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# AUSTRALIAN LIVER TRANSPLANT REGISTRY



A map of Australia is centered on the page. The map is filled with a halftone dot pattern. Five major cities are marked with small squares and labeled: Perth on the west coast, Adelaide in the south, Melbourne in the southeast, Sydney on the east coast, and Brisbane on the northeast coast. The text '9TH REPORT' is printed in a large, bold, italicized serif font across the middle of the map.

## *9TH REPORT*

Perth

Adelaide

Melbourne

Sydney

Brisbane

*From the Combined Registries  
of the Australian Liver Transplant Centres*

**DATA TO 31-12-96**

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# Preface



This report is the Ninth Report of the Combined Australian Liver Transplant Registries and reports all liver transplants performed in Australia from January 1985 to December 1996. Data has been provided from all the Liver Transplant Units. A full list of the Units is included in Appendix A.

The data was analysed and this report prepared by the Queensland Liver Transplant Service, Brisbane. Data collation, analysis and compilation was performed by Glenda Balderson, editorial comment provide by Professor Russell Strong and Associate-Professor Stephen Lynch and the report prepared by Ms Debra-Anne Cormack.

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ALTR  
12/96



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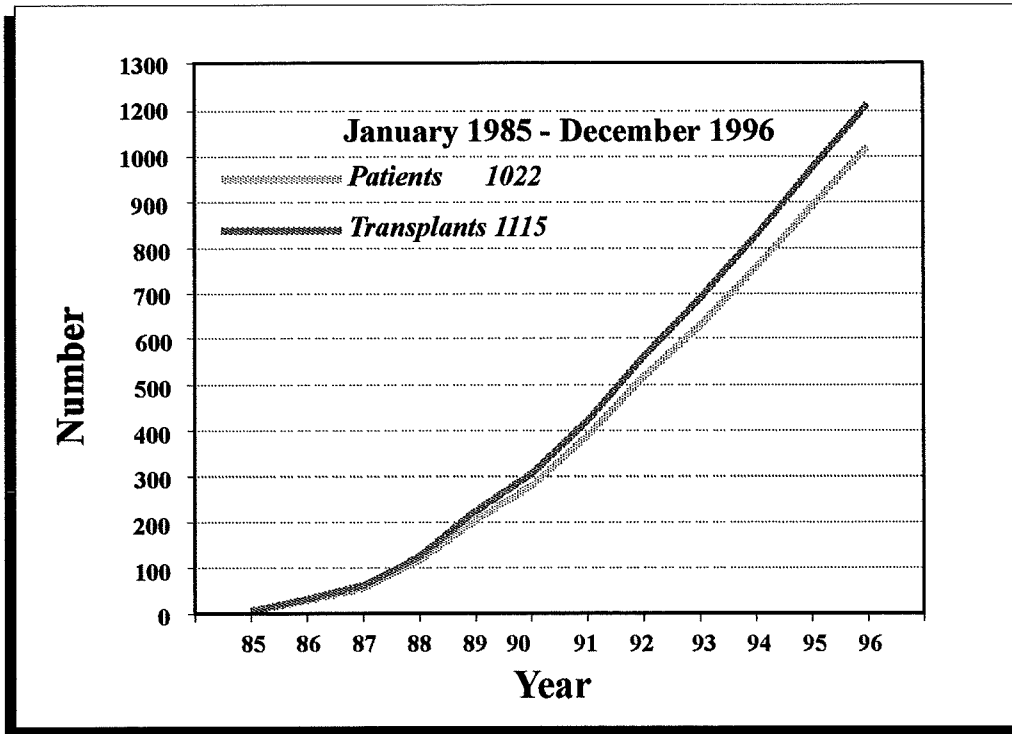


# **S**ection 1

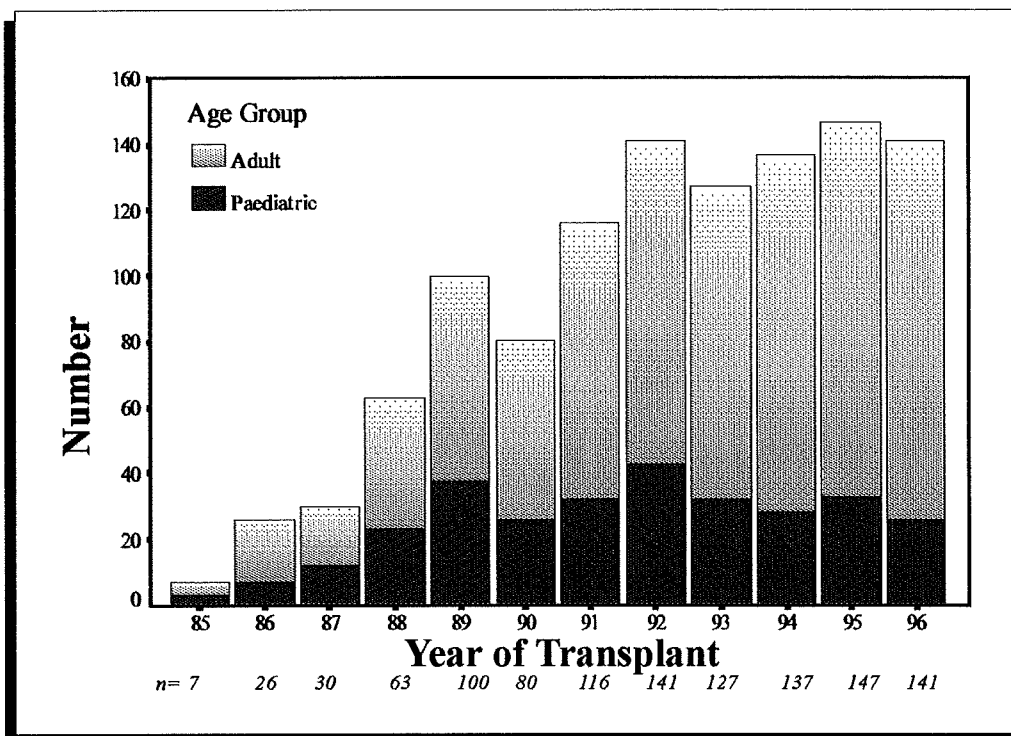
## *Demographic Data*



## Cumulative Number of Transplants and Patients

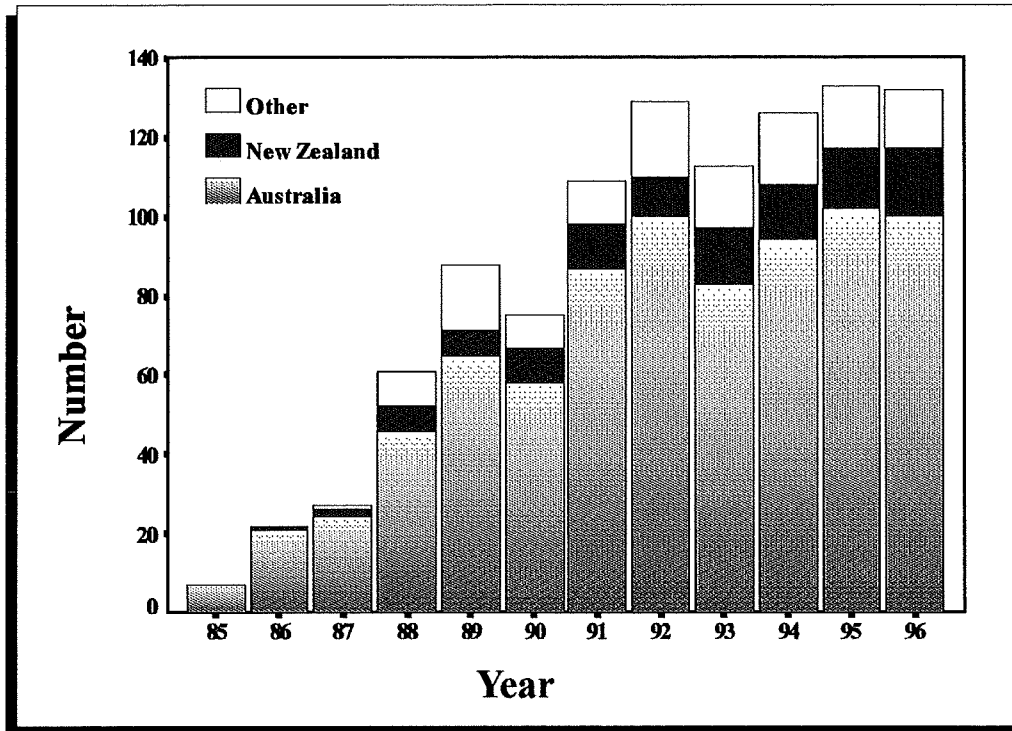


## Annual Number of Transplants





## Annual Number of New Patients Transplanted

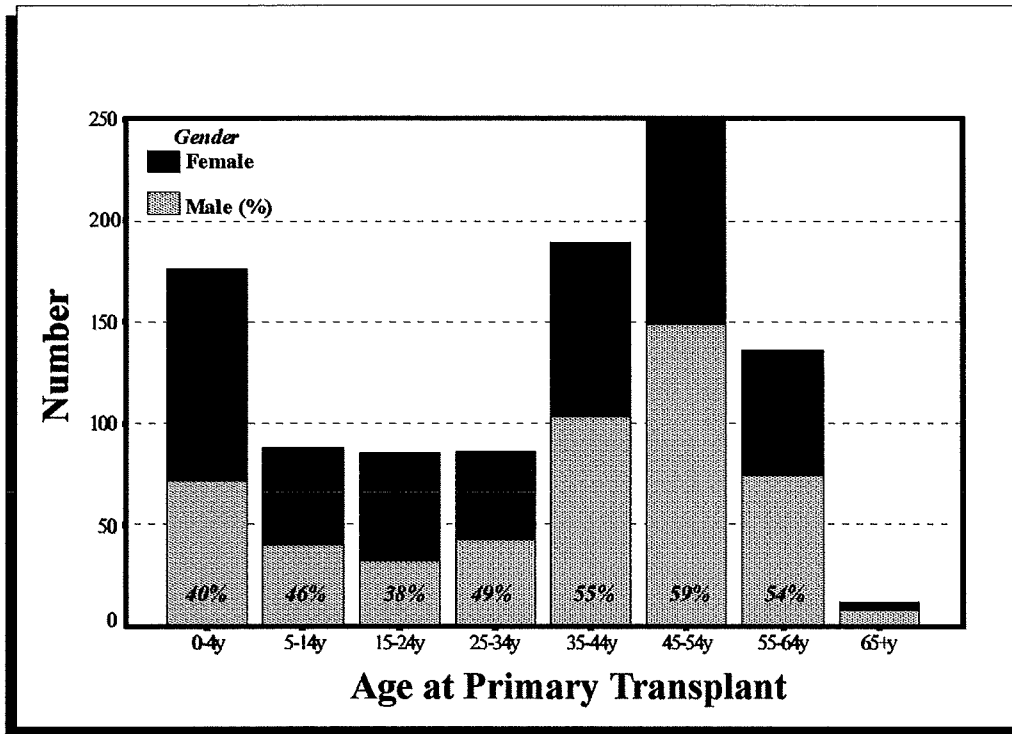


## New Patients Transplanted by Country of Residence

New Patients Transplanted (per million population)		
	Australia	New Zealand
1986	1.3	
1988	2.8	1.8
1990	3.4	2.7
1992	5.7	2.9
1994	5.3	4.0
1996	5.5	4.6



## Age and Gender Distribution of Patients

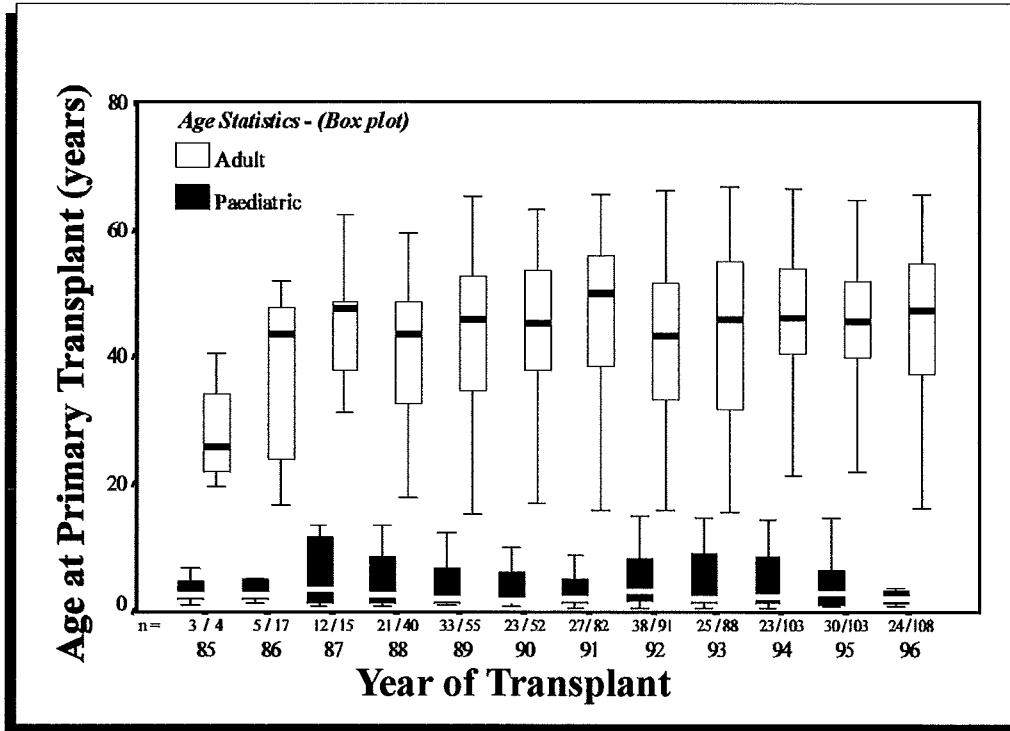


## Age and Gender - Summary Statistics

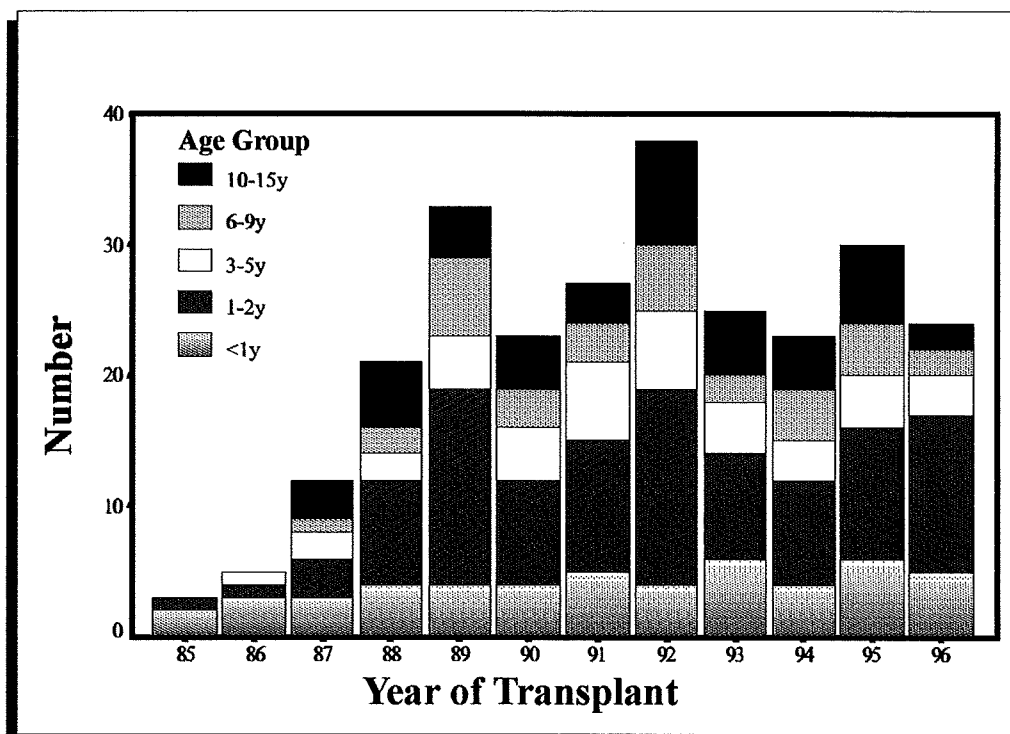
	Children	Adults
<i>n</i> =	<b>264</b>	<b>758</b>
<b>Age</b>		
Mean	<b>4.6 ± 4.4y</b>	<b>43.9 ± 12.3y</b>
Median	<b>2.4y</b>	<b>45.6y</b>
Range	<b>4m - 14.9y</b>	<b>15 - 66.9y</b>
<b>Gender</b>		
Female	<b>153 (58%)</b>	<b>352 (46%)</b>
Male	<b>111 (42%)</b>	<b>406 (54%)</b>



## Age by year of Primary Transplant



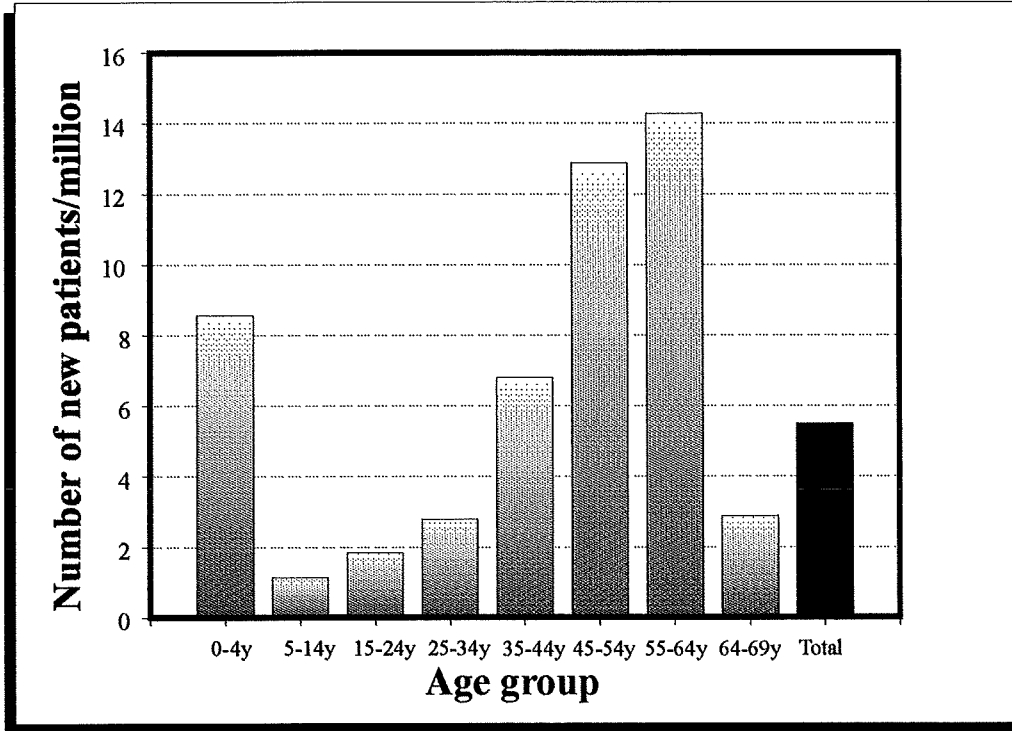
## Age at Primary Transplant - Paediatric Patients







**New Australian Patients Transplanted 1996  
- Age specific rates**





## **S**ection 2

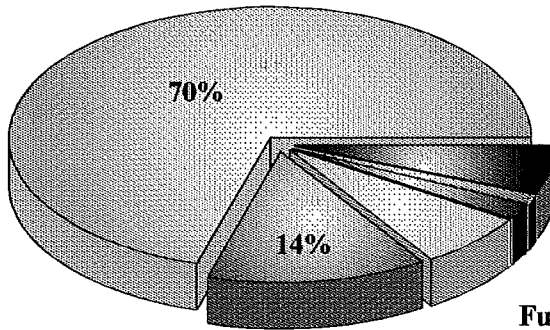
### *Primary Diagnosis*



**Primary Diagnosis - Paediatric Recipients**

**264 Patients**

**Biliary Atresia/hypoplasia**

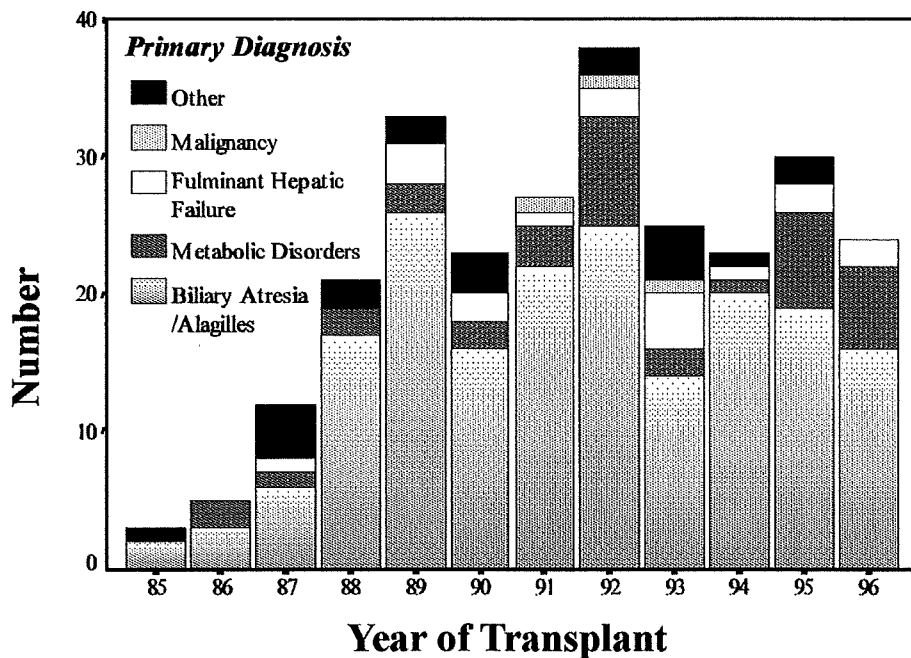


**Metabolic Disorders**

**Other 6%**  
**Malignancy 1%**  
**Cryptogenic Cirrhosis 2%**  
**Fulminant Hepatic Failure 7%**



**Diagnosis by Year of Transplant - Paediatric Recipients**





### Primary Diagnosis - Australian Resident Paediatric Patients

	1992	1993	1994	1995	1996
Biliary Atresia	9	5	7	9	5
Alagilles Syndrome	1	-	1	2	3
Metabolic Disorders	7	2	1	4	4
( <i>α-1-Antitrypsin Deficiency</i> )	3	-	1	2	2)
( <i>Crigler-Najler</i> )	1	1	-	-	-)
( <i>Hyperoxalosis</i> )	1	-	-	1	-)
( <i>Other</i> )	2	1	-	1	2)
Chronic Active Hepatitis :					
( <i>Idiopathic</i> )	1	-	-	-	-)
Cryptogenic Cirrhosis	-	-	1	1	-
Fulminant Hepatic Failure	2	3	-	2	2
( <i>Idiopathic</i> )	-	1	-	2	1)
( <i>Non A,B,C</i> )	1	1	-	-	1)
( <i>Drug</i> )	1	1	-	-	-)
Malignancy	1	1	-	-	-
Other	1	2	-	1	-
<b>TOTAL</b>	<b>22</b>	<b>13</b>	<b>10</b>	<b>19</b>	<b>14</b>



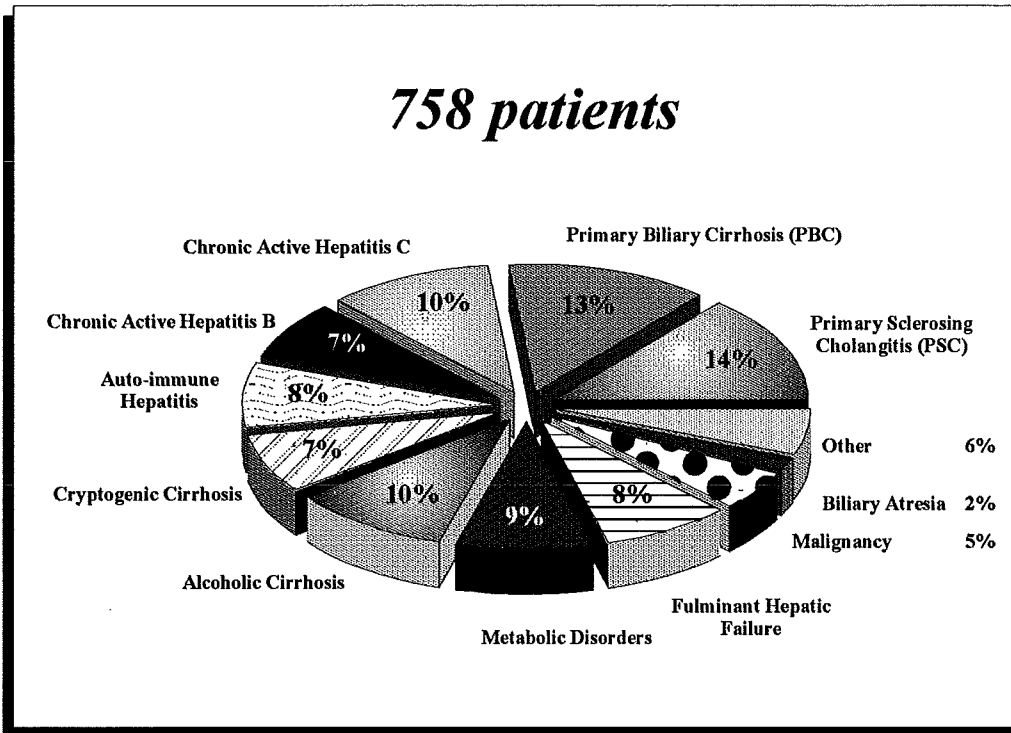
### Primary Diagnosis - New Zealand Resident Paediatric Patients

	1992	1993	1994	1995	1996
Biliary Atresia	2	3	6	4	4
Metabolic Disorders	-	-	-	2	2
( <i>α-1-Antitrypsin Deficiency</i> )	-	-	-	2	-)
( <i>Wilson's Disease</i> )	-	-	-	-	1)
( <i>Bylers Disease</i> )	-	-	-	-	1)
Fulminant Hepatic Failure	-	1	-	-	-
( <i>Idiopathic</i> )	-	1	-	-	-)
<b>TOTAL</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>6</b>	<b>6</b>

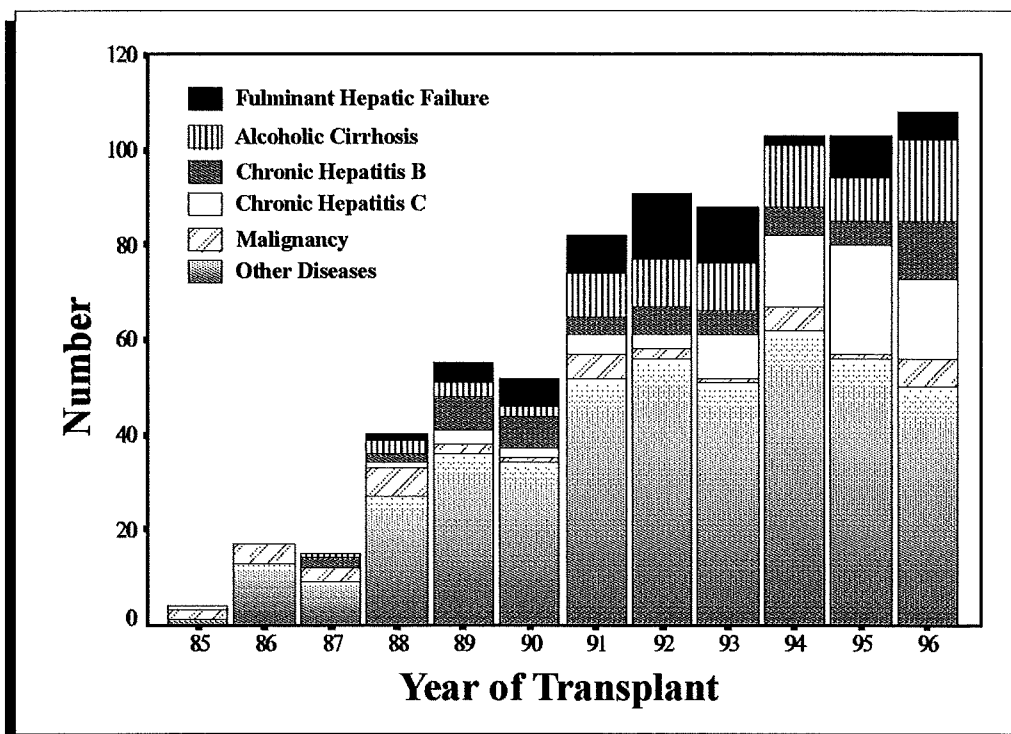


**Primary Diagnosis - Adult Recipients**

*758 patients*



**Primary Diagnosis by Year of Transplant - Adult Recipients**





### Primary Diagnosis - Australian Resident Adult Patients

	1992	1993	1994	1995	1996
Primary Biliary Cirrhosis	9	10	9	9	7
Primary Sclerosing Cholangitis	10	8	14	6	8
Biliary Atresia	1	-	3	1	-
Metabolic Disorders	7	3	4	4	7
( <i>α-1-Antitrypsin Deficiency</i> )	1	1	-	3	4)
( <i>Haemochromatosis</i> )	4	1	3	1	2)
( <i>Wilson's Disease</i> )	2	1	1	-	-)
( <i>Other</i> )	-	-	-	-	1)
Alcoholic Cirrhosis	9	10	12	9	17
Chronic Active Hepatitis :					
Autoimmune	12	6	8	7	3
Hepatitis B	6	4	6	5	11
Hepatitis C	2	8	13	20	15
Idiopathic	1	-	-	-	-
Cryptogenic Cirrhosis	6	6	5	10	2
Fulminant Hepatic Failure	10	8	2	9	3
( <i>Idiopathic</i> )	3	3	-	4	2)
( <i>Hepatitis Non A,B,C</i> )	1	2	-	1	-)
( <i>Hepatitis B</i> )	2	2	-	1	-)
( <i>Hepatitis E</i> )	-	-	-	1	-)
( <i>Drug-induced Hepatitis</i> )	3	1	1	2	-)
( <i>Wilson's Disease</i> )	1	-	1	-	-)
( <i>Other</i> )	-	-	-	-	1)
Sub-acute Hepatic Failure	1	2	-	-	1
Malignancy	1	1	4	1	5
Other	3	4	4	2	7
<b>TOTAL</b>	<b>78</b>	<b>70</b>	<b>84</b>	<b>83</b>	<b>86</b>



### Primary Diagnosis - New Zealand Resident Adult Patients

	1992	1993	1994	1995	1996
Primary Biliary Cirrhosis	-	-	2	1	1
Primary Sclerosing Cholangitis	2	2	2	3	2
Metabolic Disorders	-	1	-	3	2
( <i>α-1-Antitrypsin Deficiency</i> )	-	-	-	-	-)
( <i>Haemochromatosis</i> )	-	-	-	1	-)
( <i>Wilson's Disease</i> )	-	1	-	-	1)
( <i>Other</i> )	-	-	-	2	1)
Alcoholic Cirrhosis	1	-	1	-	-
Chronic Active Hepatitis					
Autoimmune	-	1	2	1	1
Hepatitis C	-	-	-	-	1
Cryptogenic Cirrhosis	1	-	1	-	1
Fulminant Hepatic Failure	4	4	-	-	2
( <i>Idiopathic</i> )	1	1	-	-	1)
( <i>Hepatitis B</i> )	1	3	-	-	-)
( <i>Hepatitis Non A,B,C</i> )	2	-	-	-	1)
Sub-acute Hepatic Failure	-	1	-	-	-
Malignancy	-	-	-	-	-
Other	-	1	-	1	1
<b>TOTAL</b>	<b>8</b>	<b>10</b>	<b>8</b>	<b>9</b>	<b>11</b>

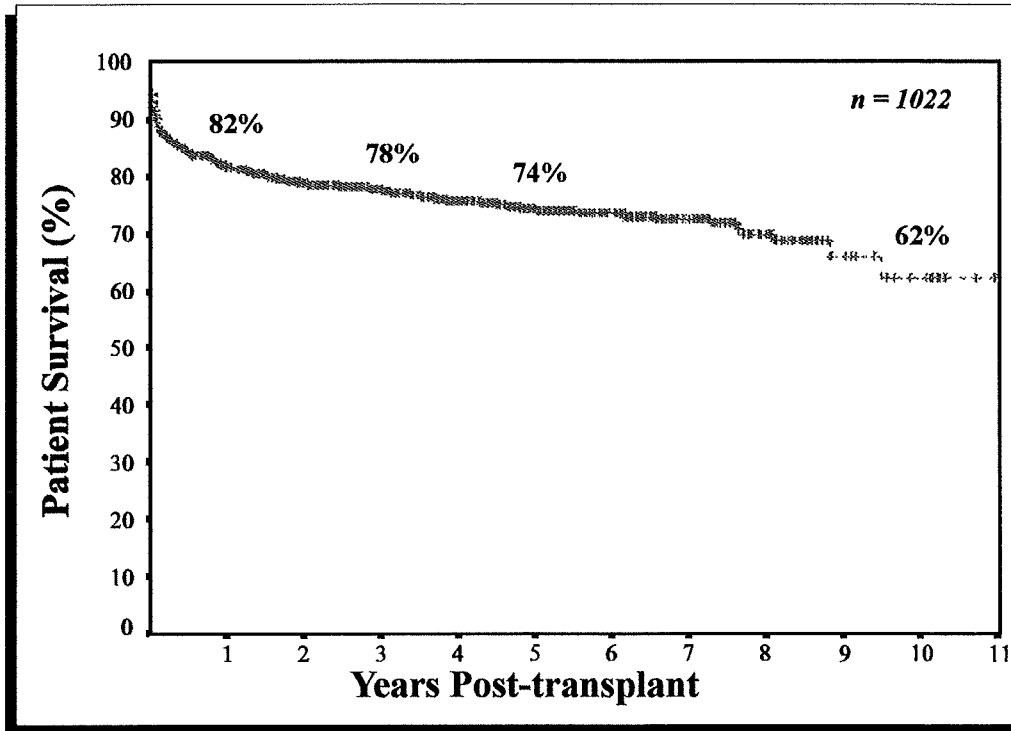


# **S**ection 3

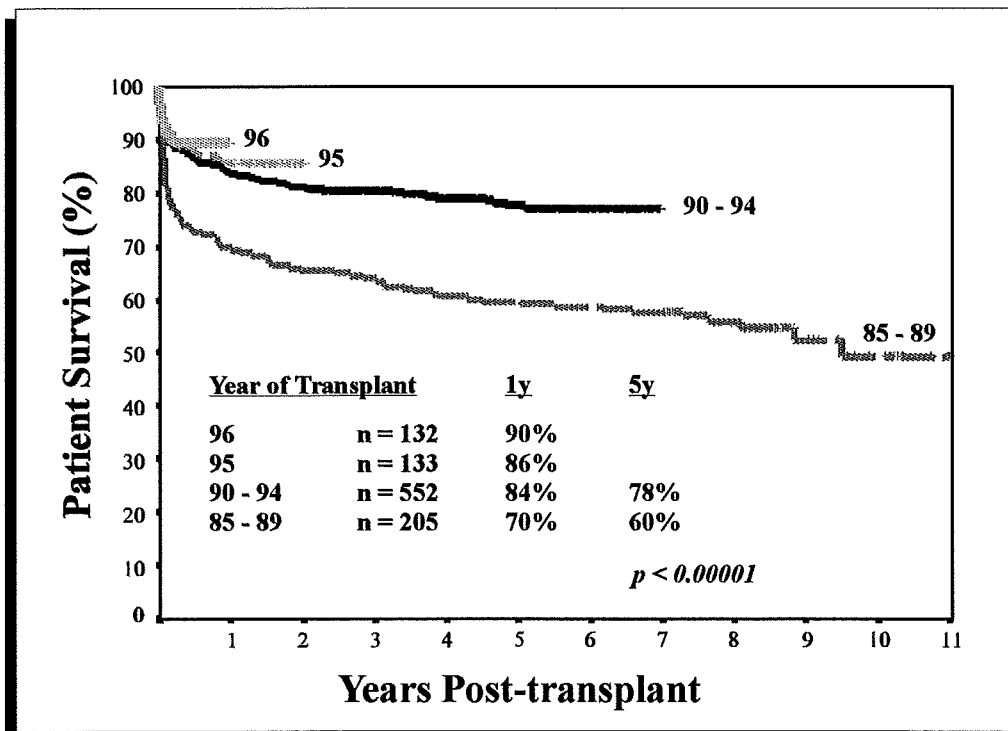
## *Patient Survival*



## Actuarial Survival - All Patients



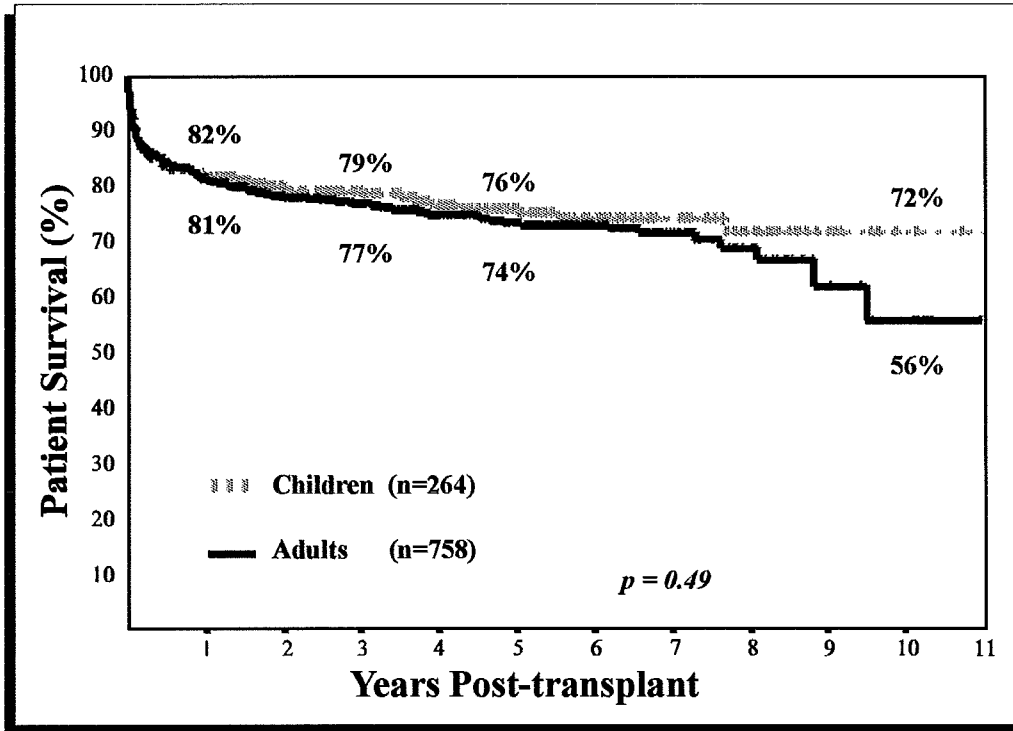
## Actuarial Survival by Year of Primary Transplant



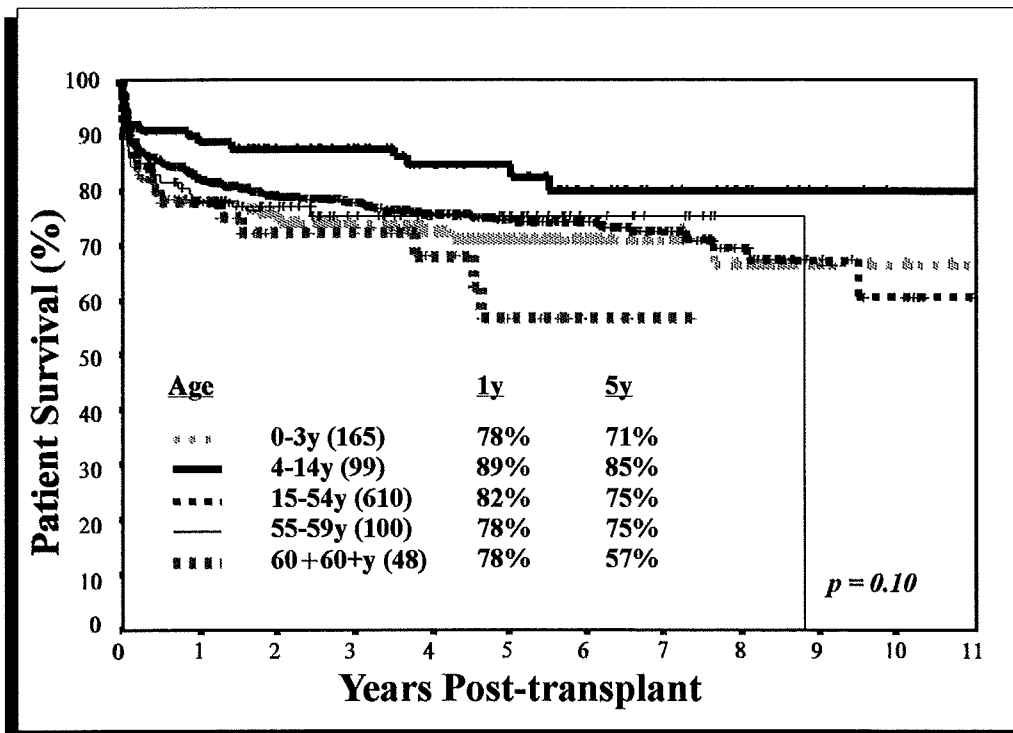




### Actuarial Survival by Age Group

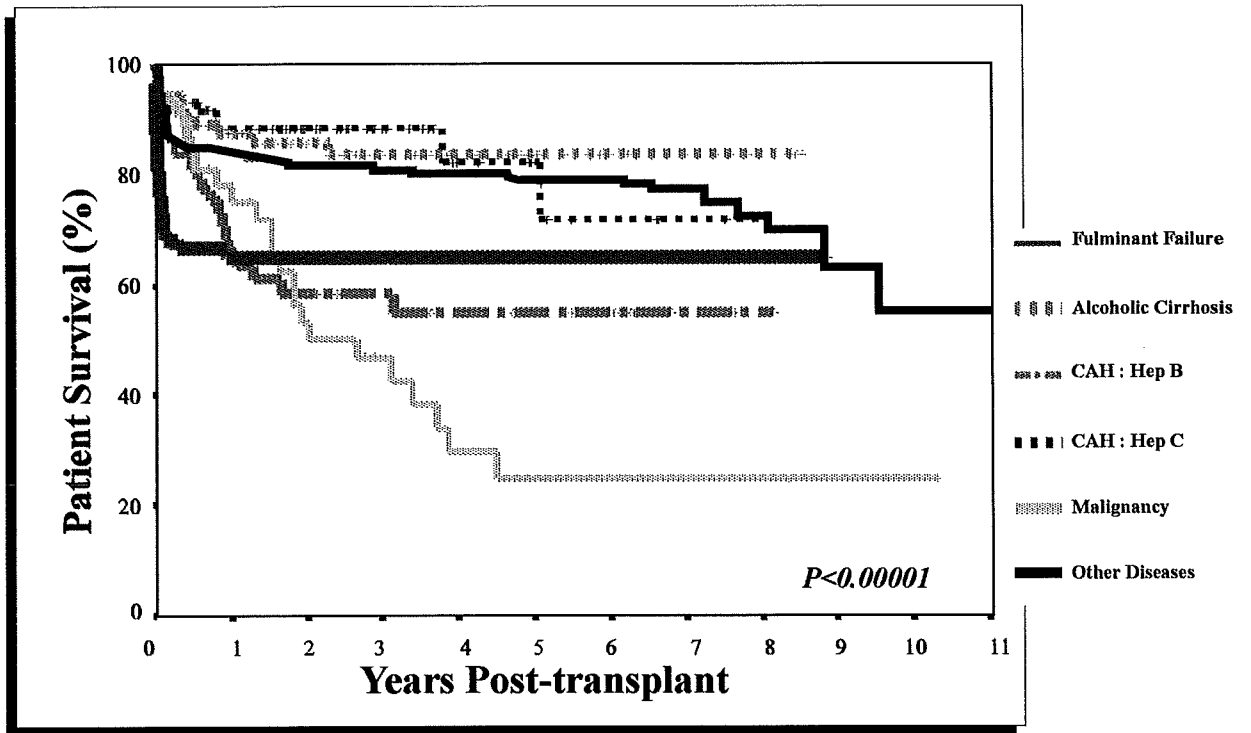


### Actuarial Survival by Age at Primary Transplant

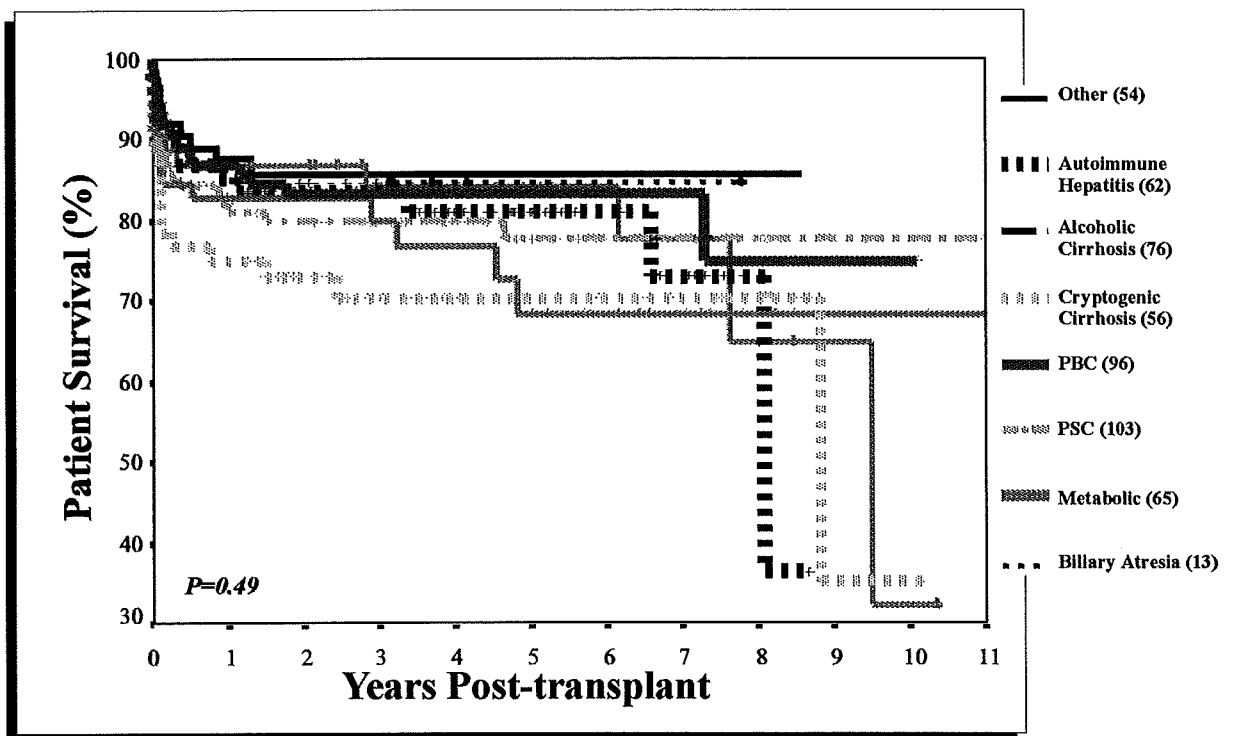




### Actuarial Survival by Primary Diagnosis - Adult Recipients



### Actuarial Survival by Primary Diagnosis - Adult Recipients



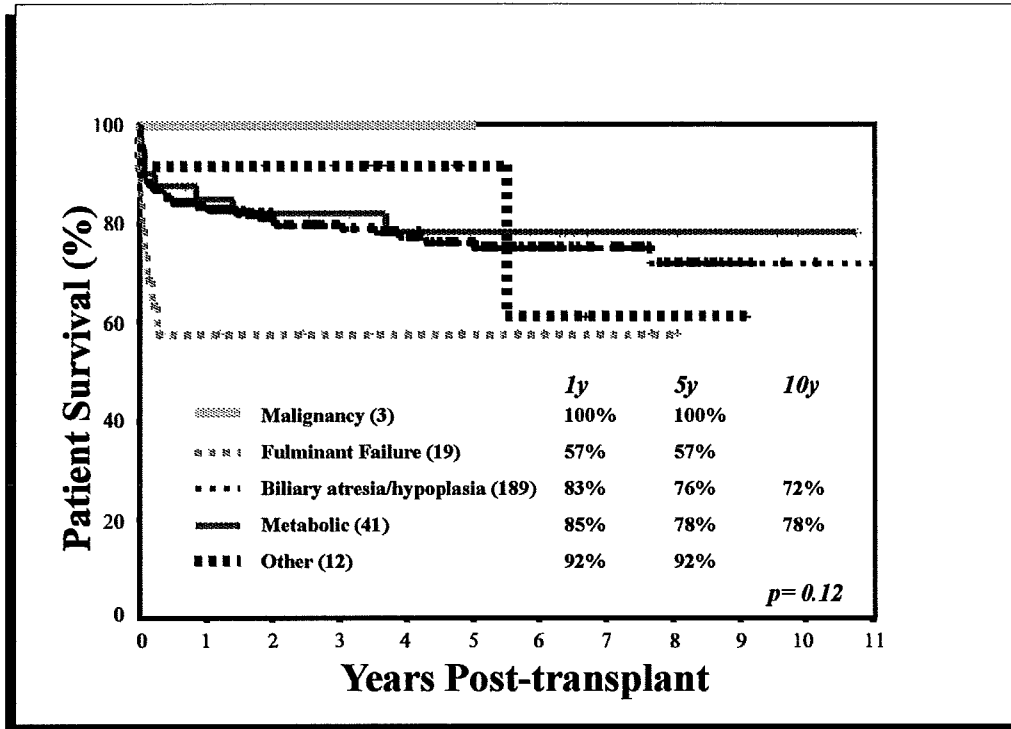


**Actuarial Patient Survival by  
Primary Disease - Adult patients**

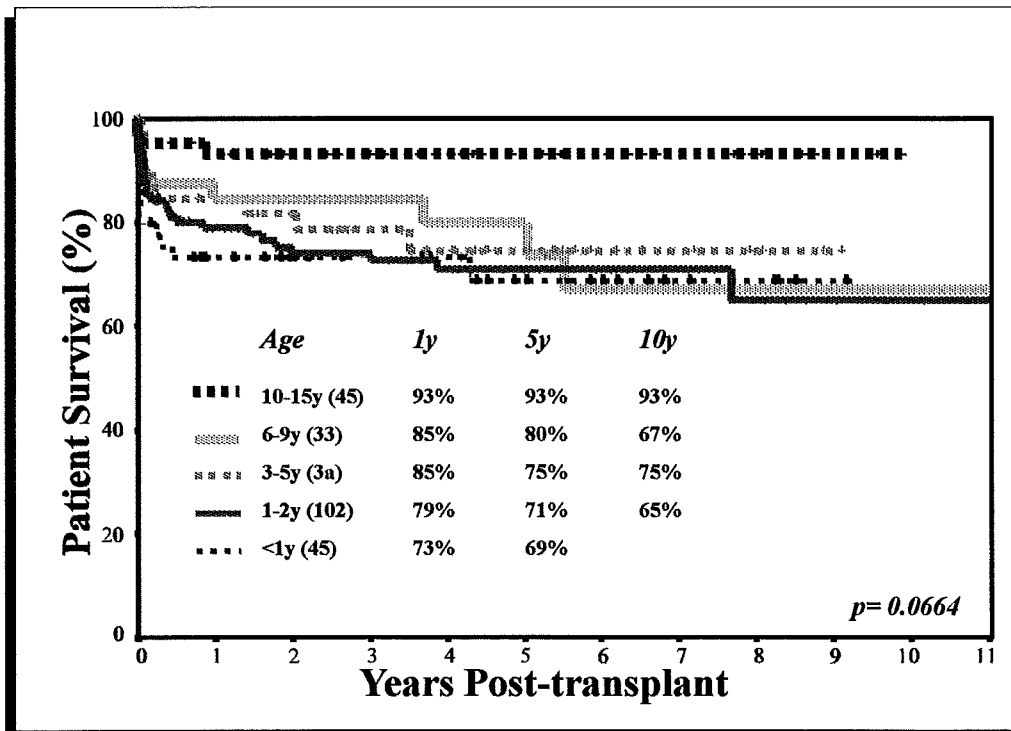
	<i>Number</i>	<i>1y</i>	<i>3y</i>	<i>5y</i>	<i>8y</i>
Primary Biliary Cirrhosis (PBC)	96	87%	83%	83%	75%
Primary Sclerosing Cholangitis (PSC)	103	82%	80%	78%	78%
Biliary Atresia	13	85%	85%	85%	85%
Metabolic Disorders	65	83%	80%	68%	68%
Alcoholic Cirrhosis	76	87%	86%	86%	86%
Chronic Active Hepatitis :					
Autoimmune	62	85%	84%	81%	73%
Hepatitis B	56	66%	58%	55%	55%
Hepatitis C	78	89%	86%	80%	71%
Cryptogenic Cirrhosis	56	75%	70%	70%	70%
Fulminant Hepatic Failure	63	65%	65%	65%	-
Malignancy	38	78%	47%	25%	25%
Other	54	87%	84%	84%	65%
<i>Sub-acute failure</i>	12	91%	91%	91%	91%
<i>Budd-Chiari</i>	10	80%	80%	-	-
<i>Caroli's</i>	8	100%	100%	100%	-
<b>All Adult Recipients</b>	<b>758</b>	<b>81%</b>	<b>77%</b>	<b>74%</b>	<b>69%</b>



### Actuarial Survival by Primary Diagnosis - Paediatric Recipients

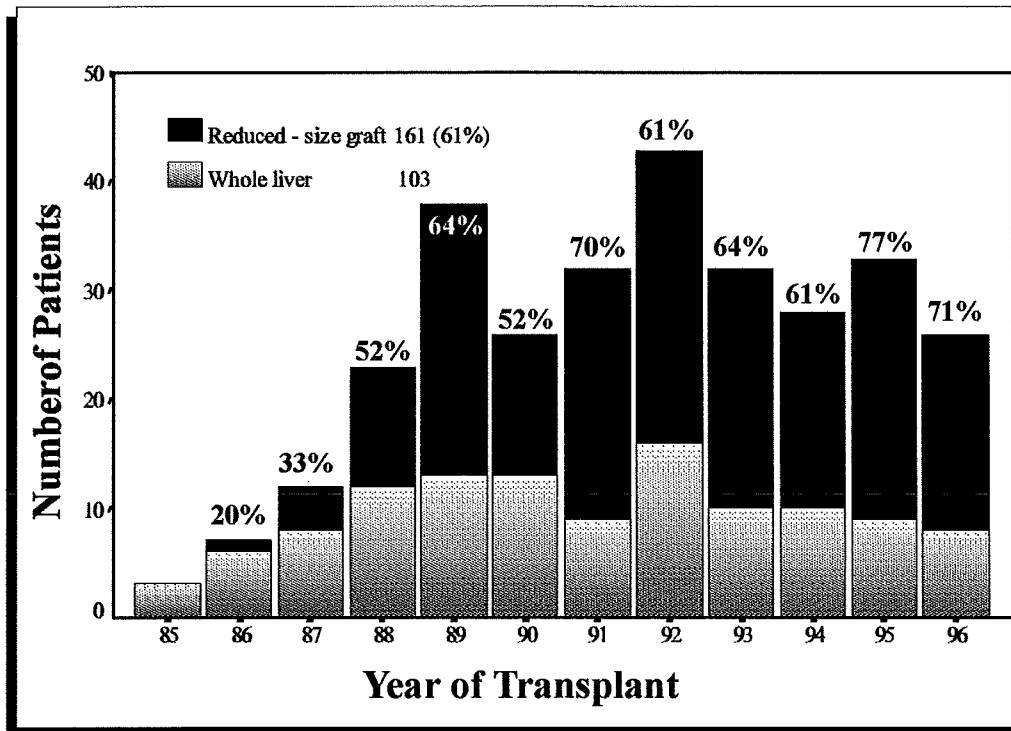


### Actuarial Survival by Age at Primary Transplant - Paediatric Recipients

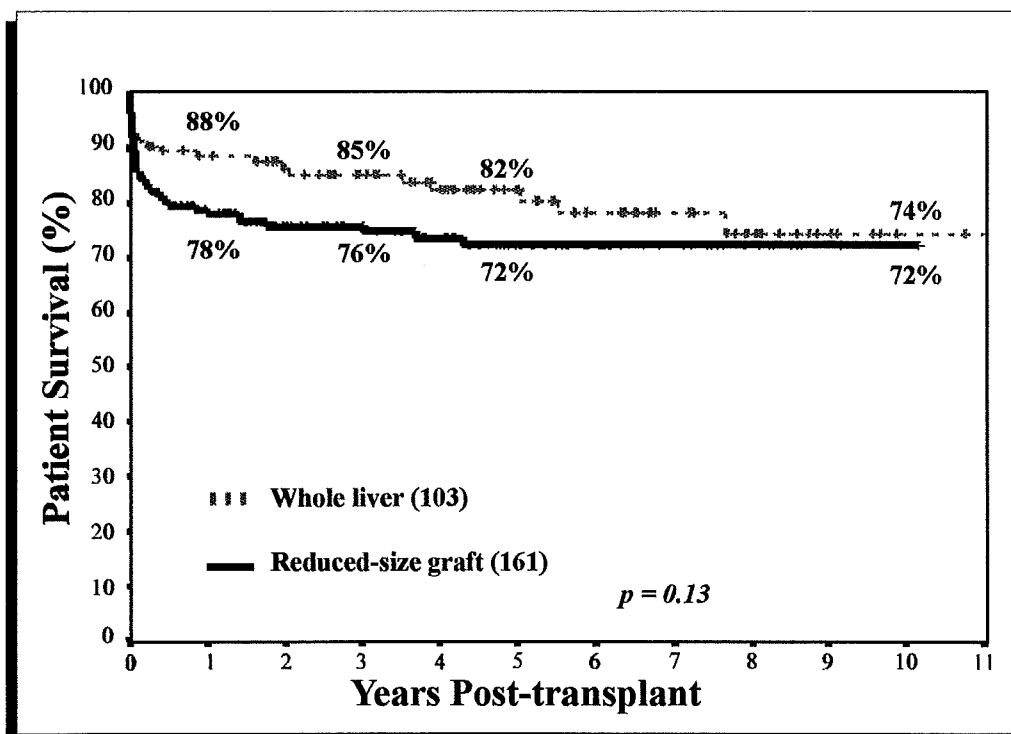




### Type of Primary Graft - Paediatric Recipients



### Actuarial Patient Survival by Type of Primary Graft - Paediatric Recipients



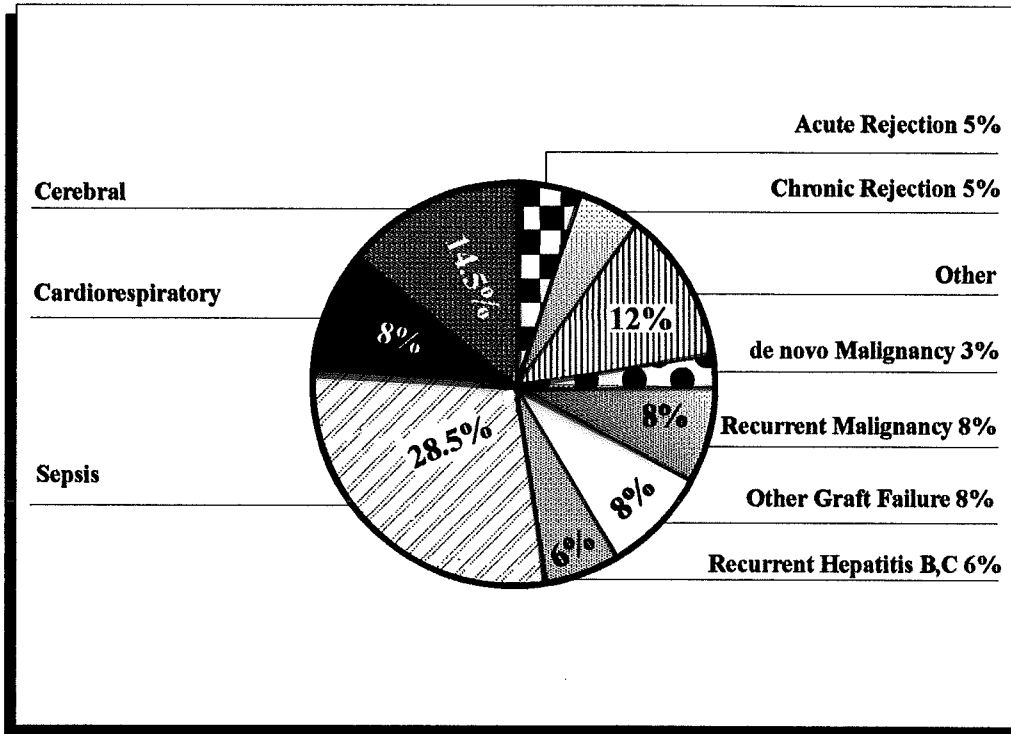


# **S**ection 4

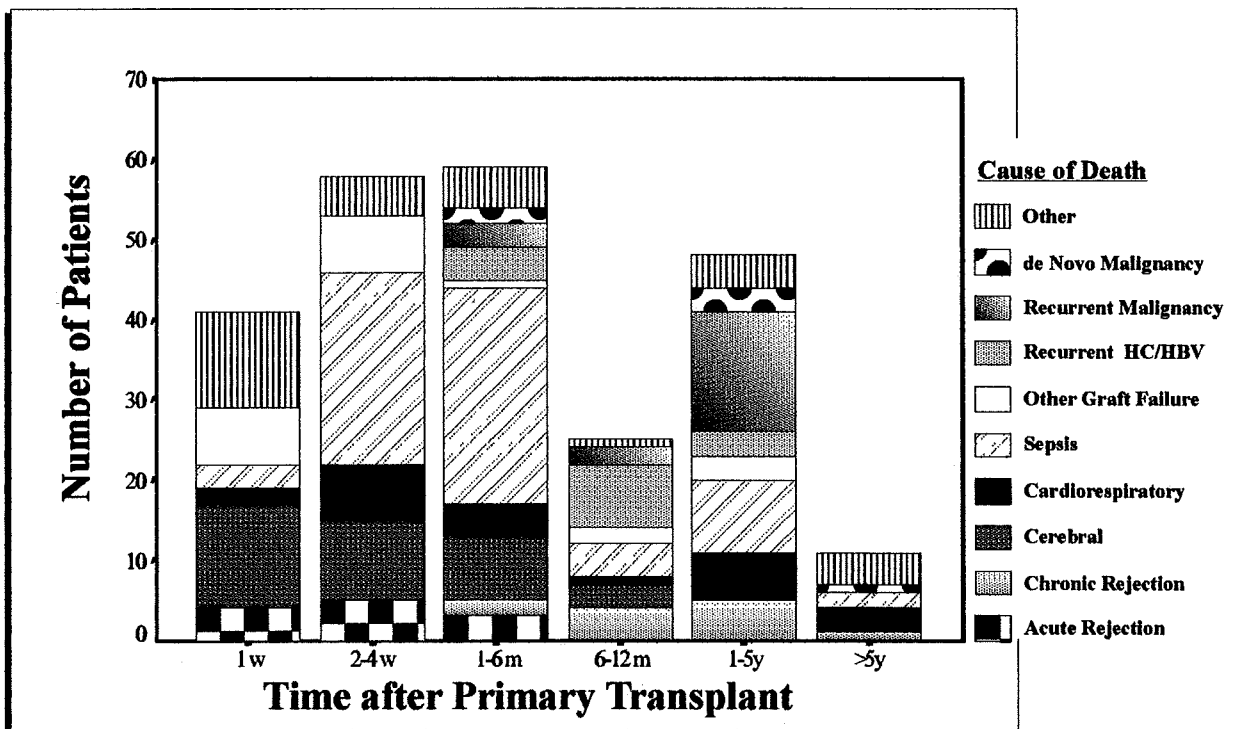
## *Causes of Death*



### Causes of Death - All Patients

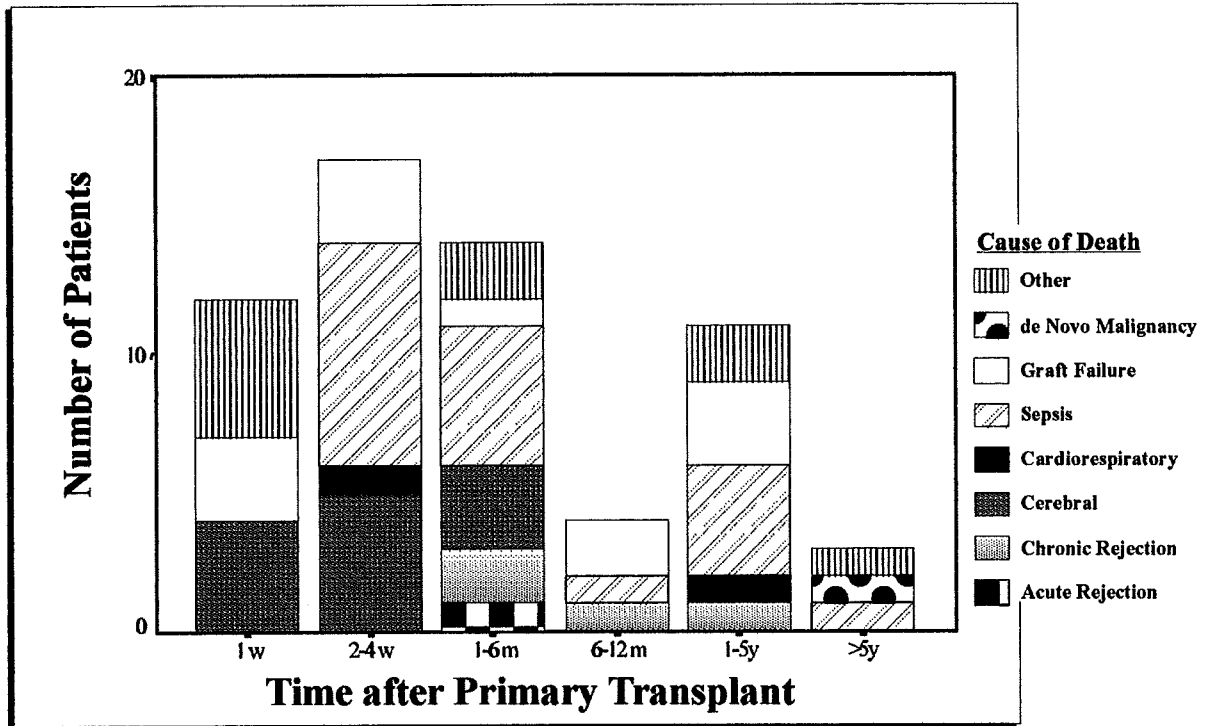


### Causes of Death by Time Post-transplant

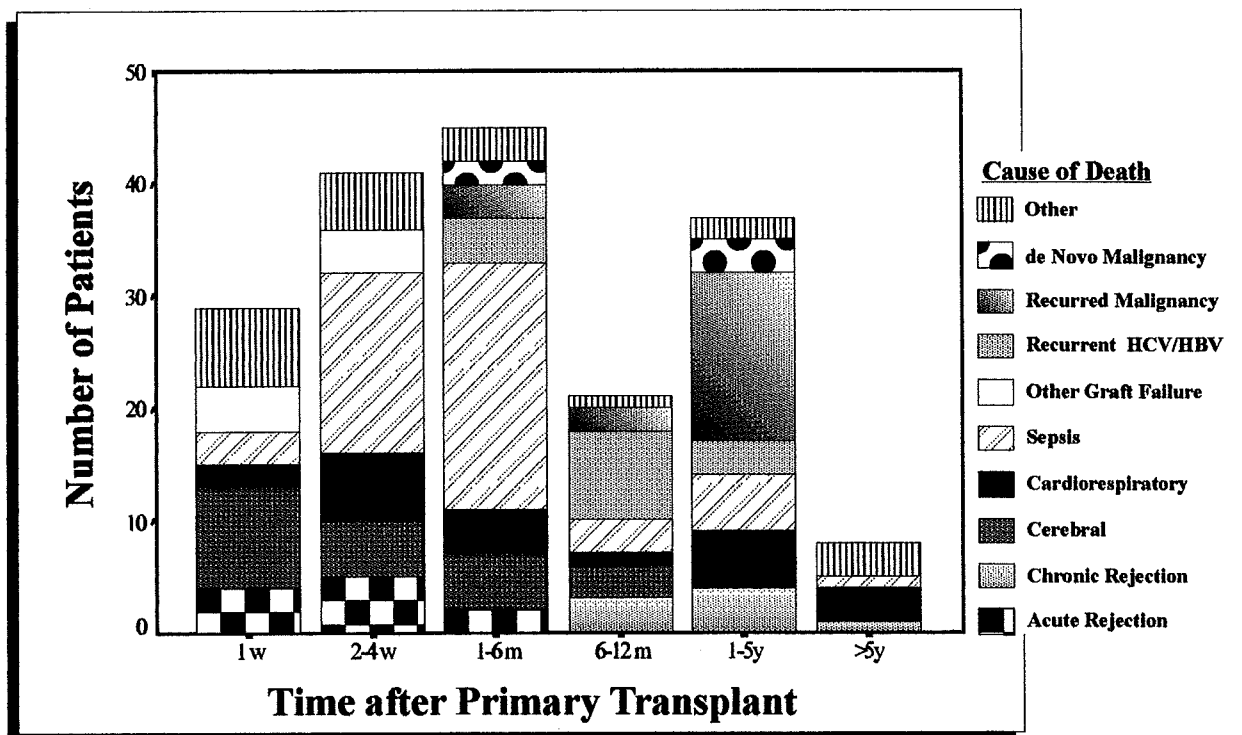




### Causes of Death Paediatric Recipients



### Causes of Death - Adults Recipients





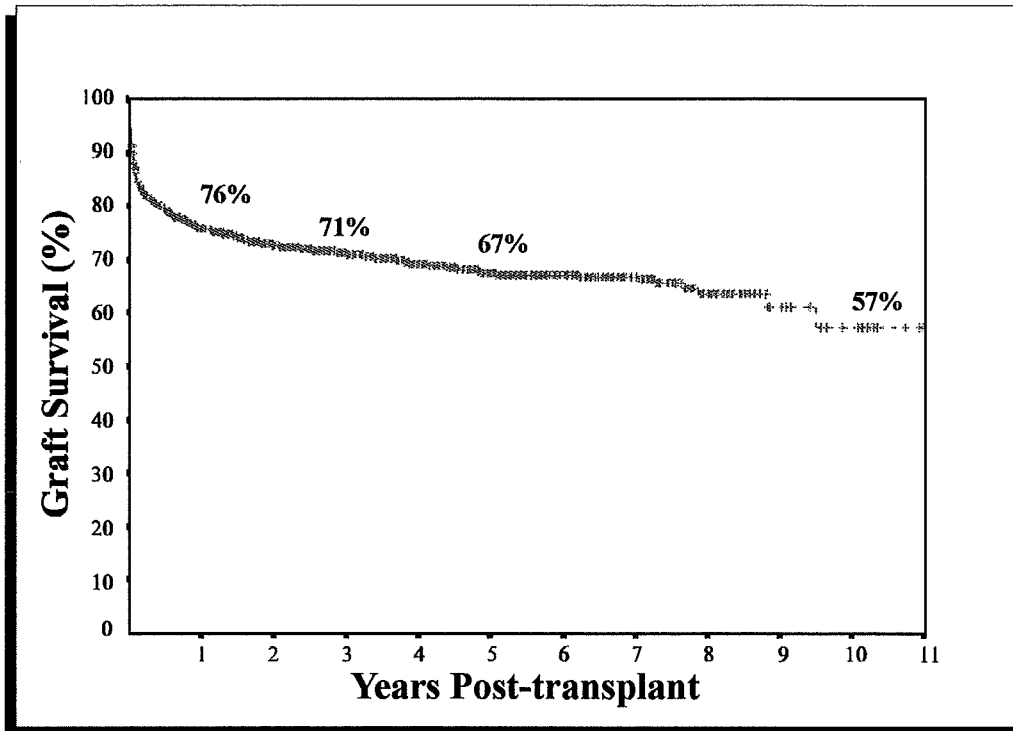


## **S**ection 5

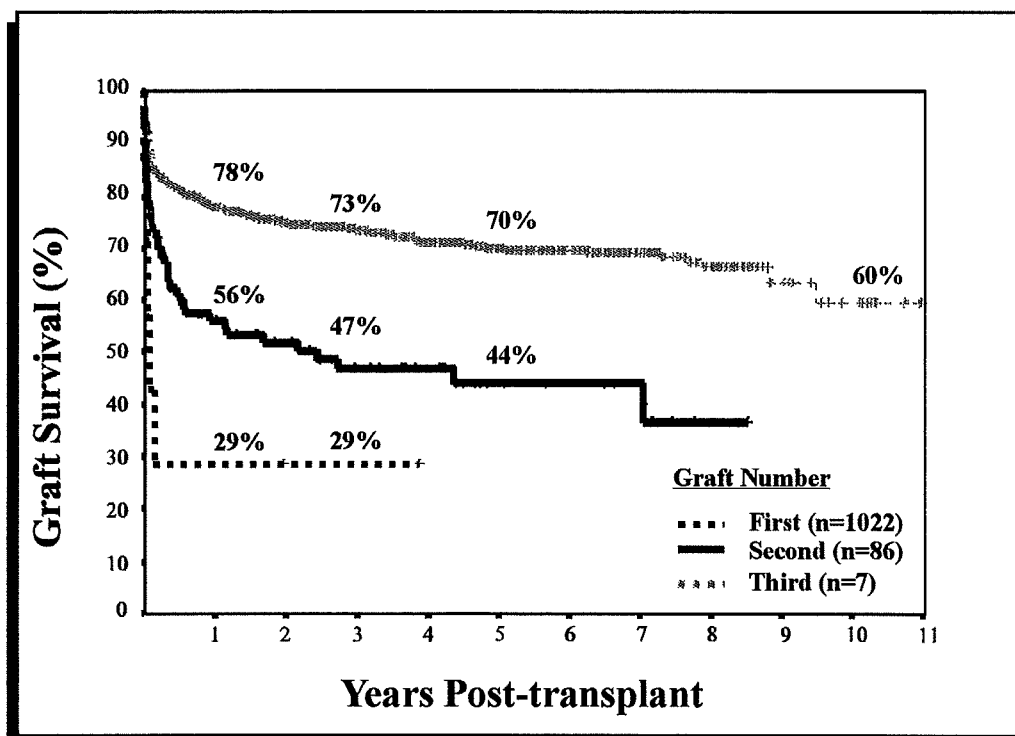
# *Graft Survival and Retransplantation*



### Actuarial Graft Survival - All Grafts

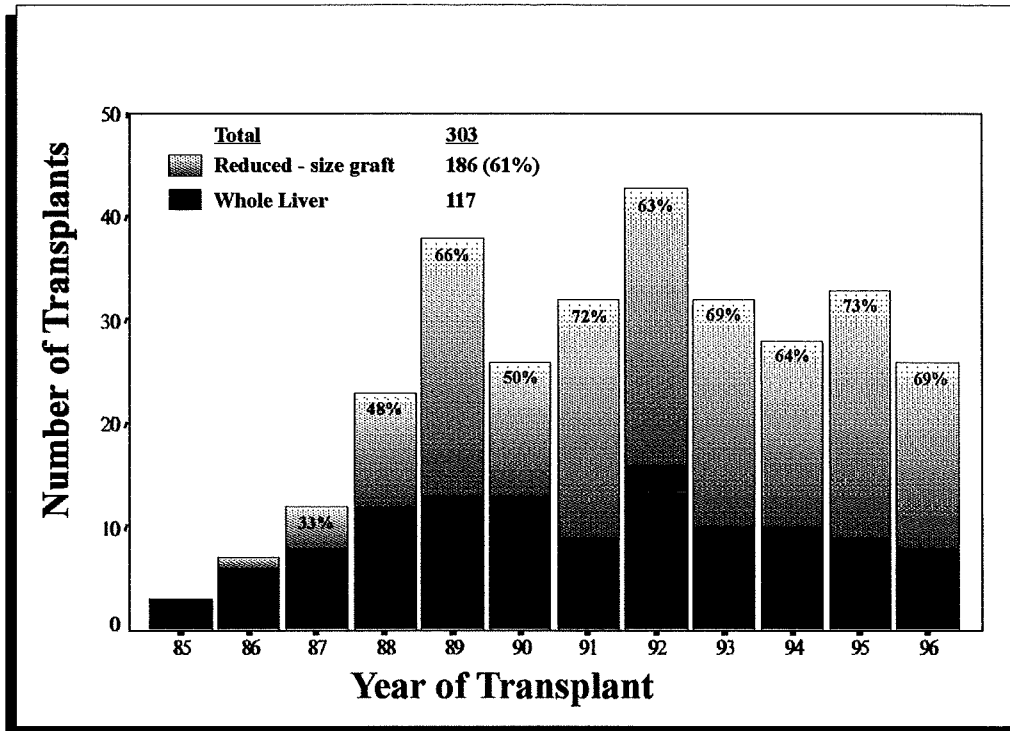


### Actuarial Graft Survival

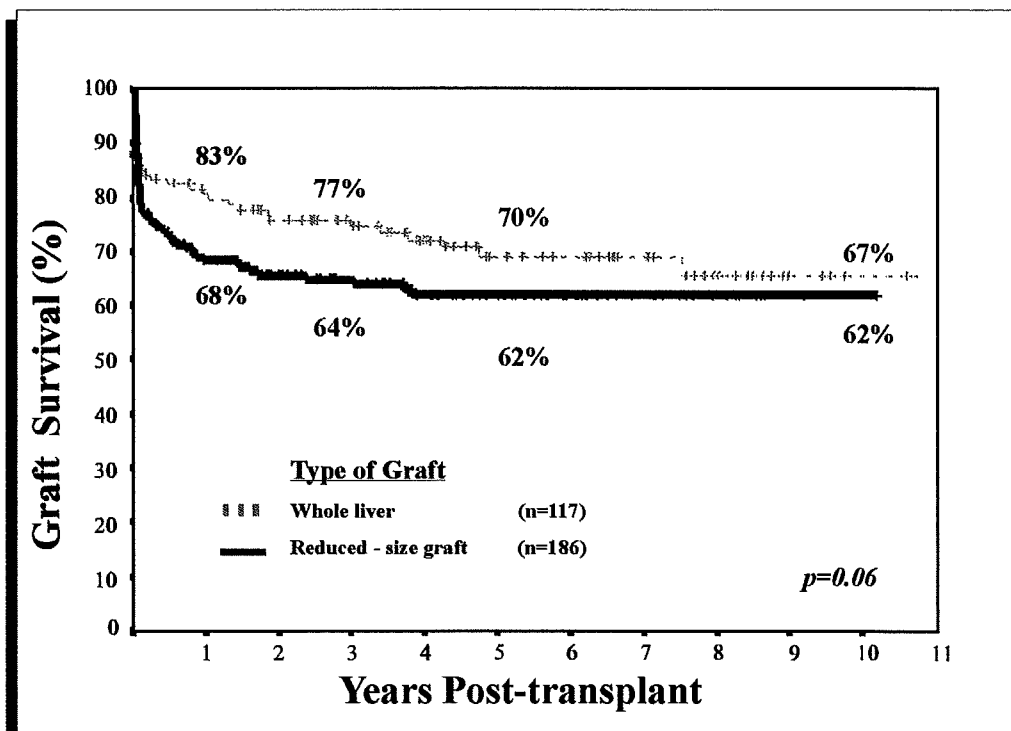




### Type of Graft - All Paediatric Transplants

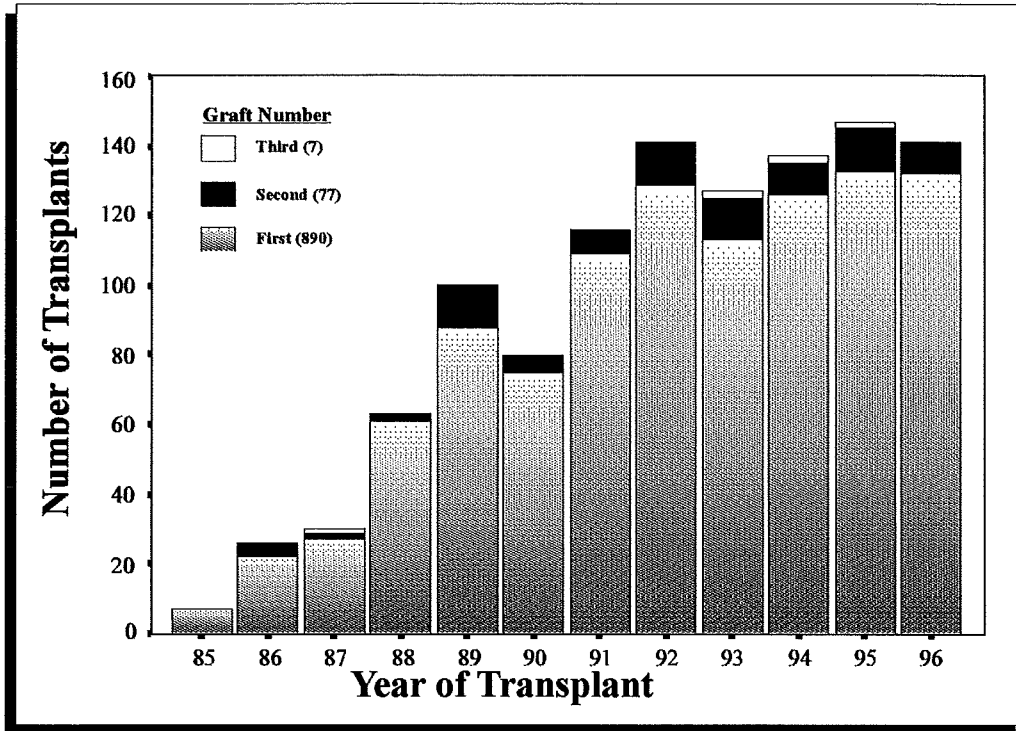


### Graft Survival by Type of Graft - Paediatric Recipients

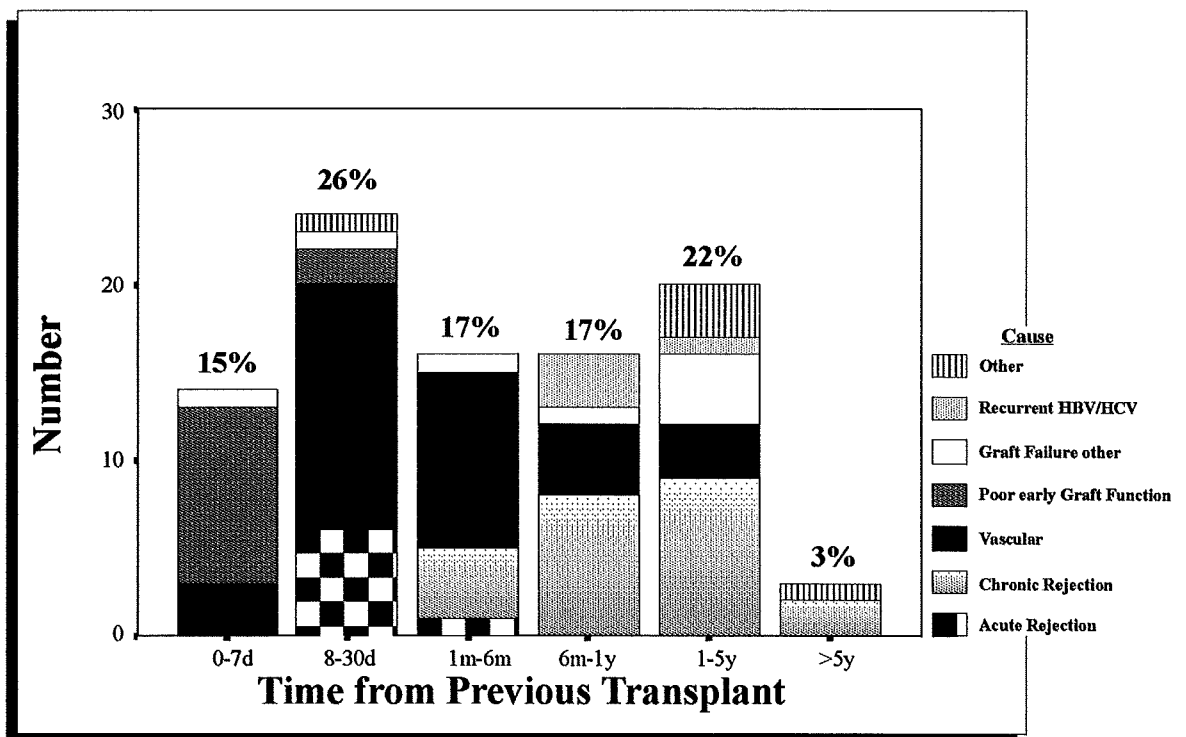




### Retransplantation by Year of Transplant

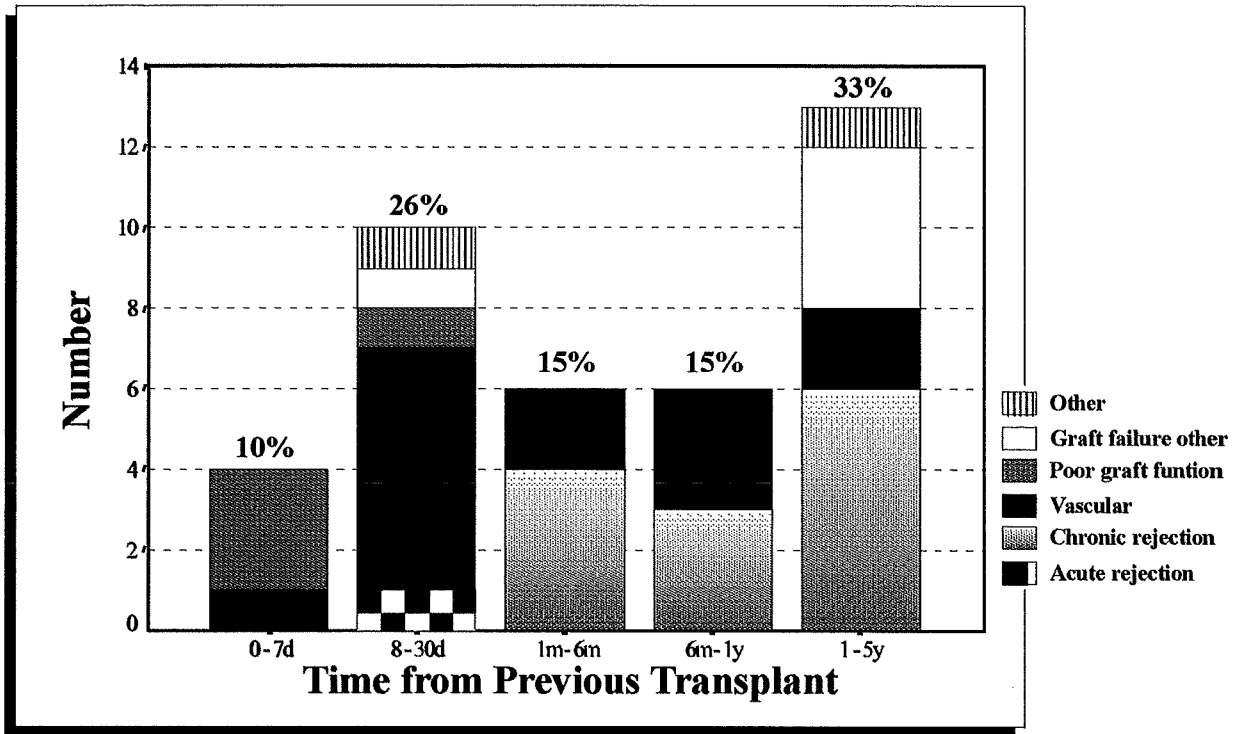


### Retransplantation Indication by Time

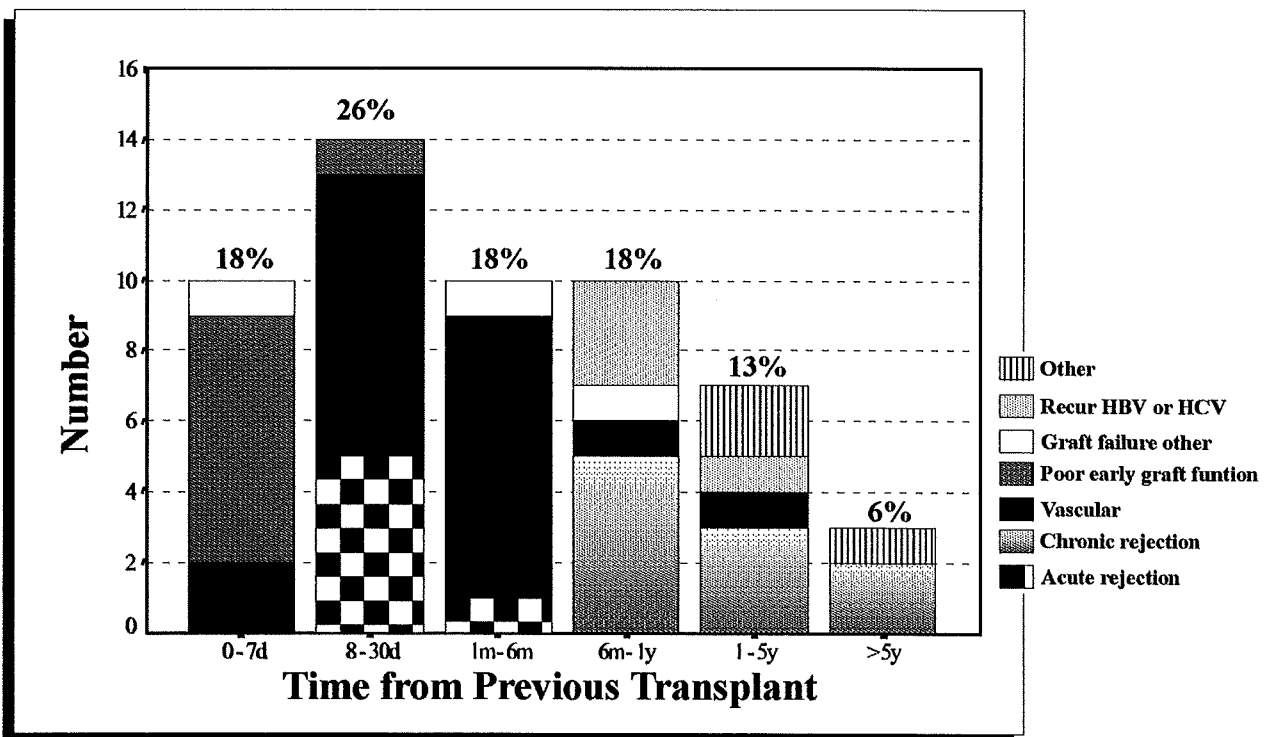




### Retransplantation Indication - Paediatric Recipients



### Retransplantation Indication - Adult Recipients





# **S**ection 6

*Donors*

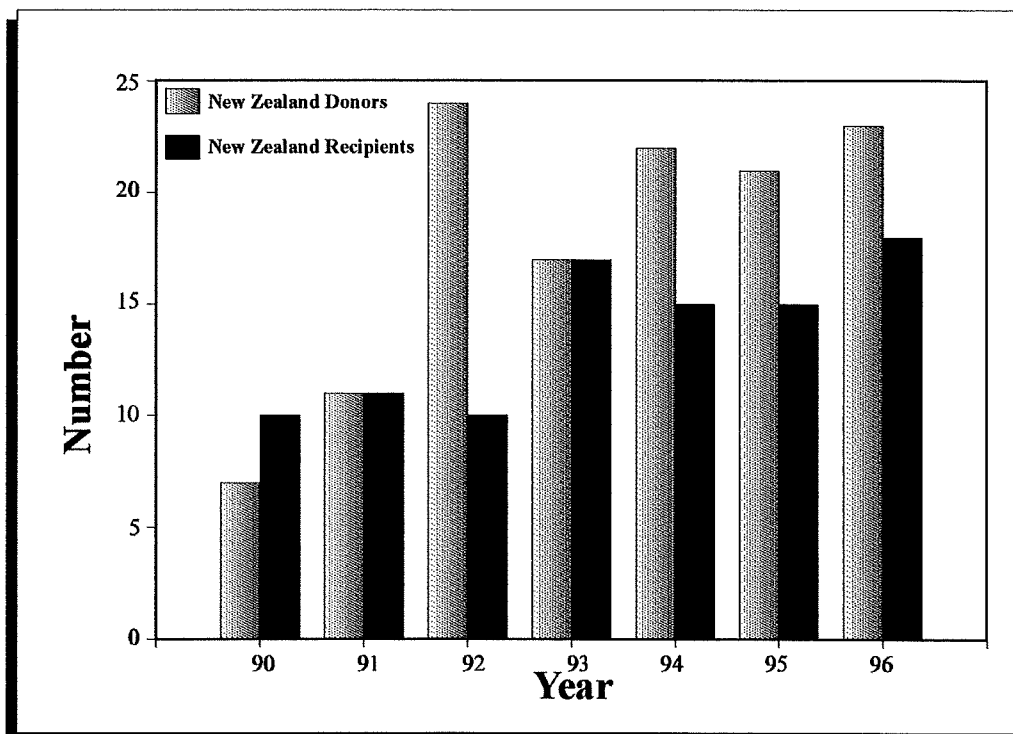


## Donor Source

Donor Source	1991	1992	1993	1994	1995	1996
Cadaver Donor	113	139	127	135	142	133
<i>Australia (used as split liver)</i>	<i>102 (2)</i>	<i>115</i>	<i>110</i>	<i>113 (2)</i>	<i>121 (4)</i>	<i>110 (8)</i>
<i>New Zealand (%)</i>	<i>11 (10%)</i>	<i>24 (17%)</i>	<i>17 (13%)</i>	<i>22 (16%)</i>	<i>21 (15%)</i>	<i>23 (17%)</i>
Living Related Donor	1	2	-	-	1	-
<b>Total Number of Transplants</b>	<b>116</b>	<b>141</b>	<b>127</b>	<b>137</b>	<b>147</b>	<b>141</b>



## Donors from New Zealand and New Zealand Recipients Transplanted



## *Australian Liver Transplant Units*

Queensland Liver Transplant Service  
Princess Alexandra Hospital  
Ipswich Road  
WOOLLOONGABBA, QLD, 4102

*and*

Royal Children's Hospital  
Bowen Bridge Road  
HERSTON, QLD, 4029

Liver Transplant Unit  
Royal Prince Alfred Hospital  
Missenden Road  
CAMPERDOWN, NSW, 2050

*and*

The New Children's Hospital  
Hawkesbury Road  
WESTMEAD, NSW, 2145

Liver Transplant Unit Victoria  
The Austin Hospital  
Studley Road  
HEIDELBERG, VIC, 3084

*and*

Royal Children's Hospital  
Flemington Road  
PARKVILLE, VIC, 3052

South Australian Liver Transplant Unit  
Flinders Medical Centre  
Flinders Drive  
BEDFORD PARK, SA, 5042

WA Liver Transplantation Service  
Sir Charles Gairdner Hospital  
Verdun Street  
NEDLANDS, WA, 6009