

# Hospital care

## Introduction

This chapter presents information on hospital care for cardiovascular disease in Australia. Detailed analysis from three national sources of data (the National Hospital Morbidity Database; Medicare and Department of Veterans' Affairs medical benefits data; and the Australian Bureau of Statistics' National Health Survey 1995) are presented as well as results from several other sources (the National Heart Foundation cardiac surgery and coronary angioplasty registers; 1994-95 Australian casemix data; the 1995 Public Hospital Elective Surgery Waiting List Survey; the Australian and New Zealand Cardiothoracic Organ Transplant Registry; and the Newcastle MONICA project).

The limitations of the national data sources, as discussed in the chapter *National data sources*, should be kept in mind when interpreting the results presented here.

## Data sources

- **The National Hospital Morbidity Database.** National estimates are provided for the number of separations and the average length of stay for cardiovascular conditions and cardiovascular procedures in public acute (including the Department of Veterans' Affairs hospitals) and private hospitals in 1995-96.
- **Medicare and Department of Veterans' Affairs medical benefits data.** National information is provided on the number of medical services provided and benefits paid for cardiovascular medical services that qualify for benefits under Medicare or the Department of Veterans' Affairs medical benefits schemes in 1992-93, 1993-94 and 1994-95.
- **The Australian Bureau of Statistics' National Health Survey 1995** (Australian Bureau of Statistics 1997a; 1997b). Provides national estimates of the self-reported prevalence of recent hospitalisation (i.e. in the two weeks prior to interview) and hospitalisation in the 12 months prior to interview, for cardiovascular conditions.
- **The National Heart Foundation cardiac surgery register** (National Heart Foundation of Australia 1996a). Provides information on all cardiac surgery performed in Australia since 1953.
- **The National Heart Foundation coronary angioplasty register** (National Heart Foundation of Australia 1996b). Provides information on all coronary angioplasty performed in Australia since 1980.
- **Australian casemix data** (Commonwealth Department of Health and Family Services 1996b). Provides information on hospital activity for cardiovascular disease as measured by Australian National Diagnosis Related Groups (AN-DRGs).
- **The 1995 Public Hospital Elective Surgery Waiting List Survey** (Moon 1996). Provides information about elective surgery waiting lists in Australian public hospitals. Data relevant to this report are available for cardiothoracic surgery, neurosurgery and vascular surgery.

- **The Australian and New Zealand Cardiothoracic Organ Transplant Registry** (Australian and New Zealand Cardiothoracic Organ Transplant Registry 1997). The sixth annual report provides information about all heart and heart-lung transplants performed in Australia and New Zealand between February 1984 and December 1996.
- **The Newcastle MONICA project** (Steele & McElduff 1995a; Steele & McElduff 1995b). The Newcastle MONICA Project collected data on all suspected cases of heart attack or coronary death among residents aged 25 to 69 years in the local government areas of Newcastle, Lake Macquarie, Maitland, Cessnock and Port Stephens. The study was conducted over a 10-year period and registration began in August 1984. Information on acute care was collected.

## The National Hospital Morbidity Database

For 1995–96, the National Hospital Morbidity Database includes all public acute hospitals in Australia, except those that are not within the jurisdiction of a State or Territory health authority or the Department of Veterans’ Affairs. All private acute and psychiatric hospitals are also included except the private hospital in the Northern Territory and the private freestanding day hospital facilities in the Australian Capital Territory. The National Hospital Morbidity Database also includes public psychiatric hospitals except for Queensland; however, these data have not been included in this report.

This section presents summary statistics on separations and average length of stay for cardiovascular conditions and cardiovascular procedures in public acute (including the Department of Veterans’ Affairs hospital) and private hospitals in 1995–96.

In 1995–96 there were 5,151,094 hospital separations from public acute and private hospitals in Australia (Australian Institute of Health and Welfare 1997a). The average length of stay for a separation (including same day separations) was 4.3 days.

In 1995–96, the National Hospital Morbidity Database included information on principal diagnosis and up to 20 additional diagnoses (Australian Institute of Health and Welfare 1997a).

### Box 7: Cardiovascular conditions codes

*Information is provided in this section for the following cardiovascular conditions:*

Condition	ICD-9-CM diagnostic code
Rheumatic heart disease	390–398
Hypertensive disease	401–405
Acute myocardial infarction	410
Coronary heart disease	410–414
Heart failure	428
Cerebrovascular disease	430–438
Peripheral vascular disease	441–444
All cardiovascular disease	390–459
Chest pain with heart disease	786.5 + (410–414 or 420–429)

## Cardiovascular disease as principal diagnosis only

Eight per cent of all public acute and private hospital separations in 1995–96 were associated with a principal diagnosis of cardiovascular disease (Table 16). Of those separations, 37% were due to coronary heart disease, 12% to cerebrovascular disease and 10% to heart failure.

**Table 16: Separations and average length of stay for principal diagnosis of cardiovascular conditions by sex, public acute and private hospitals, Australia, 1995–96**

Condition/sex	Number of separations	Average length of stay (days)	Crude rate <sup>(a)</sup>	Age-standardised rate <sup>(b)</sup>	95% confidence interval for age-standardised rate
<b>Males</b>					
Rheumatic heart disease	727	7.6	8.0	8.1	7.5–8.7
Hypertensive disease	3,121	6.2	34.3	34.6	33.3–35.8
Acute myocardial infarction	21,818	6.7	239.6	243.6	240.4–246.9
Coronary heart disease	99,557	5.1	1,093.5	1,103.7	1,096.9–1,110.4
Heart failure	20,187	8.9	221.7	243.2	239.9–246.6
Cerebrovascular disease	26,382	11.6	289.8	309.4	305.6–313.1
Peripheral vascular disease	9,488	9.1	104.2	110.0	107.8–112.2
<b>All cardiovascular disease</b>	<b>231,283</b>	<b>6.2</b>	<b>2,540.3</b>	<b>2,608.2</b>	<b>2,598.0–2,618.3</b>
Chest pain with heart disease <sup>(c)</sup>	5,820	2.7	63.9	64.4	62.7–66.0
<b>Females</b>					
Rheumatic heart disease	1,192	7.5	13.0	12.2	11.5–12.9
Hypertensive disease	5,324	8.3	58.0	50.9	49.5–52.3
Acute myocardial infarction	11,183	8.0	121.8	101.5	99.6–103.4
Coronary heart disease	53,179	5.7	579.0	500.6	496.3–504.8
Heart failure	20,523	10.4	223.5	169.3	167.0–171.6
Cerebrovascular disease	24,906	13.5	271.2	217.3	214.6–220.1
Peripheral vascular disease	4,844	9.0	52.7	43.8	42.6–45.1
<b>All cardiovascular disease</b>	<b>181,502</b>	<b>7.1</b>	<b>1,976.2</b>	<b>1,698.5</b>	<b>1,690.8–1,706.2</b>
Chest pain with heart disease <sup>(c)</sup>	4,390	3.1	47.8	41.8	40.5–43.0

(a) Separations per 100,000 mid-1996 total Australian population.

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

(c) Principal diagnosis of chest pain plus additional diagnosis of heart disease.

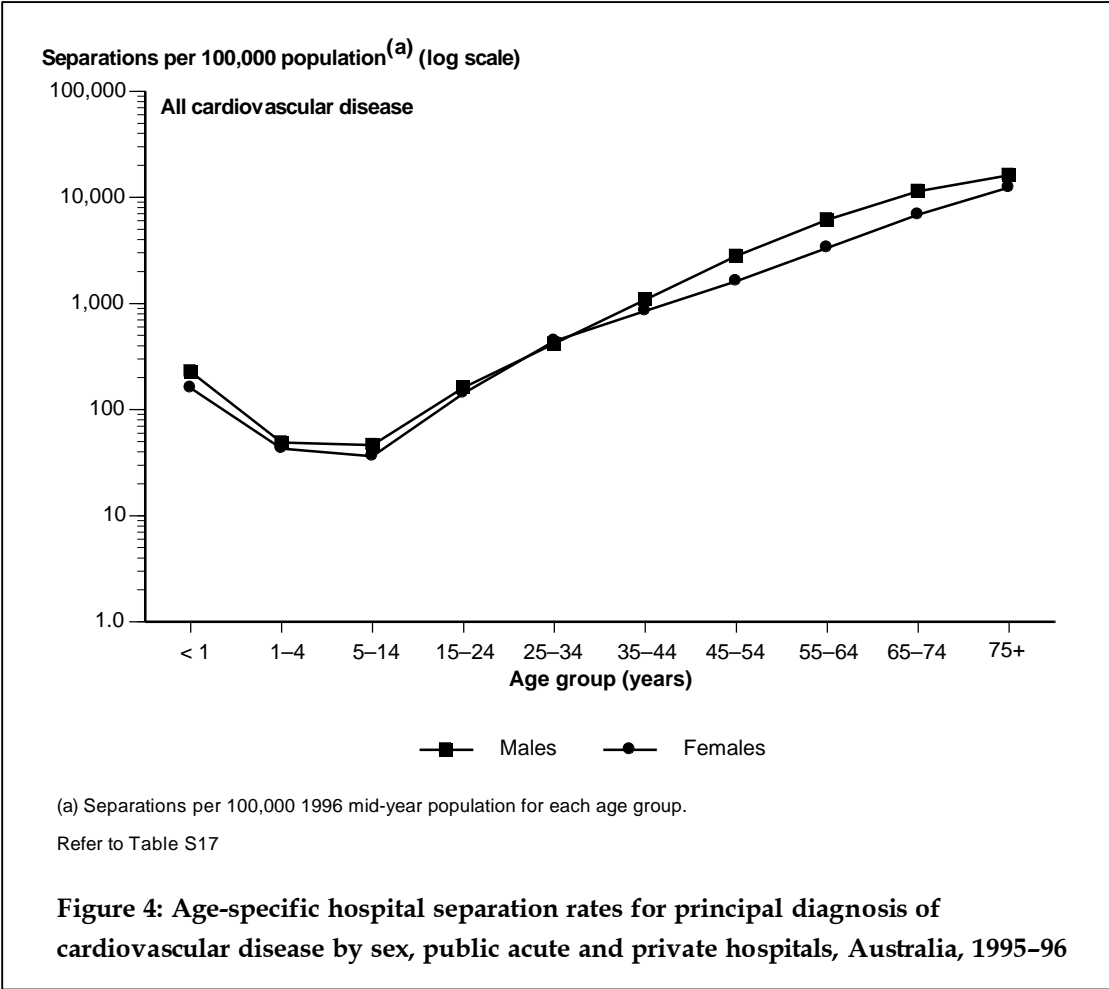
For each of the cardiovascular conditions included here, hospital separation rates tended to increase with age but were usually higher among males and females under the age of 1 year than among children aged 1–15 years (Figures 4–6).

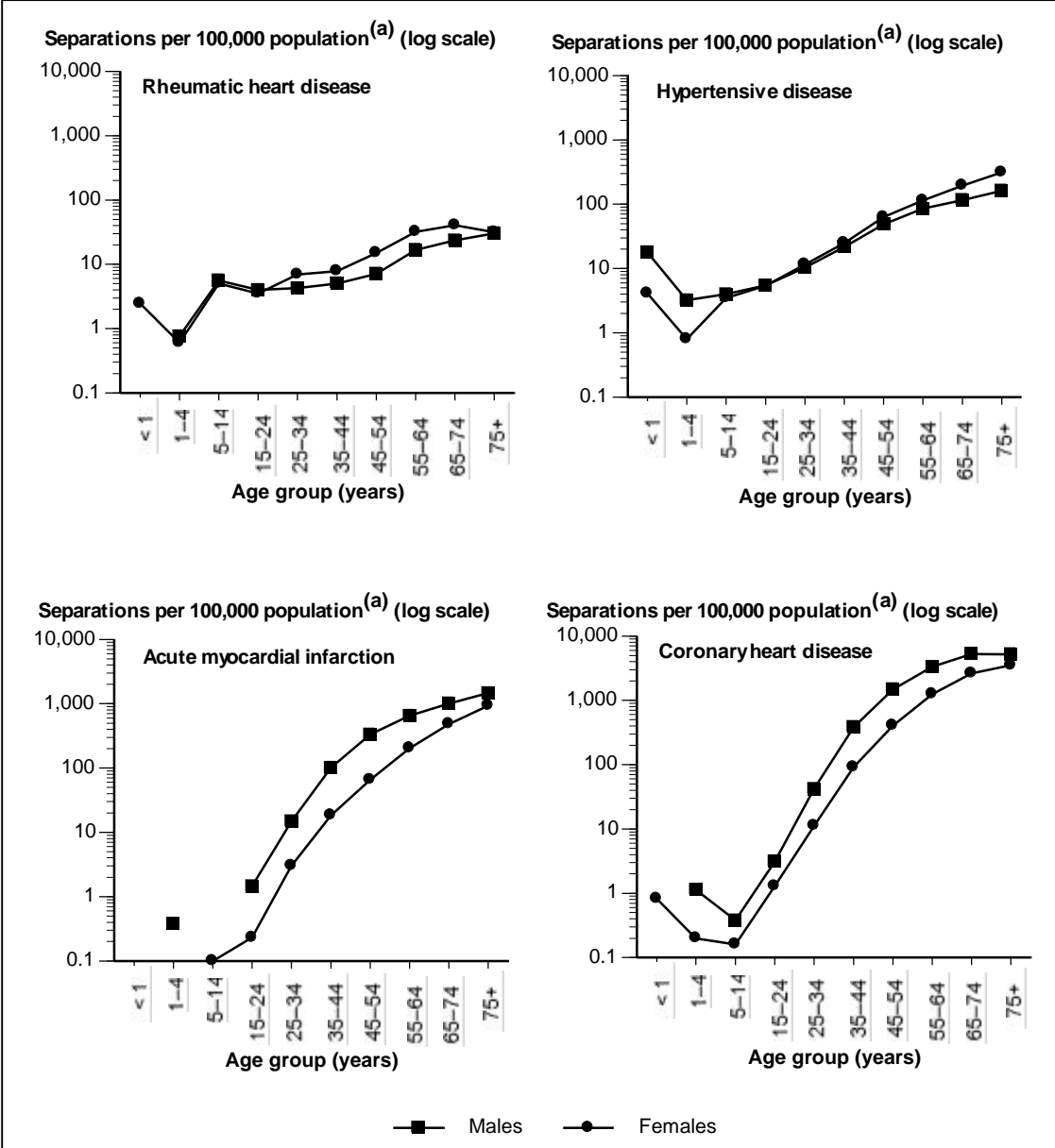
Age-specific and age-standardised separation rates indicate that, in 1995–96, males were significantly more likely than females to have a principal diagnosis of cardiovascular disease (Figure 4, Table 16). In general, males also had significantly higher separation rates than females for principal diagnoses of coronary heart disease, heart failure, cerebrovascular disease, peripheral vascular disease and chest pain associated with heart disease (Figures 5–6, Table 16). However, separation rates for principal diagnoses of rheumatic heart disease and hypertensive disease tended to be higher among females than males.

The average length of stay associated with a principal diagnosis of cardiovascular disease was 6.6 days in 1995–96 (based on a total of 2,722,415 patient days). Of the specific cardiovascular conditions included here, cerebrovascular disease had the longest average

length of stay (12.5 days), followed by heart failure (9.6 days), peripheral vascular disease (9.1 days), rheumatic heart disease and hypertensive disease (7.5 days), acute myocardial infarction (7.2 days), and coronary heart disease (5.3 days). Patients with a principal diagnosis of chest pain associated with heart disease had an average length of stay of 2.9 days.

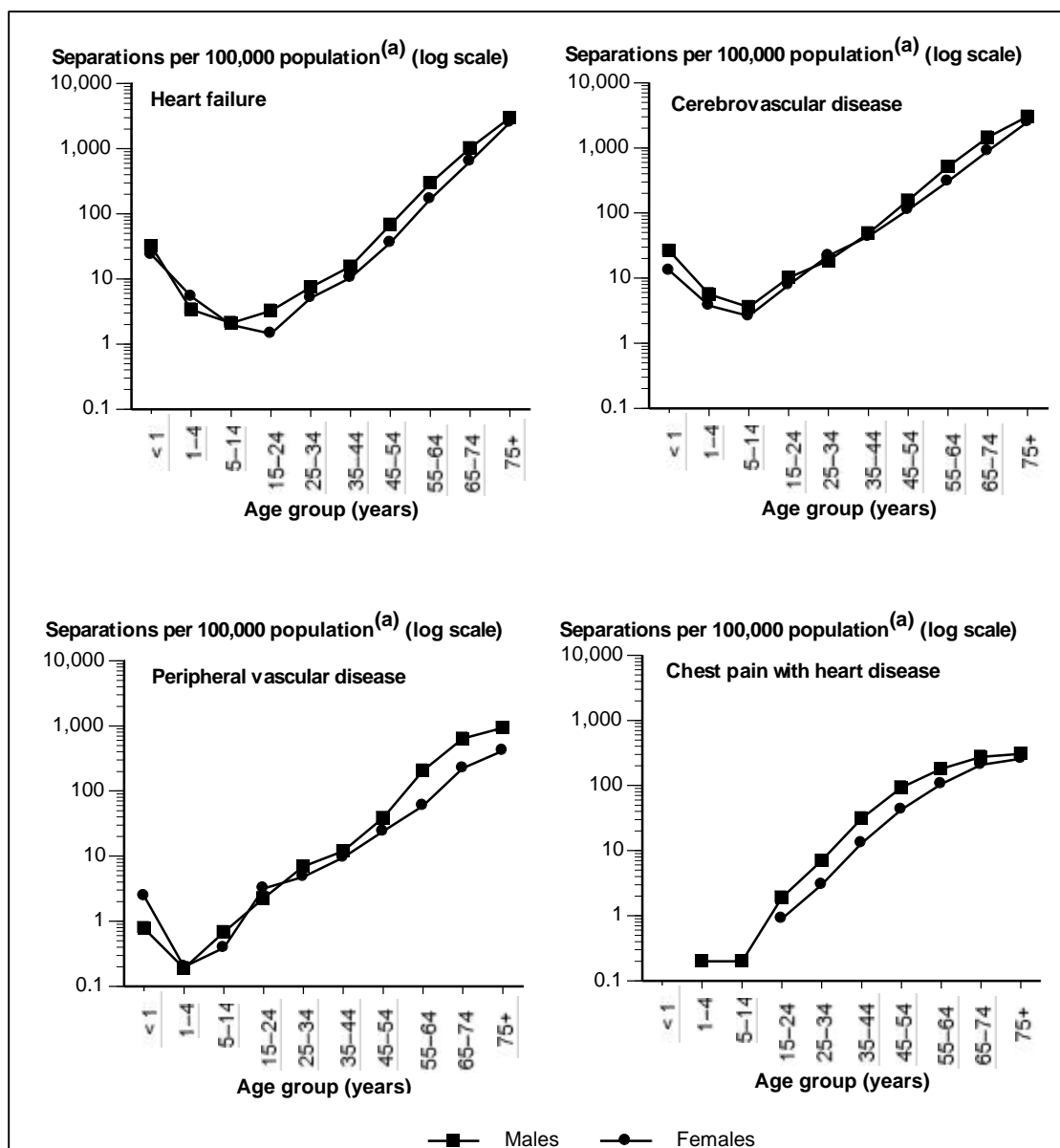
Although males generally had higher separation rates than females for principal diagnosis of cardiovascular conditions, females tended to have slightly longer average lengths of stay for most of these conditions than males (Table 16).





(a) Separations per 100,000 1996 mid-year population for each age group.  
Refer to Tables S18–S21

**Figure 5: Age-specific hospital separation rates for principal diagnosis of rheumatic heart disease, hypertensive disease, acute myocardial infarction and coronary heart disease by sex, public acute and private hospitals, Australia, 1995–96**



(a) Separations per 100,000 1996 mid-year population for each age group.

Refer to Tables S22-S25

**Figure 6: Age-specific hospital separation rates for principal diagnosis of heart failure, cerebrovascular disease, peripheral vascular disease, and chest pain with heart disease by sex, public acute and private hospitals, Australia, 1995-96**

## Cardiovascular disease as principal or additional diagnosis

Almost one fifth of all public acute and private separations in 1995-96 were associated with at least one diagnosis of cardiovascular disease (1,027,934 separations).

The number of separations with a diagnosis of hypertensive disease increased dramatically when principal or additional diagnosis was considered and accounted for 9% (464,890 separations) of all separations in 1995-96. This indicates that most (98%) hypertensive

disease was reported as a comorbidity rather than as a principal diagnosis (2%). In contrast, acute myocardial infarction was reported as the principal diagnosis in 69% of separations where it was diagnosed.

With the exception of rheumatic heart disease, males had higher age-standardised separation rates than females for all the cardiovascular conditions included here but females had slightly higher average lengths of stay than males (Table 17).

**Table 17: Separations and average length of stay for principal or additional diagnosis of cardiovascular conditions by sex, public acute and private hospitals, Australia, 1995–96**

Condition/sex	Number of separations <sup>(a)</sup>	Average length of stay (days)	Crude rate <sup>(b)</sup>	Age-standardised rate <sup>(c)</sup>	95% confidence interval for age-standardised rate
<b>Males</b>					
Rheumatic heart disease	3,522	8.7	38.7	40.7	39.3–42.0
Hypertensive disease	210,616	6.3	2,313.3	2,388.8	2,379.0–2,398.5
Acute myocardial infarction	31,317	7.3	344.0	350.9	347.0–354.8
Coronary heart disease	212,291	6.4	2,331.7	2,425.5	2,415.7–2,435.2
Heart failure	72,462	10.5	795.9	878.7	872.6–884.9
Cerebrovascular disease	60,176	14.0	660.9	708.6	703.0–714.1
Peripheral vascular disease	33,464	10.6	367.6	392.4	388.2–396.5
<b>All cardiovascular disease<sup>(d)</sup></b>	<b>524,275</b>	<b>7.2</b>	<b>5,758.3</b>	<b>5,984.0</b>	<b>5,970.1–5,997.9</b>
Chest pain with heart disease <sup>(e)</sup>	7,867	4.0	86.4	87.7	85.7–89.6
<b>Females</b>					
Rheumatic heart disease	6,564	8.6	71.5	62.6	61.1–64.1
Hypertensive disease	254,274	7.4	2,768.5	2,371.2	2,362.3–2,380.1
Acute myocardial infarction	16,556	9.8	180.3	149.1	146.8–151.4
Coronary heart disease	144,661	8.4	1,575.1	1,294.8	1,288.3–1,301.3
Heart failure	81,020	13.0	882.1	667.0	662.5–671.5
Cerebrovascular disease	54,700	16.8	595.6	476.5	472.5–480.5
Peripheral vascular disease	20,336	11.6	221.4	182.2	179.6–184.7
<b>All cardiovascular disease<sup>(d)</sup></b>	<b>503,659</b>	<b>8.5</b>	<b>5,483.8</b>	<b>4,675.2</b>	<b>4,663.4–4,687.1</b>
Chest pain with heart disease <sup>(e)</sup>	6,320	4.9	68.8	59.5	58.0–61.0

(a) Only one diagnosis per separation counted for each condition.

(b) Separations per 100,000 mid-1996 total Australian population.

(c) Age-standardised to the mid-1991 total Australian population.

(d) Components do not add to totals as each separation may have more than one type of cardiovascular condition reported.

(e) Principal or additional diagnosis of chest pain plus principal or additional diagnosis of heart disease.

## **Cardiovascular procedures**

In 1995-96, the National Hospital Morbidity Database included information on principal procedure and up to 28 additional procedures.

Commonly recorded cardiovascular procedures in 1995-96 included diagnostic cardiac catheterisation, open heart coronary artery bypass surgery, diagnostic ultrasound, percutaneous transluminal coronary angioplasty (PTCA), percutaneous intracoronary stent implant, cardiac pacemaker insertion, electrophysiology studies, and cardiac stress tests and pacemaker checks (Tables 18 & 19).



## Box 8: Cardiovascular procedures explanatory notes

Information is provided here for major cardiac procedures, and for other cardiovascular operations and investigations. For each type of procedure, a separation was counted once only if it included a principal or additional procedure in the appropriate range. Separations were identified for the following procedures:

Procedure	ICD-9-CM procedure code
<b>Open heart—valve surgery</b>	
Reconstruction	35.1
Replacement	35.2
<b>Interventional cardiology</b>	
Percutaneous transluminal coronary angioplasty (PTCA)	36.01, 36.02, or 36.05
Percutaneous intracoronary stent implant	36.06
Other	35.96, 36.04, or 36.09
<b>Open heart—coronary bypass surgery</b>	
Coronary bypass surgery	36.1
Coronary bypass surgery with valve procedure	36.1 & (35.1 or 35.2)
Coronary bypass surgery with excision of aneurysm or infarct	36.1 & (37.32 or 37.33)
Coronary bypass surgery with repair of ventricular septal defect	36.1 & (35.50, 35.53, 35.60, 35.62, 35.70, or 35.72)
<b>Other cardiothoracic surgery</b>	
With cardiopulmonary bypass	39.61 & (35.00–35.04, 35.31–35.39, 35.42, 35.50–35.99, 36.03, 36.20–36.99, 37.10–37.12, 37.24, 37.31–37.33, 37.4, 37.61–37.64, 37.91, 37.99, 38.05, 38.15, 38.35, 38.45, 38.55, 38.65, 38.85, 39.00, 39.21, or 39.23)
Without cardiopulmonary bypass	No procedure code of 39.61 & (35.00–35.04, 35.31–35.39, 35.42, 35.50–35.99, 36.03, 36.20–36.99, 37.10–37.12, 37.24, 37.31–37.33, 37.4, 37.61–37.64, 37.91, 37.99, 38.05, 38.15, 38.35, 38.45, 38.55, 38.65, 38.85, 39.00, 39.21, or 39.23)
<b>Other cardiovascular procedures</b>	
Catheter ablation of lesion of heart	37.34
Electrophysiology studies	37.26 or 37.27
Heart or heart-lung transplant	37.5 or 33.6
Cardiac pacemaker device insertion (permanent)	37.80–37.87
Implantation of automatic implantable cardiac defibrillator (AICD)	37.94–37.98
Operations on vessels	38 or 39
<b>Diagnostic and nonsurgical procedures</b>	
Arteriography using contrast material	88.40–88.45 or 88.47–88.49
Cardiac catheterisation (diagnostic) or angiocardiology using contrast material	37.21–37.23 or 88.5
Coronary arteriography	88.55–88.57
Other angiocardiology using contrast medium	88.50–88.54 or 88.58
Diagnostic ultrasound	88.72 or 88.77
Cardiac stress tests and pacemaker checks	89.4
Other non-operative cardiac and vascular diagnostic procedures	89.5

**Table 18: Separations and average length of stay for cardiovascular procedures for males, public acute and private hospitals, Australia, 1995–96**

Procedure	Number of separations <sup>(a)</sup>	Average length of stay (days)	Crude rate <sup>(b)</sup>	Age-standardised rate <sup>(c)</sup>	95% confidence interval for age-standardised rate
<b>Open heart valve surgery</b>					
Reconstruction	335	11.9	3.7	3.7	3.3–4.1
Replacement	2,043	13.7	22.4	22.9	21.9–23.9
<b>Interventional cardiology</b>					
Percutaneous transluminal coronary angioplasty (PTCA)	9,086	4.2	99.8	97.6	95.6–99.6
Percutaneous intracoronary stent implant	2,762	4.8	30.3	29.6	28.5–30.7
Other	153	6.7	1.7	1.7	1.4–1.9
<b>Open heart coronary bypass surgery</b>					
Coronary bypass surgery	13,492	11.3	148.2	148.3	145.8–150.8
Coronary bypass surgery with valve procedure	882	13.6	9.7	10.1	9.4–10.8
Coronary bypass surgery with excision of aneurysm or infarct	51	13.2	0.6	0.6	0.4–0.7
Coronary bypass surgery with repair of ventricular septal defect	13	10.5	0.1	*0.2	0.1–0.2
<b>Other cardiothoracic surgery</b>					
With cardiopulmonary bypass	1,520	13.8	16.7	16.9	16.0–17.7
Without cardiopulmonary bypass	1,051	13.4	11.5	11.8	11.0–12.5
<b>Other cardiovascular procedures</b>					
Catheter ablation of lesion of heart	688	2.9	7.6	7.5	6.9–8.1
Electrophysiology studies	1,701	4.8	18.7	18.6	17.7–19.5
Heart or heart-lung transplant	85	19.7	0.9	0.9	0.7–1.1
Cardiac pacemaker device insertion (permanent)	3,455	5.5	38.0	41.2	39.8–42.6
Implantation of automatic implantable cardiac defibrillator (AICD)	214	13.6	2.4	2.4	2.0–2.7
Operations on vessels	252,271	3.3	2,770.8	2,767.4	2,756.9–2,777.9
<b>Diagnostic and nonsurgical procedures</b>					
Arteriography using contrast material	15,293	8.7	168.0	173.1	170.3–175.8
Cardiac catheterisation (diagnostic) or angiocardiology using contrast material	45,661	4.2	501.5	495.4	490.8–499.9
Coronary arteriography	42,870	4.0	470.9	464.8	460.4–469.2
Other angiocardiology using contrast medium	31,156	4.2	342.2	337.9	334.2–341.7
Diagnostic ultrasound	12,716	11.6	139.7	143.5	141.0–146.0
Cardiac stress tests and pacemaker checks	2,547	6.3	28.0	27.9	26.8–29.0
Other non-operative cardiac and vascular diagnostic procedures	3,409	6.5	37.4	38.9	37.6–40.2

(a) Principal or additional procedure; only one procedure per separation counted.

(b) Separations per 100,000 mid-1996 total Australian population.

(c) Age-standardised to the mid-1991 total Australian population.

\* Estimate has a relative standard error greater than 25% and therefore should be interpreted with caution.

**Table 19: Separations and average length of stay for cardiovascular procedures for females, public acute and private hospitals, Australia, 1995–96**

Procedure	Number of separations <sup>(a)</sup>	Average length of stay (days)	Crude rate <sup>(b)</sup>	Age-standardised rate <sup>(c)</sup>	95% confidence interval for age-standardised rate
<b>Open heart valve surgery</b>					
Reconstruction	245	13.2	2.7	2.6	2.3–3.0
Replacement	1,364	14.0	14.9	13.5	12.8–14.3
<b>Interventional cardiology</b>					
Percutaneous transluminal coronary angioplasty (PTCA)	3,168	5.2	34.5	32.2	31.1–33.4
Percutaneous intracoronary stent implant	874	6.0	9.5	8.9	8.3–9.5
Other	198	5.2	2.2	2.0	1.7–2.3
<b>Open heart coronary bypass surgery</b>					
Coronary bypass surgery	4,184	12.9	45.6	41.8	40.6–43.1
Coronary bypass surgery with valve procedure	372	15.4	4.1	3.6	3.2–3.9
Coronary bypass surgery with excision of aneurysm or infarct	23	16.8	0.3	*0.2	0.1–0.3
Coronary bypass surgery with repair of ventricular septal defect	17	13.2	0.2	*0.2	0.1–0.2
<b>Other cardiothoracic surgery</b>					
With cardiopulmonary bypass	1,027	13.4	11.2	11.2	10.5–11.9
Without cardiopulmonary bypass	847	11.7	9.2	9.1	8.4–9.7
<b>Other cardiovascular procedures</b>					
Catheter ablation of lesion of heart	844	2.3	9.2	9.0	8.4–9.6
Electrophysiology studies	1,469	3.1	16.0	15.5	14.7–16.3
Heart or heart-lung transplant	26	15.7	0.3	0.3	0.2–0.4
Cardiac pacemaker device insertion (permanent)	2,581	5.8	28.1	22.7	21.8–23.6
Implantation of automatic implantable cardiac defibrillator (AICD)	83	12.6	0.9	0.8	0.7–1.0
Operations on vessels	196,421	3.0	2,138.6	2,040.1	2,031.3–2,049.0
<b>Diagnostic and nonsurgical procedures</b>					
Arteriography using contrast material	10,302	9.3	112.2	100.4	98.4–102.3
Cardiac catheterisation (diagnostic) or angiocardiology using contrast material	21,630	4.5	235.5	220.5	217.6–223.4
Coronary arteriography	20,155	4.4	219.5	204.7	201.9–207.6
Other angiocardiology using contrast medium	14,922	4.5	162.5	152.2	149.7–154.6
Diagnostic ultrasound	10,843	11.8	118.1	105.6	103.6–107.6
Cardiac stress tests and pacemaker checks	1,510	6.9	16.4	15.0	14.3–15.8
Other non-operative cardiac and vascular diagnostic procedures	2,842	7.7	30.9	27.1	26.1–28.1

(a) Principal or additional procedure; only one procedure per separation counted.

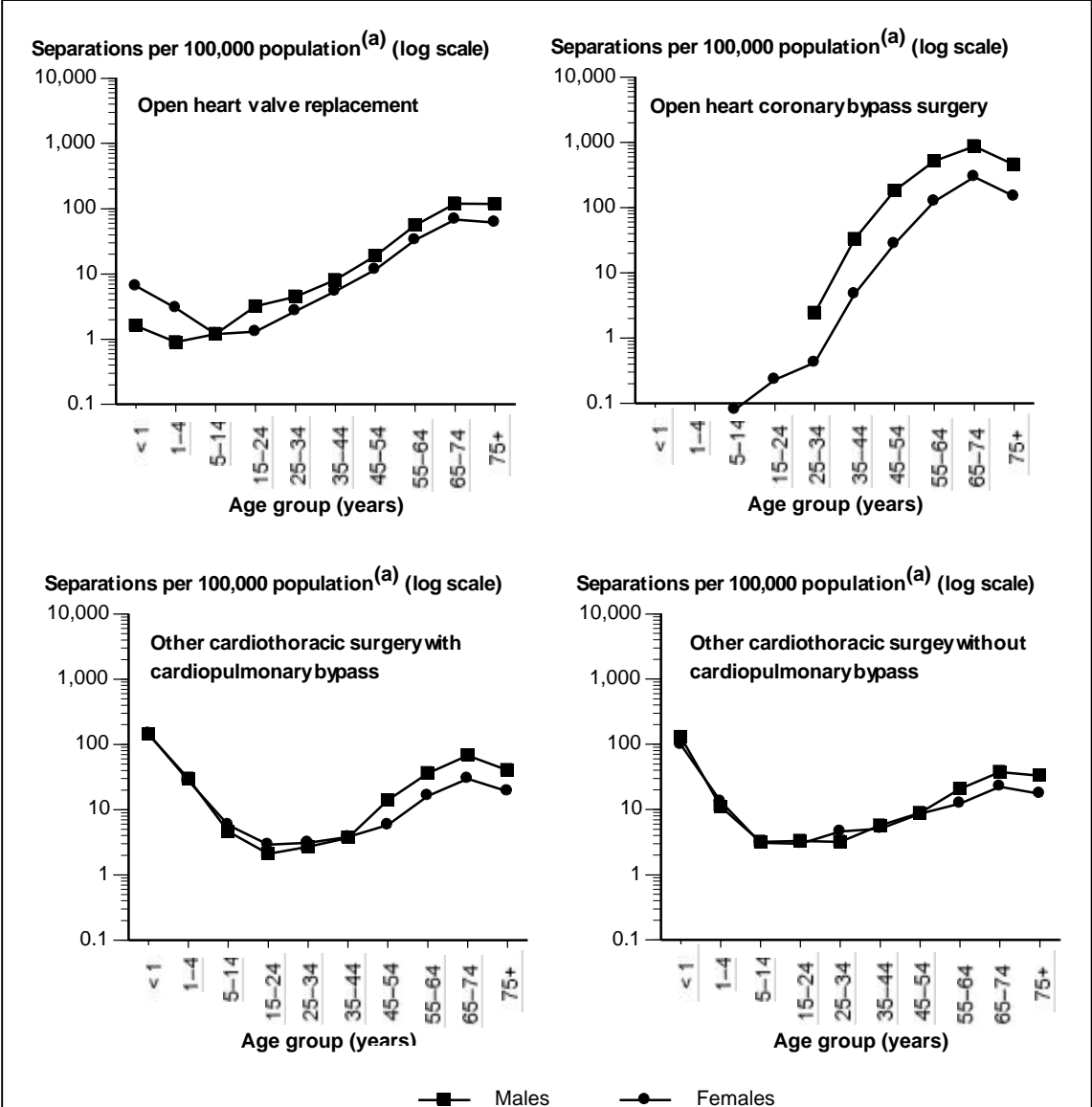
(b) Separations per 100,000 mid-1996 total Australian population.

(c) Age-standardised to the mid-1991 total Australian population.

\* Estimate has a relative standard error greater than 25% and therefore should be interpreted with caution.

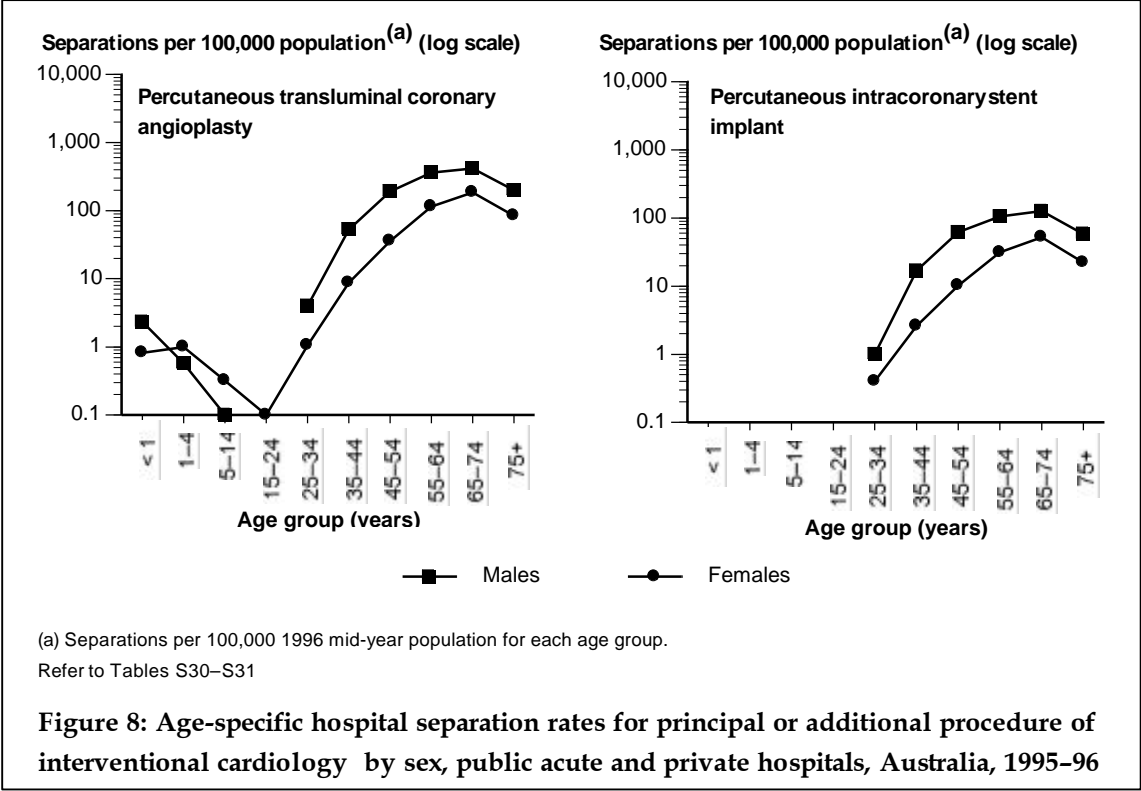
Separation rates for cardiovascular procedures were generally higher for males than females (Tables 18 & 19, Figures 7-9). However, for most of the procedures included here, females tended to have slightly longer average lengths of stay than males.

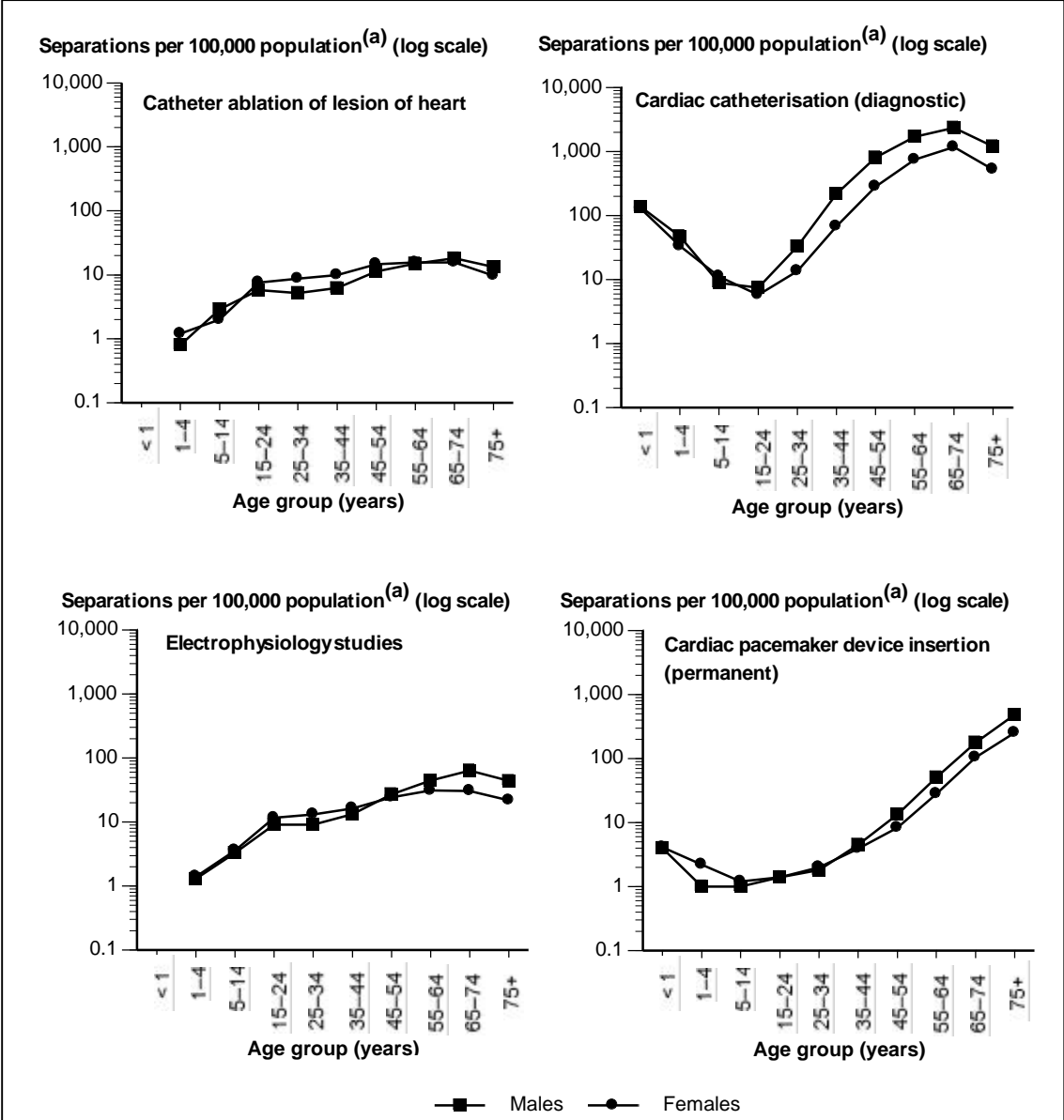
Age-specific rates indicate a general increase in separations for cardiovascular procedures with age, particularly in the age groups from 15 to 74 years (Figures 7-9).



(a) Separations per 100,000 1996 mid-year population for each age group. Refer to Tables S26-S29

**Figure 7: Age-specific hospital separation rates for principal or additional procedure of cardiothoracic surgery by sex, public acute and private hospitals, Australia, 1995-96**





(a) Separations per 100,000 1996 mid-year population for each age group. Refer to Tables S32–S35

**Figure 9: Age-specific hospital separation rates for principal or additional procedure of selected other cardiovascular procedures by sex, public acute and private hospitals, Australia, 1995–96**

## Cardiac procedures for congenital heart disease

Information is provided for cardiac procedures undertaken for congenital heart disease.

Of the congenital heart conditions included here, atrial septal defect was associated with the largest number of cardiac procedures for both males and females in 1995–96 (Tables 20 & 21). This was followed by ventricular septal defect and valve defects.

The number of separations for persons with congenital heart conditions who underwent cardiac procedures was highest in the under 1 year age group for all the conditions included here. The separation rate per 100,000 population was higher for males under the age of one year than for females of the same age for all conditions except valve defects.

Among males, average length of stay was highest for those undergoing cardiac procedures for transposition of the great vessels (21.4 days) (Tables 20 & 21). For females, average length of stay was highest for patent ductus arteriosus (19.7 days). Among those aged under one year, females had higher average lengths of stay than males for patent ductus arteriosus, coarctation of aorta, atrial septal defect and valve defects.

### Box 9: Congenital heart disease explanatory notes

*For each category, a separation was counted once only if it included a principal or additional diagnosis of the relevant congenital condition as well as a principal or additional procedure in the appropriate range.*

*Identification of separations was as follows:*

<b>Congenital heart condition (ICD-9-CM diagnostic code)</b>	<b>ICD-9-CM procedure codes</b>
Transposition of the great vessels (745.1)	35.30–35.39, 35.81–35.99, 36.91–36.99, 37.31–37.5, 38.00, 38.04, 38.05, 38.10, 38.14, 38.15, 30.30, 38.34, 38.35, 38.40, 38.45, 39.0, 39.21, 39.22 or 39.23
Patent ductus arteriosus (747.0)	35.30–35.39, 35.81–35.99, 36.91–36.99, 37.31–37.5, 38.00, 38.04, 38.05, 38.10, 38.14, 38.15, 30.30, 38.34, 38.35, 38.40, 38.45, 39.0, 39.21, 39.22 or 39.23
Coarctation of aorta (747.1)	35.30–35.39, 35.81–35.99, 36.91–36.99, 37.31–37.5, 38.00, 38.04, 38.05, 38.10, 38.14, 38.15, 30.30, 38.34, 38.35, 38.40, 38.45, 39.0, 39.21, 39.22 or 39.23
Tetralogy of Fallot (745.2)	35.00–36.99, 37.10–37.12, 37.31–37.5, 38.00, 38.04, 38.05, 38.10, 38.14, 38.15, 30.30, 38.34, 38.35, 38.40, 38.45, 39.0, 39.21 39.22 or 39.23
Ventricular septal defect (745.4)	35.50–35.99 or 37.4
Atrial septal defect (745.5)	35.50–35.99 or 37.4
Valve defects (746.0–746.6)	35.10–35.14, 35.20–35.28, 35.81–35.99 or 37.4

**Table 20: Separations and average length of stay for cardiac procedures for congenital heart disease for males, public acute and private hospitals, Australia, 1995–96**

Congenital heart condition	Age group (years)				All ages
	< 1	1–4	5–14	15+	
<b>Transposition of the great vessels</b>					
Number of separations <sup>(a)</sup>	70	24	8	6	<b>108</b>
Age-specific rate <sup>(b)</sup>	54.3	4.5	0.6	0.1	<b>1.2</b>
Average length of stay (days)	26.0	14.8	9.4	11.2	<b>21.4</b>
<b>Patent ductus arteriosus</b>					
Number of separations <sup>(a)</sup>	92	8	3	2	<b>105</b>
Age-specific rate <sup>(b)</sup>	71.4	1.5	0.2	0.0	<b>1.2</b>
Average length of stay (days)	23.1	5.1	2.0	12.0	<b>20.9</b>
<b>Coarctation of aorta</b>					
Number of separations <sup>(a)</sup>	44	8	12	9	<b>73</b>
Age-specific rate <sup>(b)</sup>	34.1	1.5	0.9	0.1	<b>0.8</b>
Average length of stay (days)	14.5	18.3	5.4	4.2	<b>12.2</b>
<b>Tetralogy of Fallot</b>					
Number of separations <sup>(a)</sup>	29	35	3	5	<b>72</b>
Age-specific rate <sup>(b)</sup>	22.5	6.6	0.2	0.1	<b>0.8</b>
Average length of stay (days)	16.5	11.6	27.7	9.0	<b>14.1</b>
<b>Ventricular septal defect</b>					
Number of separations <sup>(a)</sup>	88	68	20	15	<b>191</b>
Age-specific rate <sup>(b)</sup>	68.3	12.8	1.5	0.2	<b>2.1</b>
Average length of stay (days)	16.6	12.5	7.7	14.0	<b>14.0</b>
<b>Atrial septal defect</b>					
Number of separations <sup>(a)</sup>	78	51	27	59	<b>215</b>
Age-specific rate <sup>(b)</sup>	60.5	9.6	2.0	0.8	<b>2.4</b>
Average length of stay (days)	15.7	8.2	6.3	10.4	<b>11.3</b>
<b>Valve defects</b>					
Number of separations <sup>(a)</sup>	40	34	22	94	<b>190</b>
Age-specific rate <sup>(b)</sup>	31.0	6.4	1.7	1.3	<b>2.1</b>
Average length of stay (days)	13.2	10.4	6.8	12.0	<b>11.4</b>

(a) Principal or additional procedure.

(b) Separations per 100,000 mid-1996 Australian population for sex and age group.



**Table 21: Separations and average length of stay for cardiac procedures for congenital heart disease for females, public acute and private hospitals, Australia, 1995–96**

Congenital heart condition	Age group (years)				All ages
	< 1	1–4	5–14	15+	
<b>Transposition of the great vessels</b>					
Number of separations <sup>(a)</sup>	32	12	6	0	<b>50</b>
Age-specific rate <sup>(b)</sup>	26.2	2.4	0.5	0.0	<b>0.5</b>
Average length of stay (days)	14.3	12.8	7.3	0.0	<b>13.1</b>
<b>Patent ductus arteriosus</b>					
Number of separations <sup>(a)</sup>	54	17	6	3	<b>80</b>
Age-specific rate <sup>(b)</sup>	44.1	3.4	0.5	0.0	<b>0.9</b>
Average length of stay (days)	26.9	6.2	1.8	1.3	<b>19.7</b>
<b>Coarctation of aorta</b>					
Number of separations <sup>(a)</sup>	31	5	6	12	<b>54</b>
Age-specific rate <sup>(b)</sup>	25.3	1.0	0.5	0.2	<b>0.6</b>
Average length of stay (days)	21.2	6.6	6.8	6.4	<b>15.0</b>
<b>Tetralogy of Fallot</b>					
Number of separations <sup>(a)</sup>	24	24	5	5	<b>58</b>
Age-specific rate <sup>(b)</sup>	19.6	4.8	0.4	0.1	<b>0.6</b>
Average length of stay (days)	16.0	13.0	10.4	13.6	<b>14.1</b>
<b>Ventricular septal defect</b>					
Number of separations <sup>(a)</sup>	82	44	20	18	<b>164</b>
Age-specific rate <sup>(b)</sup>	67.0	8.8	1.6	0.2	<b>1.8</b>
Average length of stay (days)	16.7	11.8	8.0	11.3	<b>13.7</b>
<b>Atrial septal defect</b>					
Number of separations <sup>(a)</sup>	68	75	33	113	<b>289</b>
Age-specific rate <sup>(b)</sup>	55.6	14.9	2.6	1.5	<b>3.2</b>
Average length of stay (days)	17.1	7.0	6.6	8.6	<b>9.9</b>
<b>Valve defects</b>					
Number of separations <sup>(a)</sup>	39	42	19	39	<b>139</b>
Age-specific rate <sup>(b)</sup>	31.9	8.4	1.5	0.5	<b>1.5</b>
Average length of stay (days)	14.7	9.9	7.5	10.3	<b>11.1</b>

(a) Principal or additional procedure.

(b) Separations per 100,000 mid-1996 Australian population for sex and age group.