Glossary

Allograft valve (homograft): a human valve used for transplantation.

Acquired valve disease: valve disease that is neither genetic nor present at birth.

Anastomosis: connection between blood vessels.

Angioplasty: (see ***percutaneous transluminal coronary angioplasty***)

Aortic valve: valve between the left ventricle and the aorta.

Arrhythmia: any abnormality in the heartbeat, making it beat too fast, too slow or irregularly.

Bioprosthetic valves: either specially-treated pig heart valves or from the sac tissue around a cow's heart (pericardium) so their function closely approximates that of a normal human valve.

Cardiomyopathy: a disease of the heart muscle.

Cardiopulmonary bypass: diversion of the blood circulation from the heart and lungs and the pumping of blood through a heart–lung machine to provide oxygen while the heart is stopped during surgery.

Congenital heart defect: heart disorder present at birth.

Coronary artery bypass grafting (CABG): grafting of blood vessel(s) to bypass obstructions in coronary arteries and improve the supply of blood to the heart.

Coronary artery disease: any disease of the coronary arteries, particularly atherosclerosis, that reduces the flow of blood and hence the oxygen supply to the heart muscle.

Fibrillation: rapid, uncoordinated quivering of the muscle fibres of the heart instead of beating, so it cannot pump.

Heterograft valve (xenograft): an animal valve used for transplantation.

Homograft valve (allograft): a human valve used for transplantation.

Internal mammary artery: an artery in the chest commonly used as a conduit in coronary artery bypass grafting; that is, it is used as a graft.

Ischaemic heart disease: heart disease caused by inadequate flow of blood to the heart. Manifestations include angina and heart attack. Also known as coronary heart disease.

Mechanical valves: made of high-technology materials such as titanium and pyrolitic carbon. They require lifelong use of anticoagulants (blood thinners) to prevent the adherence of blood clots to the valve mechanism.

Mitral valve: valve between the left atrium and the left ventricle.

Myocardial infarction: death of part of the heart muscle deprived of an adequate blood supply by an acute coronary artery blockage (heart attack).

Myocardium: the muscular wall of the heart.

Newer CABG modalities: alternative procedures to the standard techniques for coronary artery bypass grafting. They include operations done while the heart is beating (that is, without cardiopulmonary bypass) and minimally invasive techniques such as port-access coronary artery surgery. The latter involves making small cuts (ports) in the patient's chest

through which surgical instruments are passed to do the coronary bypasses, rather than opening the chest.

Percutaneous coronary intervention (PCI): a term used to encompass all forms of revascularisation where entry to the vessel is via the skin (percutaneous), including balloon angioplasty, coronary stenting etc.

Percutaneous transluminal coronary angioplasty (PTCA): a method of treating localised coronary artery narrowing, using a special catheter with a balloon that can be inflated to dilate the narrowed vessel. Usually referred to as coronary angioplasty.

Pulmonary valve: valve between the right ventricle and the pulmonary artery.

Saphenous vein: a blood vessel in the leg; commonly used as a supply of conduits for coronary artery bypass grafting.

Separation: refers to the episode of care in hospital. It also means the process by which an admitted patient completes an episode of care by being discharged, dying, transferring to another hospital or changing the type of care.

Stenosis: narrowing, such as occurs inside a blood vessel or to the opening of a valve.

Supraventricular tachycardia: episodes of abnormally fast heart rate. These are caused by fast spontaneous impulses, arising in the upper chambers of the heart, that override the natural pacemaker.

Tachycardia: a rapid heart rate.

Transmyocardial laser revascularisation (TMLR): a new technique where laser energy is used to drill small holes or channels through the myocardium using laser energy in an attempt to improve blood supply to the heart in cases unsuitable for coronary artery bypass grafting or coronary angioplasty.

Tricuspid valve: valve between the right atrium and the right ventricle.

Valvotomy: a procedure that opens up a stenosed (unnaturally narrow) heart valve and allows it to function properly.

Xenograft valve (heterograft): an animal valve used for transplantation.

Appendix A: Cardiac surgery units

Table A1: Cardiac surgery units operating in 1999

State	Unit
New South Wales	John Hunter Hospital
	Lake Macquarie Private Hospital
	Liverpool Hospital
	New Children's Hospital
	NSW Private Hospital
	Royal North Shore Hospital
	Royal Prince Alfred Hospital
	St George Hospital
	St Vincent's Hospital
	St Vincent's Private Hospital
	Strathfield Private Hospital
	Sydney Adventist Hospital
	Sydney Children's Hospital
	Sydney South West Private Hospital
	The Hills Private Hospital
	The Prince of Wales Hospital
	The Prince of Wales Private Hospital
	Westmead Hospital
Victoria	Austin Repatriation Medical Centre
	Cabrini Hospital
	Epworth Hospital
	Knox Private Hospital
	Melbourne Private Hospital
	Monash Medical Centre
	Royal Children's Hospital
	Royal Melbourne Hospital
	St Vincent's and Mercy Private Hospital
	St Vincent's Public Hospital
	The Alfred Hospital
	The Geelong Private Hospital
	Warringal Private Hospital

(continued)

Table A1 (continued): Cardiac surgery units operating in 1999

State	Unit
Queensland	Allamanda Private Hospital
	Greenslopes Private Hospital
	Mater Misericordiae Private Hospital
	Prince Charles Hospital
	Princess Alexandra Hospital
	St Andrews War Memorial Hospital
	Townsville General Hospital
	The John Flynn Hospital
	The Wesley Hospital
Western Australia	Fremantle Hospital
	Mount Hospital
	Royal Perth Hospital
	Sir Charles Gairdner Hospital
South Australia	Ashford Community Hospital
	Flinders Medical Centre
	Royal Adelaide Hospital
	Wakefield Hospital
	Women's and Children's Hospital
Tasmania	Royal Hobart Hospital
Australian Capital Territory	National Capital Private Hospital
	The Canberra Hospital

Appendix B: Data collection form

AUSTRALIAN INSTITUTE OF HEALTH AND WELFARE

CARDIAC SURGERY REGISTER

Annual report form for the year ending December 1999

To be completed by.....

CARDIAC SURGEONS

Name of hospital	
Calendar year in which data collected	**1999**
Name of surgeon responsible for report	
Name of Head of department	
Names of surgeons	
Names of trainees and status (i.e. R.A.C.S. approved trainee, service registrar, overseas registrar)*	
Names of Australians training overseas	

* **Please indicate if a foreign national visiting Australia for training.**

MISCELLANEOUS PROCEDURES

List here all procedures not readily fitting into any other section

Only enter here cases that do not fit into the specific categories used on subsequent pages. Please provide as much information as possible on these miscellaneous cases, such as the age of the patients, if the case involves a congenital defect, the number of grafts involved, if it includes coronary artery surgery, and the type of valve used if it is a valve case. If it is not obvious, please indicate whether cardiopulmonary bypass was used or not.

ACQUIRED DISEASE

Procedure	No.	D.

CONGENITAL DEFECTS

Procedure	No.	D.

Note: Throughout the form, the column heading 'No.' refers to the total number of operations in the particular category, not only the survivors of the operation. The column heading 'D.' refers to the number of deaths resulting from this total number of operations.

ACQUIRED DISEASE: VALVE SURGERY—SINGLE

SINGLE VALVE PROCEDURE			Without coronary artery graft		With coronary artery graft	
			No.	D.	No.	D.
MITRAL	Valvotomy					
	Reconstruction	*with support ring*				
		without ring				
	Replacement	*mitral homograft*				
		heterograft				
		prosthesis				
AORTIC	Valvotomy					
	Reconstruction	*decalcification*				
		for regurgitation				
		other/unstated				
	Replacement	*pulmonary autograft*				
		classical homograft				
		'mini root' homograft				
		'total root' homograft				
		stent mounted heterograft				
		stentless heterograft				
		prosthesis				
TRICUSPID	Reconstruction	*with support ring*				
		without ring				
	Replacement	*heterograft*				
		prosthesis				
PULMONARY	Reconstruction					
	Replacement*	*homograft*				
		heterograft				
		prosthesis				
TOTAL NUMBER OF PATIENTS						

* **In case of valve replacement using pulmonary autograft, please indicate the pulmonary replacement as an attached note. This will not be included as a double valve.**

Please note that we are no longer making a distinction between open and closed procedures so this form has changed slightly from previous years

ACQUIRED DISEASE: VALVE SURGERY—DOUBLE

DOUBLE VALVE PROCEDURE			Without coronary artery graft		With coronary artery graft	
			No.	D.	No.	D.
MITRAL	Valvotomy					
	Reconstruction	*with support ring*				
		without ring				
	Replacement	*mitral homograft*				
		heterograft				
		prosthesis				
AORTIC	Valvotomy					
	Reconstruction	*decalcification*				
		for regurgitation				
		other/unstated				
	Replacement	*pulmonary autograft*				
		classical homograft				
		'mini root' homograft				
		'total root' homograft				
		stent mounted heterograft				
		stentless heterograft				
		prosthesis				
TRICUSPID	Reconstruction	*with support ring*				
		without ring				
	Replacement	*heterograft*				
		prosthesis				
TOTAL NUMBER OF VALVES*						
TOTAL NUMBER OF PATIENTS						

* **By individual valves. As each patient has operations on two valves, the total number and total deaths must each add up to twice the number shown for total patients.**

ACQUIRED DISEASE: VALVE SURGERY—TRIPLE

TRIPLE VALVE PROCEDURE			Without coronary artery graft		With coronary artery graft	
			No.	D.	No.	D.
MITRAL	Valvotomy					
	Reconstruction	*With support ring*				
		Without ring				
	Replacement	*Mitral homograft*				
		Heterograft				
		Prosthesis				
AORTIC	Valvotomy					
	Reconstruction	*Decalcification*				
		for regurgitation				
		Other/unstated				
	Replacement	*Pulmonary autograft*				
		Classical homograft				
		'mini root' homograft				
		'total root' homograft				
		stent mounted heterograft				
		stentless heterograft				
		prosthesis				
TRICUSPID	Reconstruction	*with support ring*				
		without ring				
	Replacement	*heterograft*				
		prosthesis				
TOTAL NUMBER OF VALVES*						
TOTAL NUMBER OF PATIENTS						

* **By individual valves. As each patient has operations on three valves, the total number and total deaths must each add up to three times the number shown for total patients.**

ACQUIRED DISEASE: VALVE SURGERY RE-OPERATIONS

Some of the valve patients reported on pages 30, 31 and 32 will be having their second valve replacement. Please indicate the number of *valves* (not patients) replaced for:		**No.**	**D.**
MECHANICAL VALVES	Mechanical failure		
	Endocarditis		
	Paravalvular leak		
BIOPROSTHETIC VALVES	Degeneration		
	Endocarditis		
	Paravalvular leak		
ALLOGRAFT VALVES	Degeneration		
	Endocarditis		
	Paravalvular leak		

SURGERY FOR ACQUIRED CORONARY HEART DISEASE

WITH GRAFTS

Number of distal anastomoses	No other procedure		With valve surgery		With myocardial resection or plication		With repair of VSD		With other procedures		Total	
	No.	**D.**	**No.**	**D.**	**No.**	**D.**	**No.**	**D.**	**No.**	**D.**	**No.**	**D.**
1.												
2.												
3.												
4.												
5.												
6.												
7.												
8.												
9.												
TOTAL			**									
Re-operations for coronary artery disease*												

***** **Please make sure that the re-operations are also included in the main part of the table.**

****** **Please check that this total is the same as the total number of patients reported on pages 30, 31 & 32 as having coronary artery grafts as well as valve surgery.**

SURGERY FOR ACQUIRED CORONARY HEART DISEASE (cont.)

TYPE OF GRAFT

Please enter here how many of your patients had one of the following used as at least one of their grafts, so that we can calculate the use of each. Please report the number of *patients*, not grafts.

	No. of patients
Saphenous vein	
Internal mammary artery	
Inferior epigastric artery	
Gastroepiploic artery	
Cephalic vein	
Radial artery	
Prosthetic or bioprosthetic	

SURGERY FOR ACQUIRED CORONARY HEART DISEASE WITHOUT GRAFTS

	Myocardial resection or plication		**Closure of VSD**		**Other**		**Total**	
	No.	**D.**	**No.**	**D.**	**No.**	**D.**	**No.**	**D.**
Without grafts								

NON-CONVENTIONAL CABG

Some of the procedures already reported on pages 34 and 35 may have been done without CPB or using other non-conventional techniques. Please indicate here their number.

	No. of procedures
Without CPB	
Minimally invasive techniques	
CABG via full thoracotomy	

ACQUIRED DISEASE: GREAT VESSEL SURGERY

			Without coronary artery graft		With coronary artery graft	
			No.	D.	No.	D.
REPAIR OR REPLACEMENT OF ASCENDING AORTA						
Acute (dissection)	aortic repair	without valve resuspension				
	aortic repair	with valve resuspension				
	*composite graft replacing aortic valve and ascending aorta					
	*homograft replacement of aortic valve and ascending aorta					
	*separate aorta and valve replacement					
Chronic (for aneurysm or dissection)	aortic repair	without valve resuspension				
	aortic repair	with valve resuspension				
	*composite graft replacing aortic valve and ascending aorta					
	*homograft replacement of aortic valve and ascending aorta					
	*separate aorta and valve replacement					
REPLACEMENT OF AORTIC ARCH						
Complete		for aneurysm				
		for dissection				
Hemiarch replacement		for aneurysm				
		for dissection				
REPLACEMENT OF DESCENDING THORACIC AORTA						
		for aneurysm				
		for dissection				
TOTAL						

* **These cases should *not* be included under valve surgery.**

If hemiarch replacement is part of any of the above procedures, please indicate this in a footnote or attachment.

ACQUIRED DISEASE: OTHER CONDITIONS

TRANSPLANTATION		No.	D.
Cardiac	cardiomyopathy		
	ischaemia		
	other/unstated		
Heart–lung	congenital		
	other/unstated		
Lung	whole		
	lobe		
	bilateral		

		Without coronary artery graft		With coronary artery graft	
		No.	D.	No.	D.
ELECTROPHYSIOLOGICAL SURGERY					
SUPRAVENTRICULAR TACHYCARDIAS	Wolff-Parkinson White Syndrome				
	AV-Junction				
	Atrial fibrillation or flutter				
	AV node ablation				
VENTRICULAR TACHYCARDIAS	Recurrent ventricular tachycardia				
	–aneurysmectomy				
	–myocardial incision				
CARDIAC TUMOUR/ CARDIOMYOPATHY	myxoma				
	other cardiac tumour				
	IHSS				
TOTAL					

		Without coronary artery graft		With coronary artery graft	
		No.	D.	No.	D.
AUTOMATIC DEFIBRILLATOR	Patches				
	Transvenous				

ACQUIRED DISEASE: OTHER CONDITIONS (cont.)

		No.	D.
CARDIAC TRAUMA	atrium		
	ventricle		
	*valves		
	ascending aorta		
	descending aorta		
	other		
PULMONARY EMBOLECTOMY			
PERICARDIECTOMY FOR	tuberculosis		
	non-specific infection		
	uraemia		
	idiopathic		
	tumour (include pericardial windows)		
	other		
OTHER CONDITIONS	please list		
TOTAL			

* **These cases should not be included under valve surgery.**

TOTAL PATIENTS: ACQUIRED DISEASE	**WITHOUT GRAFTS**		**WITH GRAFTS**	
	No.	**D.**	**No.**	**D.**

CONGENITAL DEFECTS: VALVE SURGERY

SINGLE VALVE PROCEDURE			Under 1 month		1–6 months		Over 6 months	
			No.	D.	No.	D.	No.	D.
MITRAL	Valvotomy							
	Reconstruction							
	Replacement	*heterograft*						
		prosthesis						
AORTIC	Valvotomy							
	Reconstruction							
	Replacement	*Homograft*						
		Pulmonary autograft						
		heterograft						
		prosthesis						
TRICUSPID	Valvotomy							
	Reconstruction							
	Replacement	*heterograft*						
		prosthesis						
PULMONARY	Valvotomy							
	Reconstruction							
	Replacement	*homograft*						
		heterograft						
		prosthesis						
TOTAL NUMBER OF PATIENTS								

Please note that we are no longer making a distinction between open and closed procedures so this form has changed slightly from previous years

CONGENITAL DEFECTS: OTHER COMMON CONDITIONS

		Under 1 month		1–6 months		Over 6 months	
		No.	D.	No.	D.	No.	D.
PERSISTENT DUCTUS ARTERIOSUS							
COARCTATION OF AORTA							
Simple							
Complicated							
ATRIAL SEPTAL DEFECT							
VENTRICULAR SEPTAL DEFECT							
Uncomplicated	*palliative*						
	corrective						
With PS	*palliative*						
	corrective						
With pulmonary atresia	*palliative*						
	corrective						
TETRALOGY OF FALLOT							
Simple	*palliative*						
	corrective						
Complicated	*palliative*						
	corrective						
Acquired pulmonary atresia	*palliative*						
	corrective						
TOTALS (this page)							

CONGENITAL DEFECTS: OTHER COMMON CONDITIONS (cont.)

		Under 1 month		1–6 months		Over 6 months	
		No.	D.	No.	D.	No.	D.
TRANSPOSITION OF GREAT VESSELS							
With intact ventricular septum	*palliative*						
	corrective						
With VSD	*palliative*						
	corrective						
With other significant anomaly	*palliative*						
	corrective						
With inversion of ventricles*	*palliative*						
	corrective						
Corrected transposition & other significant anomaly	*palliative*						
	corrective						
TOTALS (this page)							

* **Formerly 'corrected transposition with VSD'.**

CONGENITAL DEFECTS: LESS COMMON CONDITIONS

		Under 1 month		1–6 months		Over 6 months	
		No.	D.	No.	D.	No.	D.
EXTRA-CARDIAC LESIONS							
	A-P window						
	Interrupted aortic arch						
	Vascular ring						
CORONARY ARTERY DEFECTS							
MISCELLANEOUS							
Total anomalous pulmonary venous return	*palliative*						
	corrective						
Asplenia syndrome	*palliative*						
	corrective						
Exploration only							
Surgical procedures for other conditions (please specify)							
TOTALS (this page)							

CONGENITAL DEFECTS: LESS COMMON CONDITIONS (cont.)

		Under 1 month		1–6 months		Over 6 months	
		No.	D.	No.	D.	No.	D.
RIGHT SIDED LESIONS							
Ebstein's anomaly	*palliative*						
	corrective						
Tricuspid atresia	*palliative*						
	corrective						
Pulmonary atresia (with intact septum)	*palliative*						
	corrective						
LEFT SIDED LESIONS							
Cor triatrium	*palliative*						
	corrective						
Mitral atresia							
Hypoplastic left heart syndrome							
Sub-aortic stenosis							
Supra valvular stenosis							
TOTALS (this page)							

CONGENITAL DEFECTS: LESS COMMON CONDITIONS (cont.)

		Under 1 month		1–6 months		Over 6 months	
		No.	D.	No.	D.	No.	D.
DEFECTS OF PARTITIONING							
AV Canal–partial	*palliative*						
	corrective						
AV Canal–total	*palliative*						
	corrective						
Double outlet RV	*palliative*						
	corrective						
Truncus arteriosus	*palliative*						
	corrective						
Other (please specify)							
TOTALS (this page)							
TOTAL PATIENTS : CONGENITAL DEFECTS (pages 39 to 44)							

Related publications

Australian Institute of Health and Welfare (AIHW) 2002. Australia's health 2002: the eighth biennial report of the Australian Institute of Health and Welfare. AIHW Cat. No. AUS 25. Canberra: AIHW.

AIHW 2001. Australian hospital statistics 1999–00. Health Services Series No. 17. AIHW Cat. No. HSE 14. Canberra: AIHW.

AIHW 2000. Australian hospital statistics 1998–99. Health Services Series No. 15. AIHW Cat. No. HSE 11. Canberra: AIHW.

AIHW 2001. Heart, stroke and vascular diseases—Australian facts 2001. Canberra: AIHW, National Heart Foundation of Australia (NHFA), National Stroke Foundation.

Davies J & Senes S 2001. Cardiac surgery in Australia 1998. Cardiovascular Disease Series No. 16. AIHW Cat. No. CVD 15. Canberra: AIHW & NHFA.

Davies J & Senes S 2002. Coronary angioplasty in Australia 1999. Cardiovascular Disease Series No. 19. AIHW Cat. No. 19. Canberra: AIHW & NHFA.

Mathur S 2002. Epidemic of coronary heart disease and its treatment in Australia. Cardiovascular Disease Series No. 20. AIHW Cat. No. CVD 21. Canberra: AIHW.

AIHW web site

Information relating to cardiovascular disease, its treatment and risk factors can be found on the Cardiovascular Health Portal and the National Cardiovascular Disease Database, both located on the Institute's web site http://www.aihw.gov.au