.2 (0.0, 0.5)

NR = not recorded.

ACE = angiotensin-converting enzyme; AMI = acute myocardial infarction; CABG = coronary artery bypass grafting; PTCA = percutaneous transluminal coronary angioplasty.

## 4.2.4 Trends in drugs prescribed at discharge for those who survived a definite AMI

The use of aspirin at discharge from hospital increased from 30% in Perth and 10% in Newcastle during 1985 to over 80% in 1993. There were also increases in the use of ACE inhibitors and beta blockers. In Perth there was a decline in the use of calcium channel blockers from 1985 to 1993, whereas in Newcastle there was a sharp increase.

**Table 4.8: Treatment at discharge (per cent) and estimated annual percentage change in level of treatment for men aged 35–64 years, 1985–93**

Drugs prescribed at discharge	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
Aspirin	Perth	31.4	50.3	84.8	88.3	7.5 (7.0, 8.0)
	Newcastle	13.4	NR	75.2	83.1	8.9 (8.1, 9.7)
ACE inhibitor	Perth	0.7	1.3	6.9	29.8	4.7 (4.3, 5.1)
	Newcastle	1.5	NR	18.0	32.7	4.4 (3.6, 5.2)
Inotropic	Perth	5.3	4.9	5.4	2.5	-0.4 (-0.7, -0.2)
	Newcastle	16.1	NR	11.1	9.2	-0.9 (-1.6, -0.2)
Beta blocker	Perth	55.8	62.1	72.8	81.4	3.4 (2.9, 4.0)
	Newcastle	44.2	NR	42.6	50.9	1.6 (0.5, 2.6)
Calcium channel blocker	Perth	28.3	31.2	30.9	22.4	-1.3 (-1.8, -0.7)
	Newcastle	15.2	NR	31.1	35.6	2.6 (1.7, 3.6)
Other antiarrhythmic	Perth	4.5	3.5	1.2	1.6	-0.4 (-0.6, -0.2)
	Newcastle	3.9	NR	4.8	3.9	0.0 (-0.4, 0.4)
Anticoagulant	Perth	31.1	29.1	17.7	21.7	-1.2 (-1.8, -0.7)
	Newcastle	2.5	NR	4.9	5.0	0.3 (-0.1, 0.8)
Diuretic	Perth	26.7	19.4	16.8	13.9	-1.4 (-1.9, -0.9)
	Newcastle	21.2	NR	14.7	17.8	-0.4 (-1.1, 0.4)
Nitrate	Perth	83.1	75.8	81.5	77.6	-0.4 (-0.9, 0.1)
	Newcastle	53.7	NR	59.4	63.3	1.3 (0.3, 2.4)

NR = not recorded.

ACE = angiotensin-converting enzyme.

**Table 4.9: Treatment at discharge (per cent) and estimated annual percentage change in level of treatment for women aged 35–64 years, 1985–93**

Drugs prescribed at discharge	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
Aspirin	Perth	35.3	46.1	76.9	89.5	7.5 (6.3, 8.7)
	Newcastle	11.9	NR	68.6	83.2	8.7 (7.1, 10.3)
ACE inhibitor	Perth	0.0	1.4	12.6	36.3	6.1 (5.0, 7.1)
	Newcastle	1.2	NR	21.1	30.1	4.2 (2.7, 5.7)
Inotropic	Perth	2.8	5.5	8.5	4.9	−0.1 (−0.8, 0.6)
	Newcastle	25.5	NR	14.7	16.0	−1.3 (−2.7, 0.1)
Beta blocker	Perth	45.5	54.2	58.9	68.1	2.7 (1.2, 4.1)
	Newcastle	34.0	NR	41.7	44.4	1.3 (−0.6, 3.2)
Calcium channel blocker	Perth	42.3	35.7	37.8	28.4	−1.6 (−3.0, −0.3)
	Newcastle	11.5	NR	41.9	41.9	3.5 (1.7, 5.3)
Other antiarrhythmic	Perth	0.0	0.8	2.3	1.2	0.1 (−0.3, 0.4)
	Newcastle	7.2	NR	2.5	4.0	−0.5 (−1.2, 0.2)
Anticoagulant	Perth	21.8	21.7	15.8	16.6	−0.7 (−1.8, 0.4)
	Newcastle	7.9	NR	3.3	5.6	0.1 (−0.7, 1.0)
Diuretic	Perth	35.8	30.8	29.3	20.7	−1.9 (−3.2, −0.6)
	Newcastle	27.4	NR	25.7	29.4	0.4 (−1.3, 2.0)
Nitrate	Perth	79.7	78.5	78.6	78.9	0.1 (−1.1, 1.3)
	Newcastle	53.4	NR	65.4	70.6	2.7 (0.9, 4.5)

NR = not recorded.

ACE = angiotensin-converting enzyme.

# 5 Risk factors

## 5.1 Risk factor surveys

### 5.1.1 Perth, Western Australia

There were three surveys of cardiovascular risk factors in Perth. They were conducted in 1983, 1988 and 1994, between May and November. In the 1983 survey, participants were selected from persons aged 25–64 years whose names were on the rolls for electoral divisions within a 16 km radius of the study centre which was located in the suburb of Nedlands (denoted the inner area). The response fraction for the first survey of risk factors was 84% (1,290 people). Subjects for the second and third surveys of risk factors in Perth were selected from residents within the Perth Metropolitan Area. There were 1,877 participants in the second survey and 1,851 participants in the third, representing responses of 74% and 73% respectively.

During the study period there were large demographic shifts in the study population in Perth. The outer area (i.e. the Perth Metropolitan Area less the inner area) comprised 25% of the study population at the beginning of the study but had increased to 45% by the end of the study. Monitoring of incidence of coronary events covered both areas throughout the study period. The 1989 and 1994 risk factor surveys also covered both areas but the 1983 survey covered the inner area only. All the available data have been included in this report. This approximation underestimated the extent of changes in levels of risk factors, as the inner area tended to have lower levels of risk factors than the outer area.

### 5.1.2 Newcastle, New South Wales

There were also three surveys of cardiovascular risk factors in Newcastle. The first was conducted from May to October 1983 and included residents of the study area aged 35–64 years who were selected by random sampling from the Commonwealth Electoral Roll. A stratified random sample of 300 men and 300 women was selected from each 5-year age group from 35–39 to 60–64 years. A total of 2,466 persons participated, representing response fractions of 68% for men and 69% for women.

The second survey was conducted from June to December 1988 and June to November 1989, and included people aged 25–69 years. The Commonwealth Electoral Roll was used as the sampling frame and there were different numbers of people selected in each age group to accommodate other studies being undertaken. For men and women separately, there were approximately 100 selected from the 25–29 and 30–34 year age groups, 180 selected for the 5-year age groups from 35–39 to 50–54, and 250 selected from the next two 5-year age groups. A total of 1,761 people participated in the survey, representing a response of 65%. For men and women aged 35–64 years the responses were 64% and 68% respectively.

The third survey was conducted from June to December 1994 and included people aged 35–69 years. The New South Wales Electoral Roll was used as the sampling frame. For men and women aged 35–69 years, a similar number of people were selected in each age group as the number selected for the second survey. A total of 1,670 people participated in the survey, representing a response of approximately 64%. For men and women aged 35–64 years the responses were 62% and 65% respectively.

## 5.2 Methods of measuring risk factors

### 5.2.1 Anthropometric measurements

For height and weight the participant was measured without shoes and in light clothing. Weight was measured to the nearest tenth of a kilogram and height measured to the nearest centimetre. Body mass index (BMI) was calculated as the weight in kilograms (with one kilogram subtracted to allow for clothing) divided by the square of the height in metres. People were considered overweight or obese if their BMI was greater than 25 kg/m<sup>2</sup>.

### 5.2.2 Blood pressure

Random zero sphygmomanometers were used to measure blood pressure in Newcastle and ordinary mercury sphygmomanometers were used in Perth. Two readings were taken five minutes apart with the cuff on the right arm and the subject seated. The subject was seated quietly for five minutes before the first reading was taken. Systolic and diastolic blood pressure, phase V, were recorded to the nearest 2 mmHg. In both centres, study nurses undertook a detailed blood pressure measuring training program, and regular quality control checks were carried out.

### 5.2.3 Body chemistry

In all surveys in Perth and in the first survey in Newcastle participants were required to fast for 12 hours before the interview, during which time they could have water, tea or coffee (without milk or sugar). For the second and third surveys in Newcastle, however, participants were not required to fast before a blood sample was taken because non-fasting values for total cholesterol, high-density lipoprotein (HDL) cholesterol and serum lipoprotein(a) (Lp(a)) are not significantly different from fasting values. In all surveys in both centres venipuncture was performed after the participant had been seated for 10 minutes and after all other survey procedures had been completed.

For both centres, blood samples collected in 1983 were cooled, centrifuged, packed in ice and air-freighted to the central analytical laboratory at Flinders Medical Centre, Adelaide. Samples collected during the second survey in Perth were handled in the same manner, but analyses were performed at the Institute of Medical and Veterinary Science in Adelaide. For the third survey in Perth the blood samples were sent to the Department of Biochemistry at Royal Perth Hospital and analysed using a chemical method to measure total cholesterol. The samples collected during the second and third surveys in Newcastle were kept cool (5 degrees Celsius) until analysis by the Hunter Area Pathology Service. Assays were carried out within three days of collection using a Cobas BioCentrifugal Analyzer (Roche) and a standard enzyme kit. Both analytical methods employed in 1989 were standardised against samples from the Centers for Disease Control, Atlanta, USA, and appropriate corrections made to the initial laboratory values.

## 5.3 Trends in levels of risk factors in Newcastle and Perth

There were reductions in diastolic and systolic blood pressure for both men and women in Newcastle from 1983 to 1994 but no reduction was observed in Perth. In both centres there was a reduction in total cholesterol and there was also a slight reduction in HDL cholesterol for men in Newcastle. Associated with the reduction in cholesterol was an increase in the use of medication for the treatment of hypercholesterolaemia. The mean level of BMI increased substantially in both



centres and this resulted in an increase in the prevalence of overweight and obesity. There was also a significant reduction in the prevalence of smoking.

**Table 5.1: Level of risk factors and estimated annual percentage change for men aged 35–64 years from Perth and Newcastle, 1983–94**

	Centre	1983	1988–89	1994	Estimated annual percentage change (95% CI)
Systolic blood pressure mmHg (mean)	Perth	133.5	132.1	132.7	-0.09 (-0.27, 0.09)
	Newcastle	131.6	130.7	130.4	-0.19 (-0.34, -0.05)
Diastolic blood pressure mmHg (mean)	Perth	84.7	80.8	85.3	0.01(-0.10, 0.12)
	Newcastle	83.3	82.5	80.9	-0.28 (-0.37, -0.19)
Currently using medication for the treatment of high blood pressure (%)	Perth	9.4	9.9	8.0	-0.17 (-0.47, 0.13)
	Newcastle	13.1	13.6	13.3	0.08 (-0.23, 0.38)
Total cholesterol mmol/L (mean)	Perth	5.82	5.83	5.56	-0.02 (-0.03, -0.01)
	Newcastle	5.96	5.76	5.75	-0.02 (-0.03, -0.01)
High-density lipoprotein cholesterol, mmol/L (mean)	Perth	1.23	1.19	1.21	0.00 (-0.01, 0.00)
	Newcastle	1.21	1.17	1.11	-0.01 (-0.01, -0.01)
Currently using medication for the treatment of high cholesterol (%)	Perth	NR	0.4	3.1	0.60 (0.29, 0.92)
	Newcastle	NR	3.0	4.7	0.44 (0.02, 0.87)
Body mass index kg/m <sup>2</sup> (mean)	Perth	25.3	26.2	26.4	0.09 (0.06, 0.13)
	Newcastle	26.1	26.8	27.5	0.12 (0.09, 0.16)
Current smokers (%)	Perth	32.6	24.8	25.2	-0.72 (-1.17, -0.27)
	Newcastle	35.8	27.1	23.4	-1.29 (-1.68, -0.90)
Overweight or obese (%) (BMI > 25)	Perth	51.5	61.7	63.6	1.03 (0.53, 1.53)
	Newcastle	59.3	69.6	73.9	1.39 (0.99, 1.79)
No leisure-time physical activity (%)	Newcastle	NR	5.2	6.5	0.2 (-0.1, 0.5)

NR = not recorded.

Note: Age-standardised to the 1991 Australian population.

**Table 5.2: Level of risk factors and estimated annual percentage change for women aged 35–64 years from Perth and Newcastle, 1983–94**

	Centre	1983	1988–89	1994	Estimated annual percentage change (95% CI)
Systolic blood pressure mmHg (mean)	Perth	126.6	125.1	126.1	-0.04 (-0.22, 0.14)
	Newcastle	128.0	126.2	126.4	-0.24 (-0.39, -0.09)
Diastolic blood pressure mmHg (mean)	Perth	79.2	74.6	78.4	-0.10 (-0.20, 0.01)
	Newcastle	78.8	77.8	75.5	-0.33 (-0.42, -0.24)
Currently using medication for the treatment of high blood pressure (%)	Perth	11.8	9.2	10.2	-0.22 (-0.53, 0.09)
	Newcastle	16.9	16.2	13.2	-0.28 (-0.59, 0.04)
Total cholesterol mmol/L (mean)	Perth	5.77	5.66	5.41	-0.03 (-0.04, -0.02)
	Newcastle	5.89	5.74	5.54	-0.03 (-0.04, -0.03)
High-density lipoprotein cholesterol, mmol/L (mean)	Perth	1.52	1.47	1.50	0.00 (-0.01, 0.00)
	Newcastle	1.49	1.51	1.45	0.00 (-0.01, 0.00)
Currently using medication for the treatment of high cholesterol (%)	Perth	NR	0.1	2.4	0.55 (0.28, 0.82)
	Newcastle	NR	2.2	3.0	0.19 (-0.18, 0.57)
Body mass index kg/m <sup>2</sup> (mean)	Perth	24.3	25.1	25.7	0.14 (0.09, 0.18)
	Newcastle	25.0	25.9	26.8	0.16 (0.11, 0.20)
Current smokers (%)	Perth	21.6	21.0	15.0	-0.62 (-1.01, -0.24)
	Newcastle	23.8	16.3	18.8	-0.58 (-0.91, -0.25)
Overweight or obese (%) (BMI > 25)	Perth	35.1	41.8	48.9	1.24 (0.75, 1.73)
	Newcastle	43.2	49.7	53.0	0.90 (0.49, 1.31)
No leisure-time physical activity (%)	Newcastle	NR	8.9	9.4	0.1 (-0.5, 0.6)

NR = not recorded.

Note: Age-standardised to the 1991 Australian population.

## 5.4 Trends in use of medications in Newcastle

In Newcastle there was an increase in the use of daily aspirin by men aged 35–64 years. There was also a substantial increase in the use of calcium channel blockers and ACE inhibitors by both men and women. These newer medications appear to have replaced beta blockers, diuretics and other antihypertensive medications.

**Table 5.3: Use of medications (per cent) and estimated annual percentage change in medication use for persons aged 35–64 years from Newcastle, 1983–94**

	1983	1988–89	1994	Estimated annual percentage change (95% CI)
<b>Men</b>				
Beta blockers	8.5	8.4	5.9	–0.24 (–0.49, 0.01)
Calcium channel blockers	0.9	3.7	4.5	0.46 (0.31, 0.61)
Diuretics	7.0	5.0	4.0	–0.34 (–0.56, –0.12)
Antihypertensives	7.0	2.8	2.7	–0.51 (–0.70, –0.31)
ACE inhibitor	NA	2.0	6.0	0.64 (0.51, 0.78)
Daily aspirin	2.9	4.2	7.5	0.59 (0.39, 0.79)
<b>Women</b>				
Beta blockers	11.0	9.2	4.9	–0.58 (–0.83, –0.32)
Calcium channel blockers	0.9	3.1	4.9	0.43 (0.29, 0.58)
Diuretics	15.3	10.9	7.0	–0.82 (–1.10, –0.53)
Antihypertensives	7.4	4.7	2.0	–0.61 (–0.81, –0.41)
ACE inhibitors	NA	2.0	4.6	0.53 (0.41, 0.66)
Daily aspirin	3.3	3.3	2.8	0.04 (–0.12, 0.20)

NA = not available.

ACE = angiotensin-converting enzyme.

# Appendix 1: Rates of fatal and non-fatal events

Table A1: Average annual rates of death from coronary heart disease and estimated annual change in rates, 1985–93

Age group (years)	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
Rate per 100,000 population					
<b>Men</b>					
35–44	Perth	25.4	20.3	20.2	–2.0 (–6.1, 2.3)
	Newcastle	42.0	31.0	23.2	–10.4 (–15.5, –5.0)
45–54	Perth	119.5	105.2	86.1	–4.9 (–7.1, –2.6)
	Newcastle	176.4	148.3	125.8	–6.8 (–9.6, –3.8)
55–64	Perth	438.8	425.1	352.1	–3.9 (–5.2, –2.6)
	Newcastle	606.0	481.6	377.8	–6.8 (–8.4, –5.1)
65–69	Newcastle	1132.4	989.2	668.9	–8.6 (–11.1, –6.0)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>148.8</b>	<b>138.9</b>	<b>116.3</b>	<b>–3.9 (–5.0, –2.8)</b>
	<b>Newcastle</b>	<b>212.2</b>	<b>170.0</b>	<b>135.8</b>	<b>–7.7 (–9.1, –6.3)</b>
<b>Women</b>					
35–44	Perth	3.2	5.5	3.6	–3.0 (–12.3, 7.3)
	Newcastle	13.3	9.9	6.2	–11.3 (–20.3, –1.3)
45–54	Perth	28.6	27.0	12.5	10.4 (–14.9, –5.6)
	Newcastle	65.5	21.6	35.9	–10.4 (–15.7, –4.8)
55–64	Perth	136.2	119.3	115.5	–3.0 (–5.3, –0.6)
	Newcastle	224.8	176.4	134.1	–7.7 (–10.4, –4.9)
65–69	Newcastle	448.9	438.9	237.8	–9.5 (–13.2, –5.6)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>42.6</b>	<b>39.2</b>	<b>32.5</b>	<b>–3.9 (–6.0, –1.8)</b>
	<b>Newcastle</b>	<b>80.1</b>	<b>52.4</b>	<b>45.9</b>	<b>–8.6 (–10.9, –6.2)</b>

(a) Age-standardised to the 1991 Australian population.

**Table A2: Average annual rates of non-fatal definite acute myocardial infarction and estimated annual change in rates, 1985–93**

Age group (years)	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Rate per 100,000 population</b>					
<b>Men</b>					
35–44	Perth	71.7	72.8	63.6	–2.0 (–4.3, 0.4)
	Newcastle	98.1	90.9	69.6	–4.9 (–8.1, –1.5)
45–54	Perth	265.2	254.3	214.5	–3.0 (–4.4, –1.5)
	Newcastle	318.5	275.3	289.1	–2.0 (–4.1, 0.2)
55–64	Perth	564.7	533.7	497.8	–2.0 (–3.1, –0.8)
	Newcastle	679.0	565.6	514.8	–3.9 (–5.5, –2.3)
65–69	Newcastle	787.4	767.8	728.5	–1.0 (–5.0, 3.1)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>243.9</b>	<b>234.0</b>	<b>209.3</b>	<b>–3.0 (–3.8, –2.1)</b>
	<b>Newcastle</b>	<b>298.7</b>	<b>256.2</b>	<b>239.0</b>	<b>–3.9 (–5.1, –2.7)</b>
<b>Women</b>					
35–44	Perth	5.5	7.6	6.4	3.0 (–4.9, 11.7)
	Newcastle	18.1	18.5	11.3	–3.9 (–11.5, 4.3)
45–54	Perth	40.2	45.3	33.2	–3.9 (–7.6, –0.1)
	Newcastle	72.1	78.8	60.7	–2.0 (–6.3, 2.5)
55–64	Perth	127.5	152.6	121.5	0.0 (–2.3, 2.4)
	Newcastle	267.9	232.6	190.9	–3.9 (–6.3, –1.4)
65–69	Newcastle	420.2	354.4	379.8	–1.0 (–5.0, 3.1)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>45.6</b>	<b>54.0</b>	<b>42.2</b>	<b>–1.0 (–2.9, 0.9)</b>
	<b>Newcastle</b>	<b>94.3</b>	<b>88.7</b>	<b>69.7</b>	<b>–3.9 (–6.0, –1.8)</b>

(a) Age-standardised to the 1991 Australian population.

**Table A3: Average annual rates of non-fatal probable acute myocardial infarction in Newcastle and estimated annual change in rates for men and women, 1985–93**

Age group (years)	Sex	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Rate per 100,000 population</b>					
35–44	Men	59.1	86.9	54.6	–2.0 (–7.3, 3.7)
	Women	19.3	24.3	20.4	1.0 (–8.7, 11.7)
45–54	Men	225.1	227.2	199.4	–1.0 (–4.5, 2.6)
	Women	96.6	96.1	87.1	–2.0 (–7.3, 3.6)
55–64	Men	385.3	493.1	433.7	2.0 (–0.7, 4.8)
	Women	266.3	210.8	200.5	–3.0 (–6.4, 0.7)
65–69	Men	522.7	559.6	592.9	2.0 (–1.6, 5.7)
	Women	401.4	395.3	355.4	–1.0 (–5.0, 3.1)
<b>35–64<sup>(a)</sup></b>	<b>Men</b>	<b>184.8</b>	<b>222.9</b>	<b>185.8</b>	<b>1.0 (–1.0, 3.1)</b>
	<b>Women</b>	<b>102.9</b>	<b>92.0</b>	<b>84.9</b>	<b>–2.0 (–4.8, 0.9)</b>

(a) Age-standardised to the 1991 Australian population.

# Appendix 2: Case fatality rates

Table A4: Pre-hospital case fatality and estimated average annual percentage change, 1985–93

Age group (years)	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
Per cent					
<b>Men</b>					
35–44	Perth	22.0	15.0	21.4	0.1 (–1.0, 1.3)
	Newcastle	21.7	21.1	18.5	–0.5 (–2.2, 1.2)
45–54	Perth	23.6	21.9	22.8	–0.2 (–0.9, 0.6)
	Newcastle	27.7	26.8	23.9	–0.8 (–1.9, 0.3)
55–64	Perth	30.9	30.6	27.0	–0.7 (–1.3, –0.1)
	Newcastle	32.8	32.1	32.3	–0.1 (–0.9, 0.7)
65–69	Newcastle	38.5	36.6	34.4	–0.9 (–1.9, 0.1)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>28.1</b>	<b>26.8</b>	<b>25.3</b>	<b>–0.4 (–0.9, 0.0)</b>
	<b>Newcastle</b>	<b>30.4</b>	<b>29.6</b>	<b>28.8</b>	<b>–0.3 (–1.0, 0.3)</b>
<b>Women</b>					
35–44	Perth	21.1	30.8	21.4	–1.0 (–5.0, 3.0)
	Newcastle	34.6	30.8	23.5	–2.1 (–6.5, 2.3)
45–54	Perth	26.7	24.3	10.7	–2.3 (–4.1, –0.4)
	Newcastle	27.4	16.9	25.7	0.0 (–2.1, 2.1)
55–64	Perth	30.7	28.2	25.3	–1.1 (–2.2, 0.0)
	Newcastle	28.1	23.3	25.2	–0.7 (–1.8, 0.5)
65–69	Newcastle	28.9	29.5	24.0	–1.0 (–2.3, 0.4)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>28.8</b>	<b>27.4</b>	<b>21.0</b>	<b>–1.4 (–2.3, –0.4)</b>
	<b>Newcastle</b>	<b>28.5</b>	<b>22.2</b>	<b>25.2</b>	<b>–0.6 (–1.6, 0.4)</b>

(a) Age-standardised to the 1991 Australian population.

Table A5: Case fatality for those hospitalised and estimated average annual percentage change, 1985–93

Age group (years)	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
Per cent					
<b>Men</b>					
35–44	Perth	5.4	8.0	3.4	–0.2 (–1.0, 0.6)
	Newcastle	10.6	5.6	8.0	–0.8 (–2.1, 0.5)
45–54	Perth	9.8	9.5	7.6	–0.3 (–0.9, 0.3)
	Newcastle	11.0	11.2	8.5	–0.6 (–1.5, 0.3)
55–64	Perth	18.6	19.8	19.8	0.3 (–0.3, 0.9)
	Newcastle	21.3	20.5	14.8	–1.0 (–1.8, –0.2)
65–69	Newcastle	33.3	31.1	20.6	–2.3 (–3.5, –1.2)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>15.0</b>	<b>15.9</b>	<b>15.0</b>	<b>0.1 (–0.3, 0.5)</b>
	<b>Newcastle</b>	<b>17.5</b>	<b>16.6</b>	<b>12.4</b>	<b>–0.8 (–1.4, –0.3)</b>
<b>Women</b>					
35–44	Perth	20.0	16.7	18.2	–0.9 (–4.9, 3.0)
	Newcastle	11.8	5.6	15.4	–0.2 (–3.9, 3.5)
45–54	Perth	20.3	17.2	18.7	–0.1 (–2.1, 1.9)
	Newcastle	27.9	5.6	15.4	–2.6 (–4.7, –0.4)
55–64	Perth	30.2	21.8	31.4	0.2 (–1.1, 1.5)
	Newcastle	24.3	25.9	21.4	–0.7 (–2.0, 0.7)
65–69	Newcastle	32.0	36.6	19.1	–2.2 (–3.8, –0.6)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>26.5</b>	<b>21.1</b>	<b>26.7</b>	<b>0.1 (–1.0, 1.1)</b>
	<b>Newcastle</b>	<b>24.2</b>	<b>18.5</b>	<b>19.2</b>	<b>–1.1 (–2.2, 0.1)</b>

(a) Age-standardised to the 1991 Australian population.



**Table A6: Case fatality for those who were admitted to hospital and survived at least 24 hours, and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>					
<b>Men</b>					
35–44	Perth	2.0	6.4	1.2	0.1 (–0.4, 0.5)
	Newcastle	6.7	4.5	2.8	–0.6 (–1.7, 0.4)
45–54	Perth	5.8	6.2	5.1	–0.2 (–0.6, 0.2)
	Newcastle	6.3	6.7	4.4	–0.4 (–1.1, 0.3)
55–64	Perth	12.4	15.4	13.1	–0.3 (–0.7, 0.2)
	Newcastle	13.2	13.6	9.6	–0.5 (–1.2, 0.2)
65–69	Newcastle	21.1	16.7	13.7	–1.2 (–2.3, –0.2)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>9.2</b>	<b>10.9</b>	<b>8.9</b>	<b>0.0 (–0.4, 0.3)</b>
	<b>Newcastle</b>	<b>10.7</b>	<b>10.9</b>	<b>7.3</b>	<b>–0.5 (–1.0, 0.0)</b>
<b>Women</b>					
35–44	Perth	14.3	5.9	20.0	–1.2 (–4.4, 2.0)
	Newcastle	0.0	0.0	15.4	2.1 (–0.5, 4.6)
45–54	Perth	7.6	11.1	12.7	–0.1 (–1.4, 1.3)
	Newcastle	13.7	0.0	13.7	–0.4 (–2.2, 1.4)
55–64	Perth	24.6	18.2	27.8	0.1 (–1.0, 1.3)
	Newcastle	16.3	18.6	11.7	–0.7 (–2.0, 0.5)
65–69	Newcastle	22.1	19.3	11.5	–1.6 (–3.0, –0.2)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>17.5</b>	<b>13.6</b>	<b>19.8</b>	<b>0.4 (–0.5, 1.4)</b>
	<b>Newcastle</b>	<b>14.1</b>	<b>11.8</b>	<b>12.6</b>	<b>–0.5 (–1.5, 0.5)</b>

(a) Age-standardised to the 1991 Australian population.

Table A7: Total case fatality and estimated average annual percentage change, 1985–93

Age group (years)	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
Per cent					
<b>Men</b>					
35–44	Perth	26.2	21.8	24.1	0.0 (–1.3, 1.3)
	Newcastle	30.0	25.4	25.0	–1.1 (–3.0, 0.8)
45–54	Perth	31.1	29.3	28.6	–0.4 (–1.2, 0.5)
	Newcastle	35.6	35.0	30.3	–1.1 (–2.3, 0.0)
55–64	Perth	43.7	44.3	41.4	–0.3 (–0.9, 0.3)
	Newcastle	47.2	46.0	42.3	–0.8 (–1.6, 0.1)
65–69	Newcastle	59.0	56.3	47.9	–2.1 (–3.1, –1.1)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>38.7</b>	<b>38.2</b>	<b>36.4</b>	<b>–0.3 (–0.8, 0.2)</b>
	<b>Newcastle</b>	<b>42.5</b>	<b>41.1</b>	<b>37.5</b>	<b>–0.9 (–1.6, –0.2)</b>
<b>Women</b>					
35–44	Perth	36.8	42.3	35.7	–1.6 (–6.1, 2.9)
	Newcastle	42.3	34.6	35.3	–2.0 (–6.7, 2.7)
45–54	Perth	41.6	37.4	27.4	–1.9 (–4.1, 0.3)
	Newcastle	47.6	21.5	37.1	–1.9 (–4.2, 0.5)
55–64	Perth	51.6	43.9	48.7	–0.7 (–1.9, 0.5)
	Newcastle	45.6	43.1	41.3	–1.0 (–2.3, 0.4)
65–69	Newcastle	51.7	55.3	38.5	–2.3 (–3.8, –0.8)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>47.6</b>	<b>42.0</b>	<b>41.7</b>	<b>–1.0 (–2.0, 0.1)</b>
	<b>Newcastle</b>	<b>45.9</b>	<b>36.5</b>	<b>39.6</b>	<b>–1.2 (–2.4, –0.1)</b>

(a) Age-standardised to the 1991 Australian population.

# Appendix 3: Medical care before the coronary event

Table A8: Treatment with aspirin before the event and estimated average annual percentage change, 1985–93

Age group (years)	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
Per cent					
<b>Men</b>					
35–44	Perth	4.3	14.1	12.0	1.5 (0.4, 2.5)
	Newcastle	4.3	10.3	12.0	1.0 (–0.3, 2.4)
45–54	Perth	4.0	11.3	14.9	1.7 (1.1, 2.4)
	Newcastle	12.7	11.2	16.4	0.7 (–0.2, 1.7)
55–64	Perth	9.1	17.7	22.8	2.3 (1.8, 2.9)
	Newcastle	13.3	17.8	24.5	1.9 (1.1, 2.7)
65–69	Newcastle	17.1	20.4	33.0	3.0 (1.9, 4.0)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>7.3</b>	<b>15.6</b>	<b>19.7</b>	<b>2.1 (1.7, 2.5)</b>
	<b>Newcastle</b>	<b>12.0</b>	<b>14.6</b>	<b>21.0</b>	<b>1.5 (0.9, 2.0)</b>
<b>Women</b>					
35–44	Perth	7.1	17.6	0.0	–0.9 (–3.7, 1.9)
	Newcastle	6.3	5.3	8.3	0.2 (–2.9, 3.2)
45–54	Perth	8.5	12.5	14.9	1.4 (–0.3, 3.1)
	Newcastle	11.4	15.1	17.6	0.9 (–1.3, 3.2)
55–64	Perth	10.0	15.8	18.0	1.7 (0.6, 2.7)
	Newcastle	11.5	16.4	21.3	1.6 (0.4, 2.8)
65–69	Newcastle	19.5	17.2	27.6	1.8 (0.3, 3.3)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>9.3</b>	<b>15.1</b>	<b>15.5</b>	<b>1.5 (0.6, 2.3)</b>
	<b>Newcastle</b>	<b>10.0</b>	<b>14.7</b>	<b>19.1</b>	<b>1.5 (0.5, 2.5)</b>

(a) Age-standardised using Australian MONICA populations.

**Table A9: Treatment with ACE inhibitors before the event and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>					
<b>Men</b>					
35–44	Perth	1.3	3.9	5.7	0.8 (0.2, 1.5)
	Newcastle	2.1	5.2	6.7	1.1 (0.1, 2.1)
45–54	Perth	1.0	3.9	11.0	1.5 (1.1, 2.0)
	Newcastle	0.9	9.4	14.1	2.1 (1.4, 2.9)
55–64	Perth	1.7	4.5	10.5	1.4 (1.1, 1.8)
	Newcastle	4.2	10.6	21.5	2.7 (2.0, 3.3)
65–69	Newcastle	8.0	9.9	22.8	2.5 (1.7, 3.4)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>1.5</b>	<b>4.3</b>	<b>10.2</b>	<b>1.4 (1.1, 1.7)</b>
	<b>Newcastle</b>	<b>3.1</b>	<b>9.8</b>	<b>18.1</b>	<b>2.3 (1.9, 2.8)</b>
<b>Women</b>					
35–44	Perth	16.7	0.0	9.1	–1.2 (–4.3, 1.8)
	Newcastle	0.0	0.0	7.7	1.5 (–0.1, 3.2)
45–54	Perth	0.0	2.5	19.7	3.0 (1.6, 4.4)
	Newcastle	4.7	14.8	15.7	1.7 (–0.3, 3.8)
55–64	Perth	1.6	7.1	19.5	3.2 (2.3, 4.1)
	Newcastle	6.3	16.3	15.8	1.7 (0.6, 2.8)
65–69	Newcastle	10.9	19.8	23.3	2.6 (1.1, 4.0)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>2.6</b>	<b>5.2</b>	<b>18.6</b>	<b>2.9 (2.3, 3.7)</b>
	<b>Newcastle</b>	<b>5.3</b>	<b>14.4</b>	<b>15.1</b>	<b>1.7 (0.8, 2.6)</b>

(a) Age-standardised using Australian MONICA populations.

**Table A10: Treatment with inotropic drugs before the event and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>					
<b>Men</b>					
35–44	Perth	1.9	2.2	0.0	–0.3 (–0.7, 0.1)
	Newcastle	3.2	1.0	2.7	–0.1 (–0.8, 0.6)
45–54	Perth	3.1	2.9	1.6	–0.2 (–0.6, 0.1)
	Newcastle	6.1	8.4	4.2	–0.4 (–1.1, 0.3)
55–64	Perth	7.1	6.2	4.1	–0.4 (–0.8, –0.1)
	Newcastle	15.8	13.1	11.4	–0.8 (–1.5, –0.1)
65–69	Newcastle	28.1	21.7	18.5	–1.4 (–2.5, –0.4)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>5.5</b>	<b>4.9</b>	<b>3.0</b>	<b>–0.4 (–0.6, –0.1)</b>
	<b>Newcastle</b>	<b>12.0</b>	<b>10.7</b>	<b>8.6</b>	<b>–0.6 (–1.1, –0.2)</b>
<b>Women</b>					
35–44	Perth	0.0	0.0	0.0	0.0 (0.0, 0.0)
	Newcastle	11.8	0.0	0.0	–2.6 (–4.9, –0.2)
45–54	Perth	1.4	4.5	5.4	0.6 (–0.4, 1.6)
	Newcastle	22.4	7.5	5.9	–1.4 (–3.4, 0.6)
55–64	Perth	9.5	8.3	6.6	–0.5 (–1.3, 0.3)
	Newcastle	28.2	16.0	14.1	–2.5 (–3.8, –1.3)
65–69	Newcastle	45.3	23.5	19.6	–3.9 (–5.5, –2.4)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>6.4</b>	<b>6.5</b>	<b>5.7</b>	<b>–0.2 (–0.8, 0.4)</b>
	<b>Newcastle</b>	<b>25.1</b>	<b>12.3</b>	<b>10.3</b>	<b>–2.3 (–3.3, –1.3)</b>

(a) Age-standardised using Australian MONICA populations.

Table A11: Treatment with beta blockers before the event and average annual percentage change, 1985–93

Age group (years)	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
Per cent					
<b>Men</b>					
35–44	Perth	13.7	15.1	13.6	0.1 (–1.1, 1.3)
	Newcastle	19.1	8.3	21.3	–0.2 (–1.9, 1.6)
45–54	Perth	22.2	18.1	17.1	–0.7 (–1.5, 0.1)
	Newcastle	24.3	20.6	14.8	–1.8 (–2.9, –0.7)
55–64	Perth	25.6	24.4	21.6	–0.5 (–1.2, 0.1)
	Newcastle	27.9	23.9	19.6	–1.1 (–1.9, –0.2)
65–69	Newcastle	29.4	24.6	21.2	–0.9 (–2.0, 0.1)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>23.6</b>	<b>21.8</b>	<b>19.6</b>	<b>–0.5 (–1.0, 0.0)</b>
	<b>Newcastle</b>	<b>26.1</b>	<b>21.6</b>	<b>18.4</b>	<b>–1.2 (–1.9, –0.6)</b>
<b>Women</b>					
35–44	Perth	28.6	11.8	4.5	–4.0 (–7.4, –0.5)
	Newcastle	17.6	10.5	25.0	0.2 (–4.3, 4.7)
45–54	Perth	21.1	26.4	18.9	–0.5 (–2.6, 1.7)
	Newcastle	44.9	29.6	23.1	–3.4 (–6.3, –0.5)
55–64	Perth	27.5	21.2	24.2	–0.5 (–1.8, 0.8)
	Newcastle	36.9	27.9	25.0	–2.1 (–3.5, –0.6)
65–69	Newcastle	43.7	23.7	26.1	–2.7 (–4.3, –1.1)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>25.8</b>	<b>21.8</b>	<b>21.0</b>	<b>–0.7 (–1.8, 0.4)</b>
	<b>Newcastle</b>	<b>37.3</b>	<b>26.8</b>	<b>24.5</b>	<b>–2.2 (–3.5, –0.9)</b>

(a) Age-standardised using Australian MONICA populations.

**Table A12: Treatment with calcium channel blockers before the event and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>					
<b>Men</b>					
35–44	Perth	9.3	10.2	4.5	–0.7 (–1.6, 0.3)
	Newcastle	6.5	9.4	6.8	0.3 (–1.0, 1.5)
45–54	Perth	8.1	10.2	13.6	0.8 (0.2, 1.5)
	Newcastle	14.5	14.0	18.3	0.8 (–0.3, 1.8)
55–64	Perth	15.2	21.1	19.9	0.8 (0.2, 1.4)
	Newcastle	19.6	23.9	29.1	1.7 (0.9, 2.6)
65–69	Newcastle	24.2	28.4	31.5	1.6 (0.5, 2.7)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>12.8</b>	<b>17.1</b>	<b>16.8</b>	<b>0.6 (0.2, 1.1)</b>
	<b>Newcastle</b>	<b>17.0</b>	<b>19.9</b>	<b>24.1</b>	<b>1.3 (0.7, 1.9)</b>
<b>Women</b>					
35–44	Perth	21.4	17.6	18.2	0.0 (–4.2, 4.1)
	Newcastle	5.9	10.5	16.7	0.7 (–3.0, 4.5)
45–54	Perth	16.9	16.9	17.6	–0.3 (–2.3, 1.6)
	Newcastle	24.0	20.4	21.2	–0.3 (–2.8, 2.3)
55–64	Perth	23.9	25.7	27.2	0.7 (–0.6, 2.0)
	Newcastle	26.6	25.5	32.7	1.1 (–0.4, 2.5)
65–69	Newcastle	24.2	28.4	31.5	1.6 (0.5, 2.7)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>21.8</b>	<b>22.6</b>	<b>23.8</b>	<b>0.4 (–0.6, 1.5)</b>
	<b>Newcastle</b>	<b>24.0</b>	<b>22.7</b>	<b>28.1</b>	<b>0.8 (–0.4, 2.0)</b>

(a) Age-standardised using Australian MONICA populations.

**Table A13: Treatment with other antiarrhythmic drugs before the event and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>					
<b>Men</b>					
35–44	Perth	1.9	0.0	0.6	–0.2 (–0.5, 0.1)
	Newcastle	0.0	2.1	0.0	0.0 (–0.5, 0.4)
45–54	Perth	1.7	1.1	0.5	–0.2 (–0.5, 0.0)
	Newcastle	1.3	1.3	0.4	–0.2 (–0.5, 0.1)
55–64	Perth	2.6	1.7	1.6	–0.2 (–0.4, 0.0)
	Newcastle	3.5	2.3	2.4	–0.3 (–0.6, 0.1)
65–69	Newcastle	4.5	2.7	2.1	–0.3 (–0.7, 0.1)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>2.3</b>	<b>1.4</b>	<b>1.2</b>	<b>–0.2 (–0.4, –0.1)</b>
	<b>Newcastle</b>	<b>2.6</b>	<b>2.0</b>	<b>1.6</b>	<b>–0.2 (–0.4, 0.0)</b>
<b>Women</b>					
35–44	Perth	0.0	0.0	0.0	0.0 (0.0, 0.0)
	Newcastle	6.3	0.0	0.0	–1.5 (–3.3, 0.2)
45–54	Perth	1.4	1.1	0.0	–0.2 (–0.7, 0.3)
	Newcastle	8.9	0.0	0.0	–1.1 (–2.1, –0.1)
55–64	Perth	0.9	1.7	2.2	0.1 (–0.2, 0.5)
	Newcastle	3.3	2.5	5.2	0.3 (–0.3, 0.9)
65–69	Newcastle	4.5	2.7	2.1	–0.3 (–0.7, 0.1)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>1.0</b>	<b>1.4</b>	<b>1.4</b>	<b>0.1 (–0.2, 0.3)</b>
	<b>Newcastle</b>	<b>5.1</b>	<b>1.6</b>	<b>3.3</b>	<b>–0.1 (–0.6, 0.4)</b>

(a) Age-standardised using Australian MONICA populations.



**Table A14: Treatment with anticoagulants before the event and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>					
<b>Men</b>					
35–44	Perth	0.6	1.6	0.0	0.0 (–0.3, 0.3)
	Newcastle	1.1	2.1	4.0	0.4 (–0.3, 1.1)
45–54	Perth	3.8	2.7	2.8	–0.1 (–0.4, 0.3)
	Newcastle	1.3	2.1	2.7	0.2 (–0.2, 0.6)
55–64	Perth	2.2	3.2	4.9	0.5 (0.2, 0.7)
	Newcastle	2.5	2.5	4.3	0.2 (–0.1, 0.6)
65–69	Newcastle	3.6	4.3	4.9	0.1 (–0.7, 0.8)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>2.5</b>	<b>2.9</b>	<b>3.9</b>	<b>0.2 (0.0, 0.4)</b>
	<b>Newcastle</b>	<b>2.1</b>	<b>2.3</b>	<b>3.8</b>	<b>0.2 (0.0, 0.5)</b>
<b>Women</b>					
35–44	Perth	0.0	0.0	0.0	0.0 (0.0, 0.0)
	Newcastle	0.0	0.0	0.0	0.0 (0.0, 0.0)
45–54	Perth	1.4	4.5	8.1	0.8 (–0.2, 1.9)
	Newcastle	7.0	5.7	2.0	–0.3 (–1.7, 1.0)
55–64	Perth	3.6	1.2	5.3	0.4 (–0.2, 0.9)
	Newcastle	1.6	1.0	3.2	0.2 (–0.2, 0.6)
65–69	Newcastle	3.6	4.3	4.9	0.1 (–0.7, 0.8)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>2.7</b>	<b>2.0</b>	<b>5.6</b>	<b>0.5 (0.0, 0.9)</b>
	<b>Newcastle</b>	<b>3.0</b>	<b>2.2</b>	<b>2.6</b>	<b>0.1 (–0.3, 0.5)</b>

(a) Age-standardised using Australian MONICA populations.

**Table A15: Treatment with diuretics before the event and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>					
<b>Men</b>					
35–44	Perth	8.1	6.5	6.3	–0.2 (–1.1, 0.6)
	Newcastle	10.4	7.2	2.7	–1.4 (–2.6, –0.1)
45–54	Perth	13.1	8.0	7.8	–0.9 (–1.5, –0.3)
	Newcastle	15.7	11.9	9.9	–1.0 (–1.9, –0.1)
55–64	Perth	23.6	18.2	15.6	–1.3 (–1.9, –0.7)
	Newcastle	24.9	21.1	20.0	–0.8 (–1.6, 0.0)
65–69	Newcastle	34.8	30.0	28.2	–1.4 (–2.5, –0.2)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>19.4</b>	<b>14.4</b>	<b>12.7</b>	<b>–1.0 (–1.4, –0.6)</b>
	<b>Newcastle</b>	<b>21.1</b>	<b>17.3</b>	<b>15.6</b>	<b>–0.9 (–1.5, –0.3)</b>
<b>Women</b>					
35–44	Perth	35.7	5.9	13.6	–2.8 (–6.7, 1.1)
	Newcastle	0.0	15.8	25.0	4.3 (0.3, 8.2)
45–54	Perth	31.9	26.1	17.6	–2.6 (–4.8, –0.4)
	Newcastle	49.1	22.2	27.5	–2.2 (–5.1, 0.6)
55–64	Perth	41.0	33.1	31.1	–1.8 (–3.2, –0.4)
	Newcastle	42.9	31.4	42.4	–0.2 (–1.7, 1.4)
65–69	Newcastle	58.1	40.6	39.6	–3.3 (–4.9, –1.6)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>38.0</b>	<b>28.7</b>	<b>25.9</b>	<b>–2.0 (–3.2, –0.9)</b>
	<b>Newcastle</b>	<b>40.7</b>	<b>27.5</b>	<b>36.7</b>	<b>–0.4 (–1.7, 0.9)</b>

(a) Age-standardised using Australian MONICA populations.

**Table A16: Treatment with nitrates before the event and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>					
<b>Men</b>					
35–44	Perth	11.8	14.6	10.8	0.0 (–1.1, 1.2)
	Newcastle	10.6	14.4	10.7	–0.2 (–1.8, 1.4)
45–54	Perth	12.9	14.2	12.9	0.1 (–0.6, 0.8)
	Newcastle	23.8	16.5	15.2	–1.2 (–2.3, –0.2)
55–64	Perth	25.1	24.5	23.0	–0.4 (–1.1, 0.2)
	Newcastle	30.3	28.6	28.0	–0.4 (–1.3, 0.5)
65–69	Newcastle	41.3	37.7	37.2	–0.6 (–1.8, 0.6)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>20.5</b>	<b>20.8</b>	<b>19.2</b>	<b>–0.2 (–0.7, 0.2)</b>
	<b>Newcastle</b>	<b>26.7</b>	<b>24.0</b>	<b>23.0</b>	<b>–0.6 (–1.3, 0.0)</b>
<b>Women</b>					
35–44	Perth	21.4	23.5	4.5	–2.4 (–6.1, 1.4)
	Newcastle	11.8	0.0	16.7	–0.1 (–3.5, 3.3)
45–54	Perth	21.1	20.5	17.6	–0.9 (–2.9, 1.2)
	Newcastle	22.0	20.0	15.4	–1.0 (–3.5, 1.4)
55–64	Perth	28.8	31.8	28.8	0.4 (–0.9, 1.8)
	Newcastle	40.4	28.2	27.6	–2.2 (–3.7, –0.7)
65–69	Newcastle	52.3	30.3	33.7	–2.7 (–4.4, –1.0)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>26.1</b>	<b>28.0</b>	<b>23.5</b>	<b>0.0 (–1.1, 1.1)</b>
	<b>Newcastle</b>	<b>32.8</b>	<b>23.4</b>	<b>23.3</b>	<b>–1.9 (–3.1, –0.6)</b>

(a) Age-standardised using Australian MONICA populations.

**Table A17: Proportion of patients who had undergone coronary angiography before the event and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>					
<b>Men</b>					
35–44	Perth	14.3	22.6	10.3	–1.4 (–3.0, 0.3)
	Newcastle	11.6	18.0	19.1	1.3 (–0.3, 2.9)
45–54	Perth	16.3	15.9	18.8	0.7 (–0.4, 1.8)
	Newcastle	16.0	20.5	19.3	0.7 (–0.3, 1.7)
55–64	Perth	16.7	23.5	22.9	0.4 (–0.5, 1.2)
	Newcastle	17.8	22.9	30.6	2.1 (1.3, 2.8)
65–69	Newcastle	14.3	23.4	31.3	3.0 (2.1, 3.9)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>16.4</b>	<b>21.3</b>	<b>20.6</b>	<b>0.3 (–0.4, 0.9)</b>
	<b>Newcastle</b>	<b>16.7</b>	<b>21.8</b>	<b>26.5</b>	<b>1.6 (1.0, 2.2)</b>
<b>Women</b>					
35–44	Perth	50.0	18.2	3.8	–7.3 (–12.0, –2.7)
	Newcastle	5.3	4.0	5.9	–0.1 (–2.4, 2.3)
45–54	Perth	10.7	20.4	19.0	1.0 (–1.7, 3.8)
	Newcastle	15.5	23.0	17.9	0.9 (–1.2, 2.9)
55–64	Perth	23.1	16.4	16.6	–0.5 (–2.0, 1.1)
	Newcastle	13.6	16.5	24.7	2.1 (1.0, 3.2)
65–69	Newcastle	8.2	11.9	24.0	2.5 (1.4, 3.6)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>22.2</b>	<b>17.6</b>	<b>16.1</b>	<b>–0.5 (–1.8, 0.8)</b>
	<b>Newcastle</b>	<b>13.3</b>	<b>17.1</b>	<b>21.2</b>	<b>1.7 (0.8, 2.6)</b>

(a) Age-standardised using Australian MONICA populations.

**Table A18: Proportion of patients who had undergone coronary bypass surgery before the event and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>					
<b>Men</b>					
35–44	Perth	2.6	5.1	1.4	–0.1 (–0.7, 0.4)
	Newcastle	0.9	6.2	5.4	0.5 (–0.4, 1.4)
45–54	Perth	4.8	5.2	6.2	0.3 (–0.2, 0.7)
	Newcastle	6.4	10.5	5.5	–0.1 (–0.7, 0.6)
55–64	Perth	7.0	9.9	9.1	0.3 (0.0, 0.7)
	Newcastle	8.4	12.2	15.0	1.1 (0.5, 1.7)
65–69	Newcastle	7.5	11.1	15.9	1.6 (0.9, 2.3)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>6.0</b>	<b>8.2</b>	<b>7.6</b>	<b>0.3 (0.0, 0.5)</b>
	<b>Newcastle</b>	<b>7.2</b>	<b>11.2</b>	<b>11.5</b>	<b>0.7 (0.3, 1.1)</b>
<b>Women</b>					
35–44	Perth	6.7	3.8	0.0	–0.9 (–2.6, 0.9)
	Newcastle	5.3	0.0	5.9	–0.3 (–2.3, 1.6)
45–54	Perth	3.7	6.3	4.8	0.2 (–0.8, 1.3)
	Newcastle	5.6	12.5	8.8	0.4 (–1.1, 1.9)
55–64	Perth	6.2	4.4	7.5	0.3 (–0.3, 0.9)
	Newcastle	6.0	5.8	11.0	1.0 (0.3, 1.8)
65–69	Newcastle	3.3	3.9	12.8	1.4 (0.7, 2.2)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>5.6</b>	<b>4.9</b>	<b>6.1</b>	<b>0.3 (–0.3, 0.8)</b>
	<b>Newcastle</b>	<b>5.8</b>	<b>7.1</b>	<b>9.9</b>	<b>0.8 (0.2, 1.4)</b>

(a) Age-standardised using Australian MONICA populations.

**Table A19: Proportion of patients who had undergone coronary angioplasty before the event and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>					
<b>Men</b>					
35–44	Perth	3.6	5.9	2.8	–0.1 (–0.8, 0.6)
	Newcastle	0.0	1.2	5.7	1.1 (–0.6, 2.8)
45–54	Perth	2.8	4.0	3.4	0.2 (–0.2, 0.6)
	Newcastle	0.0	0.6	2.6	0.8 (0.0, 1.5)
55–64	Perth	1.7	3.8	4.5	0.3 (0.0, 0.6)
	Newcastle	0.0	0.2	2.4	0.8 (0.3, 1.3)
65–69	Newcastle	0.0	0.7	2.1	0.4 (–0.1, 1.0)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>2.2</b>	<b>4.1</b>	<b>4.1</b>	<b>0.2 (0.0, 0.5)</b>
	<b>Newcastle</b>	<b>0.0</b>	<b>0.4</b>	<b>2.8</b>	<b>0.8 (0.4, 1.3)</b>
<b>Women</b>					
35–44	Perth	11.1	0.0	0.0	–1.1 (–2.6, 0.5)
	Newcastle	0.0	0.0	0.0	0.0 (0.0, 0.0)
45–54	Perth	6.3	1.1	3.8	–0.3 (–1.3, 0.7)
	Newcastle	0.0	2.1	2.1	0.7 (–1.1, 2.5)
55–64	Perth	1.1	1.8	3.6	0.3 (–0.1, 0.8)
	Newcastle	0.0	0.6	2.3	0.2 (–0.6, 0.9)
65–69	Newcastle	0.0	0.7	2.9	1.0 (0.1, 1.9)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>3.4</b>	<b>1.5</b>	<b>3.3</b>	<b>0.1 (–0.3, 0.5)</b>
	<b>Newcastle</b>	<b>0.0</b>	<b>1.0</b>	<b>2.0</b>	<b>0.3 (–0.4, 1.0)</b>

(a) Age-standardised using Australian MONICA populations.

# Appendix 4: Medical care during the coronary event

Table A20: Treatment with aspirin during the event and estimated average annual percentage change, 1985–93

Age group (years)	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
Per cent						
<b>Men</b>						
35–44	Perth	51.0	60.7	91.3	96.6	6.4 (5.2, 7.6)
	Newcastle	10.7	NR	78.9	91.7	10.6 (8.6, 12.7)
45–54	Perth	50.3	52.9	86.9	92.5	6.4 (5.6, 7.2)
	Newcastle	20.8	NR	77.1	86.0	7.9 (6.6, 9.3)
55–64	Perth	44.0	51.2	82.1	85.7	6.0 (5.3, 6.6)
	Newcastle	16.9	NR	71.5	78.9	8.3 (7.3, 9.4)
65–69	Newcastle	15.2	NR	59.3	79.6	8.4 (6.9, 9.8)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>46.4</b>	<b>52.6</b>	<b>84.2</b>	<b>88.6</b>	<b>6.1 (5.7, 6.6)</b>
	<b>Newcastle</b>	<b>17.4</b>	<b>NR</b>	<b>73.7</b>	<b>82.0</b>	<b>8.5 (7.7, 9.2)</b>
<b>Women</b>						
35–44	Perth	33.3	77.8	82.4	77.3	3.3 (–1.1, 7.7)
	Newcastle	50.0	NR	88.2	46.2	–4.1 (–12.4, 4.2)
45–54	Perth	41.7	43.8	77.9	85.3	6.6 (4.4, 8.8)
	Newcastle	25.0	NR	72.7	81.6	7.1 (3.9, 10.3)
55–64	Perth	41.9	43.6	80.2	77.4	5.6 (4.3, 6.9)
	Newcastle	20.6	NR	68.3	79.6	7.4 (5.7, 9.1)
65–69	Newcastle	13.7	NR	56.1	78.0	8.7 (6.9, 10.6)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>41.1</b>	<b>46.8</b>	<b>79.8</b>	<b>79.6</b>	<b>5.7 (4.6, 6.8)</b>
	<b>Newcastle</b>	<b>24.5</b>	<b>NR</b>	<b>71.3</b>	<b>77.1</b>	<b>7.0 (5.5, 8.5)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

**Table A21: Treatment with ACE inhibitors during the event and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>						
<b>Men</b>						
35–44	Perth	0.0	1.9	5.1	30.6	4.9 (3.8, 6.0)
	Newcastle	3.6	NR	15.8	29.2	4.3 (2.1, 6.5)
45–54	Perth	2.0	2.4	8.1	35.5	5.3 (4.6, 6.0)
	Newcastle	0.0	NR	17.3	32.8	4.7 (3.3, 6.1)
55–64	Perth	2.5	2.9	10.2	30.9	4.6 (4.1, 5.1)
	Newcastle	2.9	NR	23.9	40.4	5.5 (4.4, 6.5)
65–69	Newcastle	3.8	NR	23.2	42.3	5.5 (4.0, 6.9)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>2.1</b>	<b>2.6</b>	<b>9.2</b>	<b>32.1</b>	<b>4.9 (4.5, 5.2)</b>
	<b>Newcastle</b>	<b>2.2</b>	<b>NR</b>	<b>21.4</b>	<b>37.3</b>	<b>5.1 (4.3, 5.9)</b>
<b>Women</b>						
35–44	Perth	20.0	22.2	0.0	22.7	0.9 (–2.9, 4.7)
	Newcastle	0.0	NR	5.9	23.1	5.6 (–0.1, 11.3)
45–54	Perth	0.0	2.2	8.6	38.0	6.1 (4.4, 7.9)
	Newcastle	0.0	NR	18.2	36.2	5.5 (2.5, 8.5)
55–64	Perth	1.7	5.8	19.4	37.2	5.8 (4.7, 7.0)
	Newcastle	4.4	NR	26.8	33.6	3.8 (2.2, 5.5)
65–69	Newcastle	7.8	NR	27.3	46.3	5.7 (3.8, 7.6)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>2.9</b>	<b>6.3</b>	<b>14.7</b>	<b>36.1</b>	<b>5.6 (4.7, 6.5)</b>
	<b>Newcastle</b>	<b>2.8</b>	<b>NR</b>	<b>22.6</b>	<b>33.3</b>	<b>4.2 (2.8, 5.6)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.



**Table A22: Treatment with thrombolytic therapy during the event and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>						
<b>Men</b>						
35–44	Perth	16.3	20.7	38.6	57.8	6.2 (4.6, 7.8)
	Newcastle	0.0	NR	46.1	57.5	7.9 (5.2, 10.5)
45–54	Perth	7.2	20.2	41.0	53.0	6.2 (5.2, 7.1)
	Newcastle	1.3	NR	42.3	47.4	5.6 (4.0, 7.2)
55–64	Perth	9.5	17.0	31.6	40.7	4.3 (3.6, 5.0)
	Newcastle	0.0	NR	31.3	38.3	5.1 (5.0, 6.2)
65–69	Newcastle	0.0	NR	24.0	29.5	3.6 (2.2, 4.9)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>9.5</b>	<b>18.3</b>	<b>34.8</b>	<b>45.6</b>	<b>5.1 (4.6, 5.6)</b>
	<b>Newcastle</b>	<b>0.4</b>	<b>NR</b>	<b>35.6</b>	<b>42.5</b>	<b>5.6 (4.7, 6.4)</b>
<b>Women</b>						
35–44	Perth	0.0	33.3	29.4	36.4	3.4 (–1.2, 8.0)
	Newcastle	0.0	NR	64.7	23.1	–1.5 (–10.5, 7.5)
45–54	Perth	8.3	10.4	33.7	58.7	7.7 (5.5, 10.0)
	Newcastle	0.0	NR	40.9	50.0	5.9 (2.4, 9.4)
55–64	Perth	1.6	11.5	27.2	37.8	4.8 (3.6, 6.0)
	Newcastle	0.0	NR	27.4	33.6	4.0 (2.4, 5.7)
65–69	Newcastle	0.0	NR	20.5	32.7	4.2 (2.5, 5.9)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>3.3</b>	<b>13.2</b>	<b>29.2</b>	<b>43.4</b>	<b>5.4 (4.4, 6.5)</b>
	<b>Newcastle</b>	<b>0.0</b>	<b>NR</b>	<b>34.5</b>	<b>37.1</b>	<b>4.2 (2.8, 5.7)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

**Table A23: Treatment with inotropic drugs during the event and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>						
<b>Men</b>						
35–44	Perth	6.3	8.0	12.1	6.6	–0.3 (–1.3, 0.7)
	Newcastle	17.9	NR	13.2	6.9	–1.2 (–3.1, 0.6)
45–54	Perth	12.8	16.0	14.3	8.0	–1.0 (–1.7, –0.3)
	Newcastle	13.0	NR	16.7	18.5	0.8 (–0.5, 2.1)
55–64	Perth	25.5	24.3	23.2	19.6	–0.7 (–1.3, 0.0)
	Newcastle	32.0	NR	26.4	25.7	–0.9 (–2.0, 0.2)
65–69	Newcastle	46.8	NR	39.0	34.6	–1.4 (–3.0, 0.2)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>20.3</b>	<b>20.6</b>	<b>19.7</b>	<b>15.3</b>	<b>–0.7 (–1.2, –0.3)</b>
	<b>Newcastle</b>	<b>25.5</b>	<b>NR</b>	<b>22.5</b>	<b>22.0</b>	<b>–0.4 (–1.2, 0.4)</b>
<b>Women</b>						
35–44	Perth	50.0	22.2	17.6	10.0	–4.1 (–8.1, –0.1)
	Newcastle	0.0	NR	11.8	23.1	3.8 (–2.7, 10.3)
45–54	Perth	13.0	25.0	18.1	19.2	–0.3 (–2.4, 1.8)
	Newcastle	12.5	NR	22.7	25.0	1.7 (–1.5, 4.8)
55–64	Perth	27.4	31.9	33.9	31.8	0.2 (–1.2, 1.6)
	Newcastle	47.1	NR	32.9	32.6	–2.0 (–3.9, –0.2)
65–69	Newcastle	56.6	NR	44.7	40.9	–2.5 (–4.6, –0.5)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>25.6</b>	<b>29.1</b>	<b>28.1</b>	<b>26.4</b>	<b>–0.2 (–1.3, 0.9)</b>
	<b>Newcastle</b>	<b>33.4</b>	<b>NR</b>	<b>28.2</b>	<b>29.7</b>	<b>–1.1 (–2.6, 0.5)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

**Table A24: Treatment with beta blockers during the event and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>						
<b>Men</b>						
35–44	Perth	68.0	76.1	82.6	91.4	3.2 (2.0, 4.5)
	Newcastle	42.9	NR	46.1	72.6	5.0 (2.2, 7.8)
45–54	Perth	69.3	72.3	80.9	87.2	2.6 (1.8, 3.5)
	Newcastle	48.1	NR	46.5	56.7	1.8 (0.0, 3.5)
55–64	Perth	54.2	59.8	71.1	72.7	2.2 (1.5, 3.0)
	Newcastle	44.2	NR	42.3	49.0	1.1 (–0.1, 2.4)
65–69	Newcastle	31.6	NR	32.9	44.7	2.1 (0.5, 3.7)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>59.6</b>	<b>64.7</b>	<b>74.9</b>	<b>78.3</b>	<b>2.5 (2.0, 3.0)</b>
	<b>Newcastle</b>	<b>45.1</b>	<b>NR</b>	<b>43.8</b>	<b>53.3</b>	<b>1.7 (0.8, 2.7)</b>
<b>Women</b>						
35–44	Perth	50.0	66.7	76.5	63.6	1.0 (–3.8, 5.9)
	Newcastle	50.0	NR	47.1	38.5	–0.6 (–9.7, 8.4)
45–54	Perth	62.5	62.5	76.7	66.7	0.4 (–2.0, 2.7)
	Newcastle	43.8	NR	52.3	55.1	1.1 (–2.6, 4.9)
55–64	Perth	43.5	48.2	61.3	66.1	3.1 (1.6, 4.5)
	Newcastle	36.8	NR	37.2	45.1	1.5 (–0.4, 3.4)
65–69	Newcastle	29.4	NR	30.3	44.3	2.5 (0.5, 4.5)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>49.3</b>	<b>53.8</b>	<b>66.9</b>	<b>66.0</b>	<b>2.3 (1.1, 3.5)</b>
	<b>Newcastle</b>	<b>39.9</b>	<b>NR</b>	<b>42.2</b>	<b>47.3</b>	<b>1.4 (–0.3, 3.1)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

**Table A25: Treatment with calcium channel blockers during the event and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>						
<b>Men</b>						
35–44	Perth	44.9	54.9	44.0	37.6	–2.2 (–3.9, –0.5)
	Newcastle	7.1	NR	27.6	27.8	2.0 (–0.4, 4.5)
45–54	Perth	57.5	54.8	43.7	37.1	–3.3 (–4.3, –2.2)
	Newcastle	19.5	NR	28.8	38.7	2.7 (1.1, 4.3)
55–64	Perth	52.5	54.5	49.4	38.4	–2.6 (–3.4, –1.9)
	Newcastle	23.8	NR	38.9	41.5	2.6 (1.3, 3.8)
65–69	Newcastle	21.5	NR	37.0	47.4	3.8 (2.3, 5.4)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>53.2</b>	<b>54.6</b>	<b>57.4</b>	<b>38.0</b>	<b>–2.8 (–3.4, –2.2)</b>
	<b>Newcastle</b>	<b>21.1</b>	<b>NR</b>	<b>35.1</b>	<b>39.5</b>	<b>2.5 (1.6, 3.4)</b>
<b>Women</b>						
35–44	Perth	50.0	66.7	52.9	63.6	1.5 (–3.6, 6.5)
	Newcastle	0.0	NR	23.5	15.4	1.1 (–6.0, 8.2)
45–54	Perth	62.5	47.9	44.2	38.7	–3.2 (–5.7, –0.6)
	Newcastle	12.5	NR	40.9	49.0	4.3 (0.7, 7.8)
55–64	Perth	57.4	53.9	50.2	39.1	–2.8 (–4.3, –1.4)
	Newcastle	29.4	NR	41.5	43.8	2.0 (0.1, 3.9)
65–69	Newcastle	15.7	NR	36.4	47.0	4.5 (2.5, 6.5)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>58.1</b>	<b>53.5</b>	<b>48.8</b>	<b>41.2</b>	<b>–2.7 (–3.9, –1.4)</b>
	<b>Newcastle</b>	<b>22.1</b>	<b>NR</b>	<b>39.7</b>	<b>42.6</b>	<b>2.4 (0.8, 4.1)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

**Table A26: Treatment with other antiarrhythmic drugs during the event and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>						
<b>Men</b>						
35–44	Perth	51.0	32.7	25.5	34.1	–1.2 (–2.8, 0.4)
	Newcastle	25.0	NR	21.1	19.4	–0.7 (–3.1, 1.7)
45–54	Perth	44.4	41.2	31.0	27.8	–2.3 (–3.3, –1.4)
	Newcastle	26.0	NR	26.1	31.5	1.2 (–0.4, 2.7)
55–64	Perth	41.5	42.1	31.0	32.6	–1.4 (–2.1, –0.6)
	Newcastle	30.1	NR	25.8	31.5	0.4 (–0.8, 1.5)
65–69	Newcastle	43.0	NR	27.6	27.1	–1.8 (–3.3, –0.3)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>43.2</b>	<b>41.0</b>	<b>30.5</b>	<b>31.4</b>	<b>–1.6 (–2.2, –1.1)</b>
	<b>Newcastle</b>	<b>28.5</b>	<b>NR</b>	<b>25.5</b>	<b>30.4</b>	<b>0.5 (–0.4, 1.4)</b>
<b>Women</b>						
35–44	Perth	33.3	11.1	41.2	31.8	1.9 (–2.9, 6.6)
	Newcastle	50.0	NR	29.4	53.8	2.1 (–6.9, 11.0)
45–54	Perth	50.0	52.1	24.4	33.3	–2.5 (–4.9, –0.1)
	Newcastle	6.3	NR	25.0	30.6	2.4 (–0.8, 5.6)
55–64	Perth	37.1	40.6	35.1	40.0	–0.6 (–2.0, 0.9)
	Newcastle	38.2	NR	26.8	30.3	–0.6 (–2.4, 1.2)
65–69	Newcastle	38.5	NR	34.1	32.9	–0.5 (–2.5, 1.5)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>40.3</b>	<b>53.8</b>	<b>48.8</b>	<b>41.2</b>	<b>–2.7 (–3.9, –1.4)</b>
	<b>Newcastle</b>	<b>30.6</b>	<b>NR</b>	<b>26.6</b>	<b>32.6</b>	<b>0.1 (–1.5, 1.6)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

**Table A27: Treatment with anticoagulants during the event and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>						
<b>Men</b>						
35–44	Perth	96.0	92.9	79.9	92.5	0.0 (–1.1, 1.1)
	Newcastle	75.0	NR	85.5	87.7	1.7 (–0.3, 3.8)
45–54	Perth	91.5	89.7	82.7	88.3	–0.2 (–0.9, 0.5)
	Newcastle	77.9	NR	85.9	86.8	1.1 (–0.1, 2.3)
55–64	Perth	84.2	87.4	79.3	80.6	–0.8 (–1.4, –0.2)
	Newcastle	79.7	NR	83.1	84.6	0.8 (–0.2, 1.7)
65–69	Newcastle	65.8	NR	68.7	82.5	2.8 (1.4, 4.3)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>87.3</b>	<b>88.5</b>	<b>80.3</b>	<b>83.8</b>	<b>–0.5 (–1.0, –0.1)</b>
	<b>Newcastle</b>	<b>78.8</b>	<b>NR</b>	<b>84.1</b>	<b>85.5</b>	<b>1.0 (0.3, 1.7)</b>
<b>Women</b>						
35–44	Perth	83.3	100.0	82.4	81.8	–0.7 (–4.4, 2.9)
	Newcastle	100.0	NR	88.2	100.0	0.2 (–4.2, 4.6)
45–54	Perth	87.5	87.5	79.1	80.0	–0.9 (–2.9, 1.1)
	Newcastle	68.8	NR	79.5	88.0	3.3 (0.5, 6.1)
55–64	Perth	75.8	83.0	79.8	75.2	–0.6 (–1.8, 0.6)
	Newcastle	76.5	NR	76.2	78.2	0.4 (–1.3, 2.0)
65–69	Newcastle	57.7	NR	71.2	84.7	4.0 (2.2, 5.7)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>79.7</b>	<b>85.8</b>	<b>79.9</b>	<b>77.1</b>	<b>–0.7 (–1.7, 0.3)</b>
	<b>Newcastle</b>	<b>76.5</b>	<b>NR</b>	<b>78.2</b>	<b>82.9</b>	<b>1.0 (–0.4, 2.3)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

**Table A28: Treatment with diuretics during the event and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>						
<b>Men</b>						
35–44	Perth	18.4	19.5	23.4	23.1	0.6 (–0.9, 2.0)
	Newcastle	21.4	NR	22.4	12.5	–1.7 (–4.0, 0.5)
45–54	Perth	32.7	29.9	25.5	24.5	–0.9 (–1.8, 0.0)
	Newcastle	32.5	NR	21.8	28.9	–0.1 (–1.7, 1.4)
55–64	Perth	51.9	43.4	40.6	39.9	–1.2 (–1.9, –0.4)
	Newcastle	41.0	NR	32.9	36.6	–0.5 (–1.7, 0.7)
65–69	Newcastle	54.4	NR	45.1	42.9	–1.4 (–3.0, 0.2)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>43.6</b>	<b>37.6</b>	<b>34.9</b>	<b>34.2</b>	<b>–0.9 (–1.4, –0.4)</b>
	<b>Newcastle</b>	<b>36.9</b>	<b>NR</b>	<b>28.9</b>	<b>32.4</b>	<b>–0.5 (–1.4, 0.4)</b>
<b>Women</b>						
35–44	Perth	50.0	33.3	23.5	31.8	–2.0 (–6.8, 2.8)
	Newcastle	0.0	NR	11.8	38.5	7.9 (0.9, 14.9)
45–54	Perth	45.8	31.3	39.5	37.3	0.2 (–2.3, 2.7)
	Newcastle	25.0	NR	27.3	37.5	2.1 (–1.4, 5.6)
55–64	Perth	61.3	56.4	54.3	53.0	–0.6 (–2.1, 0.8)
	Newcastle	52.9	NR	42.7	54.2	0.4 (–1.6, 2.3)
65–69	Newcastle	67.3	NR	47.0	53.0	–1.7 (–3.8, 0.4)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>56.1</b>	<b>47.4</b>	<b>47.5</b>	<b>46.8</b>	<b>–0.5 (–1.7, 0.7)</b>
	<b>Newcastle</b>	<b>40.5</b>	<b>NR</b>	<b>35.7</b>	<b>48.2</b>	<b>1.0 (–0.7, 2.6)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

**Table A29: Treatment with nitrates during the event and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>						
<b>Men</b>						
35–44	Perth	93.9	88.5	85.8	93.6	0.6 (–0.5, 1.6)
	Newcastle	53.6	NR	73.7	87.7	4.5 (2.2, 6.9)
45–54	Perth	85.6	85.3	85.9	91.9	1.1 (0.4, 1.8)
	Newcastle	77.9	NR	69.9	87.9	2.1 (0.8, 3.5)
55–64	Perth	88.4	84.1	85.8	88.1	0.2 (–0.3, 0.8)
	Newcastle	76.7	NR	72.8	83.1	1.3 (0.3, 2.4)
65–69	Newcastle	58.2	NR	72.0	86.6	3.9 (2.5, 5.3)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>88.2</b>	<b>84.9</b>	<b>85.8</b>	<b>89.6</b>	<b>0.5 (0.1, 0.9)</b>
	<b>Newcastle</b>	<b>75.0</b>	<b>NR</b>	<b>72.1</b>	<b>84.9</b>	<b>1.9 (1.1, 2.7)</b>
<b>Women</b>						
35–44	Perth	66.7	100.0	88.2	81.8	–0.2 (–3.8, 3.5)
	Newcastle	100.0	NR	58.8	84.6	1.8 (–6.3, 10.0)
45–54	Perth	87.5	95.8	81.2	85.3	–1.1 (–2.9, 0.6)
	Newcastle	75.0	NR	65.9	87.8	2.9 (–0.2, 6.0)
55–64	Perth	83.9	81.1	88.5	80.5	–0.2 (–1.3, 0.9)
	Newcastle	67.6	NR	74.4	77.4	1.4 (–0.3, 3.1)
65–69	Newcastle	69.2	NR	68.9	83.3	2.0 (0.2, 3.8)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>83.3</b>	<b>86.8</b>	<b>86.5</b>	<b>82.0</b>	<b>–0.4 (–1.3, 0.5)</b>
	<b>Newcastle</b>	<b>72.6</b>	<b>NR</b>	<b>70.7</b>	<b>80.9</b>	<b>1.7 (0.3, 3.2)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.



**Table A30: Proportion of patients who underwent coronary angiography during the event and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>						
<b>Men</b>						
35–44	Perth	22.0	28.3	26.6	36.2	1.7 (0.1, 3.3)
	Newcastle	0.0	NR	14.7	5.3	0.2 (–1.4, 1.9)
45–54	Perth	17.0	21.7	22.8	34.0	2.4 (1.5, 3.3)
	Newcastle	0.0	NR	5.7	15.3	2.5 (1.5, 3.5)
55–64	Perth	11.2	15.8	17.6	24.0	1.7 (1.1, 2.2)
	Newcastle	0.0	NR	5.6	11.5	1.8 (1.2, 2.5)
65–69	Newcastle	0.0	NR	6.2	10.3	1.7 (0.8, 2.5)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>13.8</b>	<b>18.5</b>	<b>19.8</b>	<b>27.9</b>	<b>1.9 (1.4, 2.4)</b>
	<b>Newcastle</b>	<b>0.0</b>	<b>NR</b>	<b>6.5</b>	<b>12.0</b>	<b>1.9 (1.4, 2.4)</b>
<b>Women</b>						
35–44	Perth	0.0	22.2	29.4	50.0	6.7 (2.2, 11.3)
	Newcastle	0.0	NR	17.6	15.4	2.1 (–4.5, 8.6)
45–54	Perth	25.0	22.9	20.9	28.0	0.6 (–1.6, 2.8)
	Newcastle	0.0	NR	4.4	16.0	2.1 (0.0, 4.2)
55–64	Perth	4.8	12.7	17.8	22.6	2.1 (1.0, 3.2)
	Newcastle	0.0	NR	9.6	9.2	1.2 (0.1, 2.2)
65–69	Newcastle	0.0	NR	7.3	12.5	2.0 (0.9, 3.2)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>9.9</b>	<b>16.4</b>	<b>19.7</b>	<b>26.6</b>	<b>2.0 (1.0, 3.0)</b>
	<b>Newcastle</b>	<b>0.0</b>	<b>NR</b>	<b>8.9</b>	<b>11.6</b>	<b>1.4 (0.5, 2.3)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

**Table A31: Proportion of patients who underwent coronary bypass surgery during the event and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>						
<b>Men</b>						
35–44	Perth	2.0	2.7	1.6	3.4	0.1 (–0.4, 0.6)
	Newcastle	0.0	NR	0.0	0.0	0.0 (0.0, 0.0)
45–54	Perth	3.9	2.2	2.4	3.7	0.2 (–0.2, 0.5)
	Newcastle	0.0	NR	0.6	0.8	0.1 (–0.1, 0.4)
55–64	Perth	2.1	3.7	4.9	4.7	0.3 (0.0, 0.6)
	Newcastle	0.0	NR	0.5	1.6	0.3 (0.1, 0.5)
65–69	Newcastle	0.0	NR	1.1	1.1	0.2 (–0.2, 0.5)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>2.6</b>	<b>3.2</b>	<b>4.0</b>	<b>4.3</b>	<b>0.2 (0.0, 0.4)</b>
	<b>Newcastle</b>	<b>0.0</b>	<b>NR</b>	<b>0.5</b>	<b>1.3</b>	<b>0.2 (0.1, 0.4)</b>
<b>Women</b>						
35–44	Perth	0.0	0.0	0.0	0.0	0.0 (0.0, 0.0)
	Newcastle	0.0	NR	0.0	0.0	0.0 (0.0, 0.0)
45–54	Perth	4.2	0.0	3.5	4.0	0.2 (–0.7, 1.1)
	Newcastle	0.0	NR	0.0	0.0	0.0 (0.0, 0.0)
55–64	Perth	0.0	2.4	5.0	3.9	0.6 (0.0, 1.1)
	Newcastle	0.0	NR	0.0	1.9	0.3 (0.0, 0.6)
65–69	Newcastle	0.0	NR	2.2	2.0	0.3 (–0.2, 0.9)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>1.1</b>	<b>1.5</b>	<b>4.1</b>	<b>3.6</b>	<b>0.5 (0.0, 0.9)</b>
	<b>Newcastle</b>	<b>0.0</b>	<b>NR</b>	<b>0.0</b>	<b>1.2</b>	<b>0.2 (0.0, 0.5)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

**Table A32: Proportion of patients who underwent coronary angioplasty during the event and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>						
<b>Men</b>						
35–44	Perth	12.0	6.2	8.3	14.5	1.1 (0.0, 2.1)
	Newcastle	0.0	NR	0.0	0.0	0.0 (0.0, 0.0)
45–54	Perth	11.8	5.1	7.8	11.2	0.5 (–0.1, 1.1)
	Newcastle	0.0	NR	0.0	1.3	0.3 (0.0, 0.6)
55–64	Perth	4.9	4.6	7.2	6.7	0.3 (0.0, 0.7)
	Newcastle	0.0	NR	0.0	0.0	0.0 (0.0, 0.0)
65–69	Newcastle	0.0	NR	0.0	0.4	0.1 (0.0, 0.2)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>7.4</b>	<b>4.9</b>	<b>7.5</b>	<b>8.6</b>	<b>0.5 (0.2, 0.8)</b>
	<b>Newcastle</b>	<b>0.0</b>	<b>NR</b>	<b>0.0</b>	<b>0.4</b>	<b>0.1 (0.0, 0.2)</b>
<b>Women</b>						
35–44	Perth	0.0	11.1	12.5	22.7	2.9 (–0.7, 6.5)
	Newcastle	0.0	NR	0.0	0.0	0.0 (0.0, 0.0)
45–54	Perth	4.2	8.3	8.0	10.7	0.6 (–0.9, 2.0)
	Newcastle	0.0	NR	0.0	0.0	0.0 (0.0, 0.0)
55–64	Perth	3.2	6.8	3.2	6.1	0.2 (–0.5, 0.8)
	Newcastle	0.0	NR	0.0	0.7	0.1 (–0.1, 0.3)
65–69	Newcastle	0.0	NR	0.0	0.0	0.0 (0.0, 0.0)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>3.2</b>	<b>7.6</b>	<b>5.4</b>	<b>8.9</b>	<b>0.4 (–0.2, 1.0)</b>
	<b>Newcastle</b>	<b>0.0</b>	<b>NR</b>	<b>0.0</b>	<b>0.4</b>	<b>0.1 (0.0, 0.2)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

# Appendix 5: Drugs prescribed at discharge

Table A33: Treatment with aspirin at discharge and estimated average annual percentage change, 1985–93

Age group (years)	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
Per cent						
<b>Men</b>						
35–44	Perth	28.6	54.5	90.4	93.9	8.1 (6.8, 9.4)
	Newcastle	4.5	NR	78.9	92.6	10.9 (8.8, 13.1)
45–54	Perth	33.6	47.0	83.4	88.9	7.6 (6.7, 8.5)
	Newcastle	17.9	NR	79.3	88.8	8.8 (7.5, 10.2)
55–64	Perth	30.9	51.1	84.6	87.2	7.3 (6.6, 8.0)
	Newcastle	12.9	NR	72.5	78.8	8.6 (7.4, 9.8)
65–69	Newcastle	17.0	NR	62.6	79.5	7.4 (5.7, 9.1)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>31.4</b>	<b>50.3</b>	<b>84.8</b>	<b>88.3</b>	<b>7.5 (7.0, 8.0)</b>
	<b>Newcastle</b>	<b>13.5</b>	<b>NR</b>	<b>74.9</b>	<b>82.8</b>	<b>8.9 (8.1, 9.7)</b>
<b>Women</b>						
35–44	Perth	33.3	33.3	80.0	94.4	10.5 (6.2, 14.8)
	Newcastle	0.0	NR	68.8	54.5	4.0 (–5.1, 13.0)
45–54	Perth	35.0	47.4	82.9	93.4	8.3 (6.1, 10.6)
	Newcastle	8.3	NR	66.7	81.4	8.4 (4.8, 11.9)
55–64	Perth	38.6	46.2	75.0	88.1	7.0 (5.5, 8.5)
	Newcastle	13.7	NR	69.8	85.7	9.0 (7.2, 10.8)
65–69	Newcastle	8.8	NR	57.3	74.8	9.0 (6.8, 11.1)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>37.2</b>	<b>45.3</b>	<b>77.6</b>	<b>90.2</b>	<b>7.6 (6.4, 8.8)</b>
	<b>Newcastle</b>	<b>11.0</b>	<b>NR</b>	<b>68.9</b>	<b>81.7</b>	<b>8.7 (7.1, 10.3)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

**Table A34: Treatment with ACE inhibitors at discharge and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>						
<b>Men</b>						
35–44	Perth	0.0	1.0	4.9	25.3	4.3 (3.2, 5.3)
	Newcastle	0.0	NR	14.1	25.0	4.0 (1.7, 6.3)
45–54	Perth	1.5	1.7	7.2	30.8	4.7 (4.0, 5.5)
	Newcastle	0.0	NR	15.9	27.8	3.8 (2.4, 5.2)
55–64	Perth	0.5	1.2	7.1	30.1	4.8 (4.3, 5.4)
	Newcastle	2.7	NR	19.5	36.4	4.8 (3.7, 5.9)
65–69	Newcastle	1.9	NR	21.9	37.8	5.1 (3.5, 6.8)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>0.7</b>	<b>1.3</b>	<b>6.9</b>	<b>29.9</b>	<b>4.7 (4.3, 5.1)</b>
	<b>Newcastle</b>	<b>1.7</b>	<b>NR</b>	<b>18.0</b>	<b>33.0</b>	<b>4.4 (3.6, 5.2)</b>
<b>Women</b>						
35–44	Perth	0.0	0.0	0.0	16.7	3.2 (0.3, 6.0)
	Newcastle	0.0	NR	6.3	27.3	6.2 (0.2, 12.2)
45–54	Perth	0.0	0.0	7.6	35.7	6.1 (4.2, 8.1)
	Newcastle	0.0	NR	16.7	39.0	5.9 (2.5, 9.3)
55–64	Perth	0.0	1.9	14.9	37.8	6.3 (5.0, 7.6)
	Newcastle	2.0	NR	23.8	29.3	3.7 (1.9, 5.5)
65–69	Newcastle	0.0	NR	27.0	40.7	5.7 (3.6, 7.9)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>0.0</b>	<b>1.2</b>	<b>11.5</b>	<b>35.3</b>	<b>6.1 (5.0, 7.1)</b>
	<b>Newcastle</b>	<b>1.3</b>	<b>NR</b>	<b>20.3</b>	<b>31.8</b>	<b>4.2 (2.7, 5.8)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

**Table A35: Treatment with inotropic drugs at discharge and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>						
<b>Men</b>						
35–44	Perth	2.0	1.9	2.4	0.6	–0.2 (–0.7, 0.2)
	Newcastle	4.5	NR	7.0	1.5	–0.5 (–1.8, 0.8)
45–54	Perth	2.9	4.1	4.0	1.6	–0.3 (–0.7, 0.0)
	Newcastle	10.4	NR	7.6	8.1	–0.3 (–1.3, 0.7)
55–64	Perth	7.0	5.9	6.5	3.1	–0.5 (–0.9, –0.1)
	Newcastle	21.1	NR	13.1	11.2	–1.3 (–2.2, –0.3)
65–69	Newcastle	30.2	NR	26.2	19.4	–1.5 (–3.2, 0.1)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>5.4</b>	<b>5.0</b>	<b>5.5</b>	<b>2.5</b>	<b>–0.4 (–0.7, –0.2)</b>
	<b>Newcastle</b>	<b>16.7</b>	<b>NR</b>	<b>11.0</b>	<b>9.5</b>	<b>–0.9 (–1.5, –0.2)</b>
<b>Women</b>						
35–44	Perth	0.0	11.1	0.0	5.6	–0.4 (–2.9, 2.1)
	Newcastle	0.0	NR	6.3	9.1	1.7 (–2.9, 6.4)
45–54	Perth	5.0	0.0	7.1	0.0	–0.5 (–1.5, 0.5)
	Newcastle	0.0	NR	9.5	7.3	0.7 (–1.5, 2.9)
55–64	Perth	2.3	6.4	9.3	6.3	0.1 (–0.8, 1.0)
	Newcastle	33.3	NR	16.7	18.8	–2.1 (–3.9, –0.4)
65–69	Newcastle	38.2	NR	28.1	27.6	–1.7 (–3.9, 0.6)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>2.8</b>	<b>5.1</b>	<b>7.9</b>	<b>4.5</b>	<b>–0.1 (–0.8, 0.6)</b>
	<b>Newcastle</b>	<b>21.2</b>	<b>NR</b>	<b>13.8</b>	<b>14.8</b>	<b>–1.4 (–2.8, 0.0)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

**Table A36: Treatment with beta blockers at discharge and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>						
<b>Men</b>						
35–44	Perth	63.3	72.8	83.3	87.9	3.4 (2.1, 4.8)
	Newcastle	50.0	NR	46.5	66.2	4.1 (1.1, 7.2)
45–54	Perth	61.3	67.9	76.8	87.6	3.6 (2.7, 4.5)
	Newcastle	53.7	NR	44.1	52.4	0.6 (–1.2, 2.4)
55–64	Perth	52.2	57.6	69.1	77.7	3.4 (2.6, 4.2)
	Newcastle	38.8	NR	40.9	47.4	1.6 (0.3, 3.0)
65–69	Newcastle	37.7	NR	33.7	39.4	0.7 (–1.1, 2.6)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>55.7</b>	<b>61.8</b>	<b>72.5</b>	<b>81.3</b>	<b>3.4 (2.9, 4.0)</b>
	<b>Newcastle</b>	<b>43.9</b>	<b>NR</b>	<b>42.3</b>	<b>50.5</b>	<b>1.6 (0.5, 2.6)</b>
<b>Women</b>						
35–44	Perth	100.0	44.4	66.7	72.2	1.4 (–4.3, 7.0)
	Newcastle	0.0	NR	37.5	36.4	1.5 (–7.3, 10.3)
45–54	Perth	60.0	71.1	70.0	62.3	–0.3 (–3.1, 2.4)
	Newcastle	50.0	NR	54.8	55.8	0.3 (–3.8, 4.5)
55–64	Perth	36.4	50.5	55.2	69.4	3.9 (2.2, 5.6)
	Newcastle	33.3	NR	37.3	42.7	1.6 (–0.6, 3.7)
65–69	Newcastle	26.5	NR	32.6	39.8	1.7 (–0.7, 4.0)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>48.6</b>	<b>55.5</b>	<b>60.3</b>	<b>67.7</b>	<b>2.7 (1.2, 4.1)</b>
	<b>Newcastle</b>	<b>34.9</b>	<b>NR</b>	<b>42.1</b>	<b>45.7</b>	<b>1.3 (–0.5, 3.2)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

**Table A37: Treatment with calcium channel blockers at discharge and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>						
<b>Men</b>						
35–44	Perth	24.5	29.1	23.4	18.9	–1.2 (–2.7, 0.3)
	Newcastle	9.1	NR	25.4	25.0	1.2 (–1.4, 3.9)
45–54	Perth	24.8	27.6	25.8	17.4	–1.6 (–2.5, –0.6)
	Newcastle	13.4	NR	24.1	32.7	2.5 (0.9, 4.1)
55–64	Perth	29.6	33.2	34.7	25.2	–1.1 (–1.9, –0.3)
	Newcastle	17.0	NR	35.2	38.8	2.9 (1.7, 4.2)
65–69	Newcastle	22.6	NR	36.4	46.1	3.5 (1.6, 5.3)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>27.8</b>	<b>31.3</b>	<b>31.3</b>	<b>22.5</b>	<b>–1.3 (–1.8, –0.7)</b>
	<b>Newcastle</b>	<b>15.3</b>	<b>NR</b>	<b>31.3</b>	<b>35.9</b>	<b>2.6 (1.7, 3.6)</b>
<b>Women</b>						
35–44	Perth	33.3	66.7	46.7	50.0	–0.3 (–6.3, 5.7)
	Newcastle	0.0	NR	25.0	18.2	0.7 (–6.8, 8.2)
45–54	Perth	45.0	21.1	30.0	29.5	–0.6 (–3.2, 2.0)
	Newcastle	8.3	NR	40.5	44.2	3.7 (–0.3, 7.7)
55–64	Perth	43.2	35.8	39.4	26.3	–2.2 (–3.9, –0.5)
	Newcastle	13.7	NR	42.9	42.7	3.6 (1.4, 5.7)
65–69	Newcastle	14.7	NR	40.4	43.1	3.4 (1.0, 5.7)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>42.8</b>	<b>34.6</b>	<b>37.5</b>	<b>29.3</b>	<b>–1.7 (–3.1, –0.3)</b>
	<b>Newcastle</b>	<b>11.0</b>	<b>NR</b>	<b>40.6</b>	<b>40.9</b>	<b>3.5 (1.7, 5.3)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.



**Table A38: Treatment with other antiarrhythmic drugs at discharge and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>						
<b>Men</b>						
35–44	Perth	2.0	2.9	1.8	0.0	–0.4 (–0.9, 0.0)
	Newcastle	4.5	NR	2.8	0.0	–0.7 (–1.5, 0.2)
45–54	Perth	4.4	4.5	1.3	0.8	–0.5 (–0.8, –0.2)
	Newcastle	3.0	NR	2.8	1.9	–0.2 (–0.7, 0.4)
55–64	Perth	4.8	3.1	1.1	2.2	–0.3 (–0.5, 0.0)
	Newcastle	4.1	NR	6.0	5.6	0.3 (–0.4, 0.9)
65–69	Newcastle	17.0	NR	5.3	2.3	–1.9 (–2.7, –1.1)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>4.4</b>	<b>3.4</b>	<b>1.2</b>	<b>1.6</b>	<b>–0.4 (–0.6, –0.2)</b>
	<b>Newcastle</b>	<b>3.8</b>	<b>NR</b>	<b>4.9</b>	<b>4.1</b>	<b>0.0 (–0.4, 0.4)</b>
<b>Women</b>						
35–44	Perth	0.0	0.0	0.0	0.0	0.0 (0.0, 0.0)
	Newcastle	0.0	NR	0.0	0.0	0.0 (0.0, 0.0)
45–54	Perth	0.0	0.0	0.0	1.6	0.3 (–0.2, 0.7)
	Newcastle	0.0	NR	2.4	0.0	–0.2 (–1.0, 0.7)
55–64	Perth	0.0	0.9	3.1	1.3	0.0 (–0.5, 0.5)
	Newcastle	9.8	NR	2.4	5.2	–0.6 (–1.5, 0.3)
65–69	Newcastle	8.8	NR	7.9	6.5	–0.4 (–1.7, 0.9)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>0.0</b>	<b>0.6</b>	<b>2.0</b>	<b>1.2</b>	<b>0.1 (–0.3, 0.4)</b>
	<b>Newcastle</b>	<b>6.2</b>	<b>NR</b>	<b>2.2</b>	<b>3.3</b>	<b>–0.5 (–1.2, 0.2)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

**Table A39: Treatment with anticoagulants at discharge and estimated average annual percentage change, 1985–93**

Age group (years)	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
<b>Per cent</b>						
<b>Men</b>						
35–44	Perth	34.7	31.1	11.3	17.1	–2.1 (–3.5, –0.7)
	Newcastle	4.5	NR	4.2	2.9	–0.3 (–1.5, 0.9)
45–54	Perth	29.9	31.7	17.3	21.2	–1.3 (–2.3, –0.4)
	Newcastle	3.0	NR	2.1	3.8	0.0 (–0.6, 0.7)
55–64	Perth	31.3	27.6	18.8	22.7	–1.0 (–1.7, –0.3)
	Newcastle	2.0	NR	6.4	5.9	0.6 (0.0, 1.2)
65–69	Newcastle	3.8	NR	3.7	7.4	0.6 (–0.2, 1.5)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>31.2</b>	<b>29.0</b>	<b>17.7</b>	<b>21.8</b>	<b>–1.2 (–1.8, –0.7)</b>
	<b>Newcastle</b>	<b>2.5</b>	<b>NR</b>	<b>5.0</b>	<b>5.1</b>	<b>0.3 (–0.1, 0.8)</b>
<b>Women</b>						
35–44	Perth	33.3	33.3	13.3	16.7	–3.6 (–8.3, 1.1)
	Newcastle	0.0	NR	0.0	27.3	5.3 (0.0, 10.6)
45–54	Perth	25.0	31.6	10.0	19.7	–1.1 (–3.4, 1.1)
	Newcastle	8.3	NR	7.1	7.1	0.1 (–2.0, 2.3)
55–64	Perth	20.5	16.5	17.6	15.6	–0.3 (–1.6, 1.1)
	Newcastle	7.8	NR	2.4	4.3	–0.1 (–1.0, 0.8)
65–69	Newcastle	8.8	NR	3.4	6.5	–0.2 (–1.4, 0.9)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>22.9</b>	<b>22.2</b>	<b>15.2</b>	<b>16.8</b>	<b>–0.7 (–1.8, 0.4)</b>
	<b>Newcastle</b>	<b>7.3</b>	<b>NR</b>	<b>3.5</b>	<b>7.2</b>	<b>0.2 (–0.7, 1.0)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

Table A40: Treatment with diuretics at discharge and estimated average annual percentage change, 1985–93

Age group (years)	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
Per cent						
<b>Men</b>						
35–44	Perth	10.2	7.8	11.3	7.9	–0.2 (–1.3, 0.8)
	Newcastle	18.2	NR	11.3	7.4	–1.9 (–3.8, 0.0)
45–54	Perth	21.2	16.9	12.5	9.6	–1.5 (–2.3, –0.8)
	Newcastle	17.9	NR	10.3	16.3	0.0 (–1.3, 1.3)
55–64	Perth	32.2	22.4	19.5	16.7	–1.6 (–2.3, –0.9)
	Newcastle	22.4	NR	17.1	20.7	–0.1 (–1.2, 0.9)
65–69	Newcastle	45.3	NR	29.9	30.4	–1.7 (–3.4, 0.1)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>27.2</b>	<b>19.6</b>	<b>16.8</b>	<b>14.0</b>	<b>–1.4 (–1.9, –0.9)</b>
	<b>Newcastle</b>	<b>20.8</b>	<b>NR</b>	<b>14.7</b>	<b>18.3</b>	<b>–0.3 (–1.0, 0.5)</b>
<b>Women</b>						
35–44	Perth	0.0	33.3	6.7	11.1	–2.3 (–6.3, 1.8)
	Newcastle	0.0	NR	0.0	18.2	5.3 (1.1, 9.6)
45–54	Perth	30.0	18.4	20.3	21.3	–0.3 (–2.7, 2.0)
	Newcastle	16.7	NR	16.7	19.5	0.9 (–2.3, 4.2)
55–64	Perth	40.9	33.0	33.2	21.3	–2.4 (–4.0, –0.8)
	Newcastle	31.4	NR	29.4	33.3	0.0 (–2.1, 2.0)
65–69	Newcastle	58.8	NR	38.2	38.2	–2.3 (–4.7, 0.1)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>34.2</b>	<b>29.1</b>	<b>27.2</b>	<b>20.4</b>	<b>–1.9 (–3.1, –0.6)</b>
	<b>Newcastle</b>	<b>24.5</b>	<b>NR</b>	<b>23.2</b>	<b>28.2</b>	<b>0.4 (–1.3, 2.1)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

Table A41: Treatment with nitrates at discharge and estimated average annual percentage change, 1985–93

Age group (years)	Centre	1985	1986–87	1988–90	1991–93	Estimated annual percentage change (95% CI)
Per cent						
<b>Men</b>						
35–44	Perth	75.5	68.6	86.8	69.2	–0.9 (–2.5, 0.6)
	Newcastle	36.4	NR	54.9	52.9	1.6 (–1.5, 4.8)
45–54	Perth	78.8	80.7	81.2	79.4	–0.2 (–1.1, 0.7)
	Newcastle	53.7	NR	59.3	63.5	1.3 (–0.5, 3.0)
55–64	Perth	86.6	74.8	80.5	78.1	–0.4 (–1.1, 0.3)
	Newcastle	55.8	NR	60.1	65.3	1.4 (0.1, 2.7)
65–69	Newcastle	60.4	NR	65.2	73.5	2.1 (0.3, 3.9)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>83.5</b>	<b>75.9</b>	<b>81.3</b>	<b>77.7</b>	<b>–0.4 (–0.9, 0.1)</b>
	<b>Newcastle</b>	<b>53.5</b>	<b>NR</b>	<b>59.4</b>	<b>63.7</b>	<b>1.4 (0.4, 2.4)</b>
<b>Women</b>						
35–44	Perth	100.0	100.0	80.0	83.3	–1.8 (–5.9, 2.2)
	Newcastle	50.0	NR	37.5	81.8	7.6 (–1.2, 16.4)
45–54	Perth	75.0	71.1	87.1	78.3	1.0 (–1.3, 3.3)
	Newcastle	33.3	NR	54.8	81.4	7.5 (3.7, 11.2)
55–64	Perth	79.5	78.9	76.0	78.7	–0.2 (–1.6, 1.3)
	Newcastle	54.9	NR	69.8	65.8	1.0 (–1.1, 3.1)
65–69	Newcastle	55.9	NR	66.3	69.1	1.8 (–0.5, 4.2)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>80.2</b>	<b>78.7</b>	<b>79.4</b>	<b>79.0</b>	<b>0.0 (–1.2, 1.2)</b>
	<b>Newcastle</b>	<b>48.6</b>	<b>NR</b>	<b>62.8</b>	<b>71.5</b>	<b>2.7 (0.9, 4.5)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

# Appendix 6: Levels of risk factors and their treatment

Table A42: Mean systolic blood pressure and estimated average annual change in mean level, 1983–94

Age group (years)	Centre	1983	1988–89	1994	Estimated annual change (95% CI)
<b>Mean (mmHg)</b>					
<b>Men</b>					
35–44	Perth	126.8	127.0	127.1	0.0 (–0.2, 0.3)
	Newcastle	123.9	124.1	125.7	0.2 (0.0, 0.4)
45–54	Perth	134.8	132.4	131.7	–0.3 (–0.6, 0.0)
	Newcastle	133.7	133.0	130.4	–0.3 (–0.5, 0.0)
55–64	Perth	143.7	141.4	143.7	0.0 (–0.4, 0.4)
	Newcastle	142.9	140.4	139.3	–0.3 (–0.6, –0.1)
65–69	Newcastle	NR	147.2	142.6	–0.8 (–1.6, –0.1)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>133.1</b>	<b>131.8</b>	<b>132.4</b>	<b>–0.09 (–0.27, 0.09)</b>
	<b>Newcastle</b>	<b>131.2</b>	<b>130.3</b>	<b>130.1</b>	<b>–0.19 (–0.34, –0.05)</b>
<b>Women</b>					
35–44	Perth	115.9	115.7	115.5	0.0 (–0.3, 0.2)
	Newcastle	118.6	117.0	120.2	0.1 (–0.1, 0.3)
45–54	Perth	129.0	128.7	128.6	0.0 (–0.4, 0.3)
	Newcastle	131.0	129.5	127.4	–0.3 (–0.6, 0.0)
55–64	Perth	142.1	137.9	142.5	0.0 (–0.4, 0.4)
	Newcastle	141.1	140.2	136.5	–0.4 (–0.7, –0.1)
65–69	Newcastle	NR	144.5	145.3	0.2 (–0.7, 1.0)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>126.5</b>	<b>125.1</b>	<b>126.0</b>	<b>–0.04 (–0.22, 0.14)</b>
	<b>Newcastle</b>	<b>127.9</b>	<b>126.1</b>	<b>126.2</b>	<b>–0.24 (–0.39, –0.09)</b>

NR = not recorded.

(a) Age-standardised to the 1991 Australian population.

Table A43: Mean diastolic blood pressure and estimated average annual change in mean level, 1983–94

Age group (years)	Centre	1983	1988–89	1994	Estimated annual change (95% CI)
<b>Mean (mmHg)</b>					
<b>Men</b>					
35–44	Perth	82.1	79.4	83.4	0.1 (–0.1, 0.3)
	Newcastle	80.6	80.2	81.0	0.0 (–0.1, 0.2)
45–54	Perth	86.8	82.5	86.5	0.0 (–0.2, 0.2)
	Newcastle	85.6	85.1	81.5	–0.4 (–0.5, –0.2)
55–64	Perth	86.7	81.6	87.0	0.0 (–0.2, 0.2)
	Newcastle	84.8	83.1	79.9	–0.4 (–0.6, –0.3)
65–69	Newcastle	NR	83.6	77.9	–1.1 (–1.5, –0.7)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>84.6</b>	<b>80.8</b>	<b>85.2</b>	<b>0.01 (–0.10, 0.01)</b>
	<b>Newcastle</b>	<b>83.1</b>	<b>82.4</b>	<b>80.8</b>	<b>–0.28 (–0.37, –0.19)</b>
<b>Women</b>					
35–44	Perth	75.2	71.7	74.3	–0.1 (–0.3, 0.0)
	Newcastle	75.5	74.7	73.8	–0.2 (–0.3, 0.0)
45–54	Perth	80.9	76.9	81.0	0.0 (–0.2, 0.2)
	Newcastle	81.2	79.7	76.2	–0.4 (–0.6, –0.3)
55–64	Perth	83.9	76.9	82.9	–0.1 (–0.3, 0.1)
	Newcastle	81.7	81.2	77.7	–0.4 (–0.5, –0.2)
65–69	Newcastle	NR	78.6	76.7	–0.4 (–0.9, 0.0)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>79.2</b>	<b>74.6</b>	<b>78.6</b>	<b>–0.10 (–0.20, 0.01)</b>
	<b>Newcastle</b>	<b>78.8</b>	<b>77.8</b>	<b>75.5</b>	<b>–0.33 (–0.42, –0.24)</b>

NR = not recorded.

(a) Age-standardised to the 1991 Australian population.

**Table A44: Treatment for hypertension and estimated average annual change in mean level, 1983–94**

Age group (years)	Centre	1983	1988–89	1994	Estimated annual change (95% CI)
<b>Per cent</b>					
<b>Men</b>					
35–44	Perth	4.2	3.9	4.3	0.0 (–0.3, 0.3)
	Newcastle	4.1	6.1	4.8	0.1 (–0.2, 0.4)
45–54	Perth	8.5	12.3	8.5	0.0 (–0.5, 0.5)
	Newcastle	19.1	12.3	14.3	–0.4 (–1.0, 0.1)
55–64	Perth	19.6	17.9	14.0	–0.5 (–1.2, 0.2)
	Newcastle	23.2	29.5	28.9	0.5 (–0.1, 1.2)
65–69	Newcastle	NR	26.9	35.9	1.6 (–0.2, 3.4)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>9.4</b>	<b>9.9</b>	<b>8.0</b>	<b>–0.17 (–0.47, 0.13)</b>
	<b>Newcastle</b>	<b>13.1</b>	<b>13.6</b>	<b>13.3</b>	<b>0.08 (–0.23, 0.38)</b>
<b>Women</b>					
35–44	Perth	1.6	1.8	3.2	0.1 (–0.1, 0.4)
	Newcastle	2.7	5.3	3.7	–0.2 (–0.5, 0.1)
45–54	Perth	13.1	10.0	12.4	–0.1 (–0.6, 0.5)
	Newcastle	22.8	19.5	12.0	–1.0 (–1.5, –0.4)
55–64	Perth	28.6	21.2	20.4	–0.8 (–1.5, 0.0)
	Newcastle	29.7	32.8	32.9	0.3 (–0.3, 0.9)
65–69	Newcastle	NR	36.4	39.9	0.8 (–1.3, 2.9)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>11.8</b>	<b>9.2</b>	<b>10.2</b>	<b>–0.22 (–0.53, 0.09)</b>
	<b>Newcastle</b>	<b>16.9</b>	<b>16.2</b>	<b>13.2</b>	<b>–0.28 (–0.59, 0.04)</b>

NR = not recorded.

(a) Age-standardised to the 1991 Australian population.

Table A45: Mean serum cholesterol and estimated average annual change in mean level, 1983–94

Age group (years)	Centre	1983	1988–89	1994	Estimated annual change (95% CI)
<b>Mean (mmol/L)</b>					
<b>Men</b>					
35–44	Perth	5.67	5.67	5.45	–0.02 (–0.04, 0.00)
	Newcastle	5.79	5.61	5.65	–0.02 (–0.03, 0.00)
45–54	Perth	5.82	5.89	5.64	–0.02 (–0.03, 0.00)
	Newcastle	6.09	5.88	5.96	–0.02 (–0.03, 0.00)
55–64	Perth	6.07	6.08	5.65	–0.04 (–0.06, –0.02)
	Newcastle	6.08	5.88	5.66	–0.04 (–0.05, –0.02)
65–69	Newcastle	NR	5.76	5.68	–0.02 (–0.03, 0.00)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>5.81</b>	<b>5.82</b>	<b>5.55</b>	<b>–0.02 (–0.03, –0.01)</b>
	<b>Newcastle</b>	<b>5.95</b>	<b>5.76</b>	<b>5.75</b>	<b>–0.02 (–0.03, –0.01)</b>
<b>Women</b>					
35–44	Perth	5.29	5.15	4.96	–0.03 (–0.05, –0.01)
	Newcastle	5.39	5.34	5.21	–0.02 (–0.03, 0.00)
45–54	Perth	5.93	5.76	5.51	–0.04 (–0.06, –0.02)
	Newcastle	6.13	5.91	5.58	–0.05 (–0.06, –0.03)
55–64	Perth	6.44	6.46	6.12	–0.03 (–0.05, –0.01)
	Newcastle	6.51	6.31	6.10	–0.04 (–0.05, –0.02)
65–69	Newcastle	NR	6.26	6.06	–0.04 (–0.08, 0.01)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>5.77</b>	<b>5.65</b>	<b>5.40</b>	<b>–0.03 (–0.04, –0.02)</b>
	<b>Newcastle</b>	<b>5.89</b>	<b>5.74</b>	<b>5.53</b>	<b>–0.03 (–0.04, –0.03)</b>

NR = not recorded.

(a) Age-standardised to the 1991 Australian population.



**Table A46: Mean high-density lipoprotein cholesterol and estimated average annual change in mean level for men, 1983–94**

Age group (years)	Centre	1983	1988–89	1994	Estimated annual change (95% CI)
<b>Mean (mmol/L)</b>					
<b>Men</b>					
35–44	Perth	1.21	1.20	1.21	0.00 (–0.01, 0.01)
	Newcastle	1.20	1.17	1.09	–0.01 (–0.01, 0.00)
45–54	Perth	1.23	1.15	1.20	0.00 (–0.01, 0.00)
	Newcastle	1.21	1.16	1.12	–0.01 (–0.01, 0.00)
55–64	Perth	1.27	1.20	1.23	0.00 (–0.01, 0.00)
	Newcastle	1.21	1.20	1.12	–0.01 (–0.01, 0.00)
65–69	Newcastle	NR	1.17	1.12	–0.01 (–0.02, 0.00)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>1.23</b>	<b>1.19</b>	<b>1.21</b>	<b>0.00 (–0.01, 0.00)</b>
	<b>Newcastle</b>	<b>1.21</b>	<b>1.17</b>	<b>1.11</b>	<b>–0.01 (–0.01, –0.01)</b>
<b>Women</b>					
35–44	Perth	1.52	1.43	1.49	0.00 (–0.01, 0.00)
	Newcastle	1.47	1.50	1.42	0.00 (–0.01, 0.00)
45–54	Perth	1.52	1.51	1.49	0.00 (–0.01, 0.00)
	Newcastle	1.52	1.50	1.49	0.00 (–0.01, 0.00)
55–64	Perth	1.52	1.48	1.54	0.00 (–0.01, 0.01)
	Newcastle	1.50	1.55	1.45	0.00 (–0.01, 0.00)
65–69	Newcastle	NR	1.47	1.45	0.00 (–0.02, 0.01)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>1.52</b>	<b>1.47</b>	<b>1.50</b>	<b>0.00 (–0.01, 0.00)</b>
	<b>Newcastle</b>	<b>1.50</b>	<b>1.51</b>	<b>1.45</b>	<b>0.00 (–0.01, 0.00)</b>

NR = not recorded.

(a) Age-standardised to the 1991 Australian population.

**Table A47: Treatment for hypercholesterolaemia and estimated average annual change in mean level, 1983–94**

Age group (years)	Centre	1983	1988–89	1994	Estimated annual change (95% CI)
<b>Per cent</b>					
<b>Men</b>					
35–44	Perth	NR	0.4	1.1	0.1 (–0.2, 0.5)
	Newcastle	NR	1.1	1.2	0.0 (–0.4, 0.4)
45–54	Perth	NR	0.5	4.7	0.8 (0.2, 1.5)
	Newcastle	NR	3.2	6.9	0.7 (–0.1, 1.4)
55–64	Perth	NR	0.5	4.7	0.8 (0.2, 1.5)
	Newcastle	NR	5.8	8.6	0.6 (–0.2, 1.4)
65–69	Newcastle	NR	3.8	11.7	1.5 (0.4, 2.5)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>NR</b>	<b>0.4</b>	<b>3.1</b>	<b>0.60 (0.29, 0.92)</b>
	<b>Newcastle</b>	<b>NR</b>	<b>3.0</b>	<b>4.7</b>	<b>0.44 (0.02, 0.87)</b>
<b>Women</b>					
35–44	Perth	NR	0.0	0.5	0.1 (–0.1, 0.3)
	Newcastle	NR	0.0	0.0	0.0 (0.0, 0.0)
45–54	Perth	NR	0.4	1.5	0.2 (–0.2, 0.6)
	Newcastle	NR	0.5	1.4	0.1 (–0.2, 0.5)
55–64	Perth	NR	0.0	0.7	1.5 (0.7, 2.2)
	Newcastle	NR	8.9	11.1	0.3 (–0.6, 1.3)
65–69	Newcastle	NR	7.6	16.2	1.5 (0.1, 2.9)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>NR</b>	<b>0.1</b>	<b>2.4</b>	<b>0.55 (0.28, 0.82)</b>
	<b>Newcastle</b>	<b>NR</b>	<b>2.2</b>	<b>3.0</b>	<b>0.19 (–0.18, 0.57)</b>

NR = not recorded.

(a) Age-standardised to the 1991 Australian population.

Table A48: Mean body mass index and estimated average annual change in mean level, 1983–94

Age group (years)	Centre	1983	1988–89	1994	Estimated annual change (95% CI)
<b>Mean (kg/m<sup>2</sup>)</b>					
<b>Men</b>					
35–44	Perth	24.6	25.8	26.1	0.1 (0.1, 0.2)
	Newcastle	25.6	26.2	27.1	0.1 (0.1, 0.2)
45–54	Perth	25.9	26.6	26.8	0.1 (0.0, 0.1)
	Newcastle	26.4	27.5	27.7	0.1 (0.1, 0.2)
55–64	Perth	25.8	26.2	26.5	0.1 (0.0, 0.1)
	Newcastle	26.5	27.2	27.9	0.1 (0.1, 0.2)
65–69	Newcastle	NR	27.1	27.5	0.1 (–0.1, 0.2)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>25.3</b>	<b>26.2</b>	<b>26.4</b>	<b>0.09 (0.06, 0.13)</b>
	<b>Newcastle</b>	<b>26.1</b>	<b>26.8</b>	<b>27.5</b>	<b>0.12 (0.09, 0.16)</b>
<b>Women</b>					
35–44	Perth	23.1	24.5	24.8	0.2 (0.1, 0.2)
	Newcastle	23.9	24.8	26.2	0.2 (0.1, 0.3)
45–54	Perth	25.1	25.4	26.0	0.1 (0.0, 0.2)
	Newcastle	25.6	27.0	27.2	0.2 (0.1, 0.2)
55–64	Perth	25.3	26.0	27.2	0.2 (0.1, 0.3)
	Newcastle	26.1	26.7	27.4	0.1 (0.0, 0.2)
65–69	Newcastle	NR	25.9	27.0	0.2 (0.0, 0.4)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>24.3</b>	<b>25.1</b>	<b>25.7</b>	<b>0.14 (0.09, 0.18)</b>
	<b>Newcastle</b>	<b>25.0</b>	<b>26.0</b>	<b>26.8</b>	<b>0.16 (0.11, 0.20)</b>

NR = not recorded.

(a) Age-standardised to the 1991 Australian population.

Table A49: Prevalence of cigarette smoking and estimated average annual change in prevalence, 1983–94

Age group (years)	Centre	1983	1988–89	1994	Estimated annual change (95% CI)
Per cent					
<b>Men</b>					
35–44	Perth	34.6	26.1	26.1	–0.8 (–1.6, 0.0)
	Newcastle	33.1	29.3	26.2	–0.6 (–1.4, 0.1)
45–54	Perth	33.0	23.6	26.9	–0.6 (–1.4, 0.2)
	Newcastle	38.8	27.1	24.1	–1.4 (–2.1, –0.7)
55–64	Perth	29.9	23.2	21.4	–0.8 (–1.5, 0.0)
	Newcastle	36.1	22.2	17.6	–1.7 (–2.3, –1.1)
65–69	Newcastle	NR	17.3	8.2	–1.8 (–1.1, 0.2)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>32.8</b>	<b>24.8</b>	<b>25.3</b>	<b>–0.72 (–1.17, –0.27)</b>
	<b>Newcastle</b>	<b>35.7</b>	<b>27.2</b>	<b>23.6</b>	<b>–1.29 (–1.68, 0.90)</b>
<b>Women</b>					
35–44	Perth	19.9	19.7	17.8	–0.2 (–0.8, 0.5)
	Newcastle	27.6	18.2	24.1	–0.5 (–1.1, 0.2)
45–54	Perth	26.2	24.0	12.9	–1.2 (–1.9, –0.5)
	Newcastle	22.6	17.5	15.7	–0.7 (–1.3, –0.1)
55–64	Perth	18.9	19.6	12.1	–0.6 (–1.3, 0.1)
	Newcastle	18.7	11.3	12.5	–0.6 (–1.1, –0.1)
65–69	Newcastle	NR	9.0	6.1	–0.5 (–1.7, 0.6)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>21.8</b>	<b>21.1</b>	<b>14.9</b>	<b>–0.62 (–1.01, –0.23)</b>
	<b>Newcastle</b>	<b>23.8</b>	<b>16.5</b>	<b>18.7</b>	<b>–0.58 (–0.91, –0.25)</b>

NR = not recorded.

(a) Age-standardised to the 1991 Australian population.

**Table A50: Prevalence of overweight and obesity and estimated average annual change in prevalence, 1983–94**

Age group (years)	Centre	1983	1988–89	1994	Estimated annual change (95% CI)
<b>Per cent</b>					
<b>Men</b>					
35–44	Perth	42.2	58.3	59.1	1.6 (0.8, 2.5)
	Newcastle	54.6	66.1	69.0	1.4 (0.6, 2.1)
45–54	Perth	58.0	67.0	67.8	0.9 (0.1, 1.8)
	Newcastle	64.1	73.2	76.8	1.1 (0.4, 1.8)
55–64	Perth	59.8	61.1	66.0	0.6 (–0.3, 1.4)
	Newcastle	62.1	71.2	79.0	1.5 (0.9, 2.2)
65–69	Newcastle	NR	74.7	77.0	0.3 (–1.4, 2.0)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>51.0</b>	<b>61.6</b>	<b>63.4</b>	<b>1.03 (0.53, 1.53)</b>
	<b>Newcastle</b>	<b>59.1</b>	<b>69.5</b>	<b>73.6</b>	<b>1.39 (0.99, 1.79)</b>
<b>Women</b>					
35–44	Perth	23.1	34.2	41.0	1.6 (0.9, 2.4)
	Newcastle	32.6	39.7	44.0	1.1 (0.4, 1.8)
45–54	Perth	43.0	44.5	52.4	0.8 (–0.1, 1.7)
	Newcastle	48.9	59.0	59.0	1.0 (0.3, 1.7)
55–64	Perth	46.4	52.2	59.9	1.2 (0.3, 2.1)
	Newcastle	54.6	55.9	62.5	0.7 (0.0, 1.4)
65–69	Newcastle	NR	53.4	61.2	1.6 (–0.6, 3.7)
<b>35–64<sup>(a)</sup></b>	<b>Perth</b>	<b>35.3</b>	<b>41.7</b>	<b>49.0</b>	<b>1.24 (0.75, 1.73)</b>
	<b>Newcastle</b>	<b>43.2</b>	<b>50.0</b>	<b>53.0</b>	<b>0.90 (0.49, 1.31)</b>

NR = not recorded.

(a) Age-standardised to the 1991 Australian population.

# Appendix 7: Use of cardiovascular drugs among the Newcastle general population

Table A51: Use of beta blockers and estimated average annual change in level of use for men and women in Newcastle, 1983–94

Age group (years)	Sex	1983	1988–89	1994	Estimated annual change (95% CI)
Per cent					
35–44	Men	2.7	3.3	3.0	0.0 (–0.2, 0.3)
	Women	4.1	2.9	2.1	–0.2 (–0.4, 0.1)
45–54	Men	11.4	8.1	3.9	–0.7 (–1.1, –0.3)
	Women	15.1	10.1	4.1	–1.0 (–1.4, 0.5)
55–64	Men	15.2	18.2	14.2	0.0 (–0.6, 0.5)
	Women	17.9	19.4	11.4	–0.6 (–1.1, 0.0)
65–69	Men	NR	17.9	14.3	–0.7 (–2.1, 0.7)
	Women	NR	18.0	20.3	0.5 (–1.2, 2.3)
<b>35–64<sup>(a)</sup></b>	<b>Men</b>	<b>8.2</b>	<b>8.1</b>	<b>5.7</b>	<b>–0.24 (–0.49, 0.01)</b>
	<b>Women</b>	<b>11.0</b>	<b>9.2</b>	<b>4.7</b>	<b>–0.58 (–0.83, –0.32)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

**Table A52: Use of calcium channel blockers and estimated average annual change in level of use for men and women in Newcastle, 1983–94**

Age group (years)	Sex	1983	1988–89	1994	Estimated annual change (95% CI)
Per cent					
35–44	Men	0.0	2.2	1.2	0.1 (0.0, 0.3)
	Women	0.5	1.4	2.1	0.1 (0.0, 0.3)
45–54	Men	1.3	3.2	3.0	0.2 (–0.1, 0.4)
	Women	0.7	3.7	4.1	0.3 (0.1, 0.5)
55–64	Men	2.0	7.3	12.7	1.0 (0.6, 1.3)
	Women	2.1	6.0	11.1	0.8 (0.5, 1.1)
65–69	Men	NR	6.4	20.9	2.6 (1.2, 3.9)
	Women	NR	10.5	16.9	1.2 (–0.3, 2.8)
<b>35–64<sup>(a)</sup></b>	<b>Men</b>	<b>0.8</b>	<b>3.6</b>	<b>4.3</b>	<b>0.46 (0.31, 0.61)</b>
	<b>Women</b>	<b>0.9</b>	<b>3.1</b>	<b>4.7</b>	<b>0.43 (0.29, 0.58)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

**Table A53: Use of diuretics and estimated average annual change in level of use for men and women in Newcastle, 1983–94**

Age group (years)	Sex	1983	1988–89	1994	Estimated annual change (95% CI)
Per cent					
35–44	Men	1.6	0.6	1.2	–0.1 (–0.2, 0.1)
	Women	5.9	4.3	2.1	–0.4 (–0.7, 0.0)
45–54	Men	9.8	6.3	3.9	–0.5 (–0.9, –0.1)
	Women	19.2	12.4	4.6	–1.3 (–1.8, –0.8)
55–64	Men	13.4	11.6	9.7	–0.3 (–0.8, 0.1)
	Women	27.4	21.4	19.3	–0.7 (–1.3, –0.2)
65–69	Men	NR	12.8	14.8	0.4 (–0.9, 1.7)
	Women	NR	30.1	22.3	–1.6 (–3.5, 0.3)
<b>35–64<sup>(a)</sup></b>	<b>Men</b>	<b>6.7</b>	<b>4.8</b>	<b>3.8</b>	<b>–0.34 (–0.56, –0.12)</b>
	<b>Women</b>	<b>15.2</b>	<b>10.8</b>	<b>6.7</b>	<b>–0.82 (–1.10, –0.53)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

**Table A54: Use of other anti-hypertensive agents and estimated average annual change in level of use for men and women in Newcastle, 1983–94**

Age group (years)	Sex	1983	1988–89	1994	Estimated annual change (95% CI)
Per cent					
35–44	Men	1.8	0.6	0.6	–0.1 (–0.3, 0.1)
	Women	1.8	1.4	1.0	–0.1 (–0.3, 0.1)
45–54	Men	9.3	1.8	3.0	–0.6 (–1.0, –0.3)
	Women	10.8	6.0	1.4	–0.9 (–1.2, –0.5)
55–64	Men	13.4	8.0	5.6	–0.7 (–1.1, –0.3)
	Women	13.3	9.7	4.3	–0.8 (–1.2, –0.4)
65–69	Men	NR	10.3	5.1	–1.0 (–2.0, 0.0)
	Women	NR	12.0	10.1	–0.3 (–1.6, 1.1)
<b>35–64<sup>(a)</sup></b>	<b>Men</b>	<b>6.8</b>	<b>2.6</b>	<b>2.6</b>	<b>–0.51 (–0.70, –0.31)</b>
	<b>Women</b>	<b>7.4</b>	<b>4.7</b>	<b>2.0</b>	<b>–0.61 (–0.81, –0.41)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

**Table A55: Use of angiotensin-converting enzyme inhibitors and estimated average annual change in level of use for men and women in Newcastle, 1983–94**

Age group (years)	Sex	1983	1988–89	1994	Estimated annual change (95% CI)
Per cent					
35–44	Men	NR	1.7	2.4	0.1 (–0.4, 0.6)
	Women	NR	1.4	1.6	0.0 (–0.5, 0.4)
45–54	Men	NR	0.9	7.4	1.2 (0.5, 1.9)
	Women	NR	2.8	3.2	0.0 (–0.6, 0.6)
55–64	Men	NR	4.4	11.6	1.3 (0.5, 2.2)
	Women	NR	2.4	12.5	1.9 (1.1, 2.7)
65–69	Men	NR	5.1	18.9	2.5 (1.2, 3.7)
	Women	NR	3.8	13.5	1.8 (0.6, 3.1)
<b>35–64<sup>(a)</sup></b>	<b>Men</b>	<b>NR</b>	<b>2.0</b>	<b>5.8</b>	<b>0.94 (0.51, 1.37)</b>
	<b>Women</b>	<b>NR</b>	<b>1.9</b>	<b>4.4</b>	<b>0.72 (0.32, 1.11)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.



**Table A56: Daily use of aspirin and estimated average annual change in level of use for men and women in Newcastle, 1983–94**

Age group (years)	Sex	1983	1988–89	1994	Estimated annual change (95% CI)
<b>Per cent</b>					
35–44	Men	1.8	1.1	0.0	–0.2 (–0.3, 0.0)
	Women	2.3	1.0	0.5	–0.2 (–0.3, 0.0)
45–54	Men	3.5	2.7	11.8	0.7 (0.3, 1.0)
	Women	4.3	4.6	0.9	–0.3 (–0.6, 0.0)
55–64	Men	4.3	11.6	16.5	1.1 (0.7, 1.5)
	Women	3.6	6.5	9.6	0.5 (0.2, 0.9)
65–69	Men	NR	17.9	28.1	1.9 (0.3, 3.5)
	Women	NR	15.0	17.6	0.5 (–1.1, 2.1)
<b>35–64<sup>(a)</sup></b>	<b>Men</b>	<b>2.9</b>	<b>4.0</b>	<b>7.1</b>	<b>0.59 (0.39, 0.79)</b>
	<b>Women</b>	<b>3.3</b>	<b>3.3</b>	<b>2.7</b>	<b>0.04 (–0.12, 0.21)</b>

NR = not recorded.

(a) Age-standardised using Australian MONICA populations.

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