ANZIPTR Report 2022

Australia and New Zealand Islet and Pancreas Transplant Registry data 1984-2021

This report is a compilation of data provided by Pancreas transplant units in Australia and New Zealand. The registry is funded in part by a grant from the Organ and Tissue Authority
www.anziptr.org

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We thank all contributors who have made the registry what it is and whose work has made this report possible.

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Governance structure

This report is a compilation of data provided by the four current solid-organ Pancreas transplant units in Australia and New Zealand: Auckland Renal Transplant Group, New Zealand; National Pancreas Transplant Unit Monash Medical Centre, Victoria; National Pancreas Transplant Unit, Westmead Hospital, NSW; South Australian/Northern Territory Transplant Service, Royal Adelaide Hospital, SA; The ANZIPTR registry is funded in part by the Organ and Tissue Authority.

Data release guidelines

The registry can provide de-identified data for at no cost to Transplant Physicians, Transplant Units, and Government Departments. Release of data for academic or clinical research projects is provisional on an agreed project plan and proof of ethical oversight. The registry will not provide any personally identifiable data.

The clinical data provided contains potentially sensitive information and should be used only within agreed guidelines. If data are further published elsewhere ANZIPTR permission is necessary prior to submission for publication, and ANZIPTR should be identified as the source of the data. If data provided by ANZIPTR is the primary source of data, then a copy of publication should be provided to ANZIPTR.

Data provided by ANZIPTR should be utilised by requesting parties only, further data sharing with other parties or projects is not permitted without prior approval from ANZIPTR. The data supplied will be in accordance with ANZIPTR data specifications. Please see www.anziptr.org for our data dictionary.

Participating Centres

Solid pancreas

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Dr Titi Chen	Physician
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Dr Ankit Sharma	Physician
Dr Melanie Wyld	Physician
Prof Henry Pleass	Director of Transplant Surgery
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Mr Paul Robertson	Transplant Co-ordinator

Monash Medical Centre

Prof Peter Kerr	Director of Nephrology
Prof John Kanellis	Director of Transplantation
A/Prof William Mulley	Physician
Mr Alan Saunder	Director of Surgery
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Miss Nancy Suh	Surgeon
Mr Stephen Thwaites	Surgeon
Mr Michael Wu	Surgeon
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Mrs Tia Mark	Transplant Clinical Nurse Consultant

Other:

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Dr Christine Russell	Surgeon
Dr Santosh Antony-Olakkengil	Surgeon
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New Zealand:

Auckland Renal Transplant Group

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Analysis and Methods

The aim of this report is to record all pancreas transplant activity in Australia and New Zealand. Data included in this report was locked on 30th June 2022, for all people transplanted up to the end of 2021. Please note new data is added to the registry regularly, and corrections are made where previous data are missing or where errors are discovered.

Kaplan-Meier survival curves were used to illustrate the survival distributions, and these were generated using Stata software version 16 (StataCorp, College Station, TX USA). Transplant survival is analysed and presented both including and excluding death with a functioning transplant. For patients receiving a second transplant, in calculating mortality, time was measured from time of first transplant.

Definitions

Pancreas transplant

A functioning pancreas transplant is defined as a recipient free of exogenous insulin dependence; thus a pancreas transplant failure is declared when either a pancreatectomy is performed, or when the recipient returns to permanent insulin therapy. Kidney transplants are defined as functioning if recipients are dialysis free. All causes of death are included in the mortality analyses.

Glossary

SPK	Simultaneous Kidney Pancreas Transplant
PTA	Pancreas Transplant Alone
PAK	Pancreas after Kidney Transplant
DBD	Donor after Brain Death
DCD	Donor after Circulatory Death
CMV	Cytomegalovirus
EBV	Epstein-Barr Virus
SD	Standard Deviation
IQR	Interquartile Range
NSW	New South Wales
VIC	Victoria
QLD	Queensland
SA	South Australia
WA	Western Australia
TAS	Tasmania
ACT	Australian Capital Territory
NT	Northern Territory
NZ	New Zealand

Synopsis

A total of 1000 solid organ pancreas transplants have been performed in Australia and New Zealand (ANZ), in 977 individuals from 1984-2021 (excluding islet transplants).

In 2021, 39 pancreas transplants were performed. By centre the number of transplants performed were: Auckland (5); Monash (7); Westmead (21); and Adelaide (4), and 2 elsewhere (see below). In 2021, 36 transplants were SPK while 1 was PAK, none were PTA, 1 was a combined liver and pancreas transplant, and 1 was a combined liver, pancreas and kidney transplant (both the latter took place at the Austin Hospital, Victoria).

Accessing report data

In 2015 ANZIPTR developed its own website: www.anziptr.org which describes the registry structure and function, outlines the procedure for data requests, and provides a download area for past reports. Since 2017, a slide set of key registry data tables and plots is available for download, to complement the ANZIPTR report.

The ANZIPTR welcomes suggestions for improvement or specific analyses you would like to see in the next annual report.

Chapter 1: Waiting List

Authors: Angela Webster, Juliet Byrnes, James Hedley, Paul Robertson, Tia Mark, Helen Pilmore, Danielle Stephenson

Overview of waiting list activity

Definitions

Patients join the waiting list on the date they are referred to the transplanting centre; however, this may occur some time before their kidneys fail. Patients are therefore classified as “under consideration” until they medically require a kidney pancreas transplant. Once they require a kidney pancreas transplant they are classified as “active” on the list while they remain medically fit. The “under consideration” classification also captures people recently referred to the transplant centre, who are still undergoing assessment about their medical fitness for pancreas transplant. People referred to a transplanting centre when they are already on dialysis become “active” on the list as soon as they are accepted as medically fit. People referred to a transplanting centre when their kidneys still function become active once their kidney disease progresses to such a level that dialysis is planned in the near future. Once active on the waiting list, a patient may be transplanted depending on multiple factors including waiting time, blood group, duration of dialysis and other considerations.

Patient waiting list flow

The patient waiting list activity in the last three years for Australia (Westmead, Monash and Royal Adelaide Units) and New Zealand are shown in Tables 1.1 and 1.2 respectively. In Australia, although the number of transplants has decreased over the last three years, the number of patients on the active waiting list has also decreased.

Table 1.1: Waiting list activity in Australia for the last three years

Activity	Patients (n)		
	2019	***2020***	***2021***
On active list at beginning of year	82	85	77
Added to active list during the year	60	46	65
Removed from active list during year	8	3	4
Pancreas transplants to patients on waiting list	40	47	34
Kidney only transplants to patients on waiting list	3	2	3
Transplants performed outside Australia/New Zealand	0	0	0
Died while active on list	6	2	0
On active waiting list at the end of year	85	77	101
Died within 12 months of removal from list	0	0	0
Under consideration but not active on list	192	190	164
Referred but declined for pancreas transplantation	2	2	2

Table 1.2: Waiting list activity in New Zealand for the last three years

Activity	Patients (n)		
	2019	***2020***	***2021***
On active list at beginning of year	3	5	6
Added to active list during the year	6	4	3
Removed from active list during year	0	1	1
Transplants to patients on waiting list	4	2	5
Kidney only transplants to patients on waiting list	0	0	0
Transplants performed outside Australia/New Zealand	0	0	0
Died while active on list	0	0	0
On active waiting list at the end of year	5	6	3
Died within 12 months of removal from list	0	0	0
Under consideration but not active on list	6	11	10
Referred but declined for pancreas transplantation	0	0	0

Distribution of active patients by state

Figure 1.1 and Table 1.3 show the state and country of residence for people active on the pancreas waiting list, by year and the pancreas transplanting centre they were referred to (Australia only).

Figure 1.1: Distribution of people active on the waiting list by state or country of residence, as of December 2021

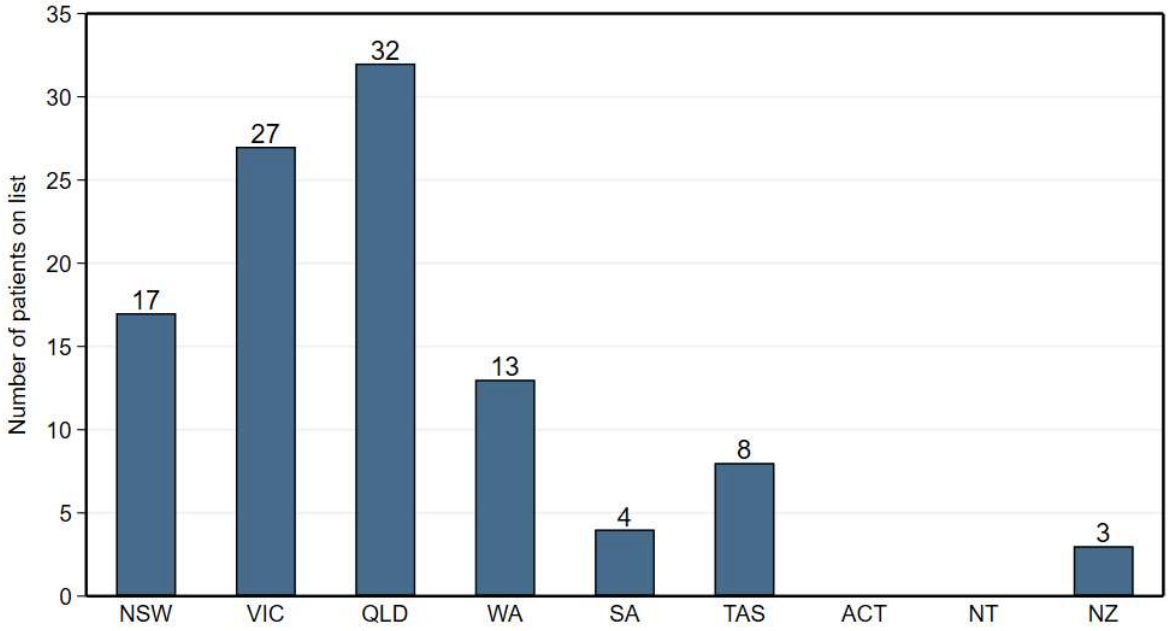


Table 1.3: Patient state of residence by Australian pancreas transplant unit for people active on the list at the end of the year for the past three years

	State of residence, n (row %)								
Year	***NSW***	***VIC***	***QLD***	***WA***	***SA***	***TAS***	***ACT***	***NT***	***Total***
Westmead (NSW)									
2021	17 (27)	0 (0)	31 (50)	13 (21)	1 (2)	0 (0)	0 (0)	0 (0)	62 (100)
2020	9 (23)	0 (0)	19 (48)	11 (28)	1 (3)	0 (0)	0 (0)	0 (0)	40 (100)
2019	12 (28)	1 (2)	18 (42)	11 (26)	1 (2)	0 (0)	0 (0)	0 (0)	43 (100)
Monash (VIC)									
2021	0 (0)	27 (74)	1 (3)	0 (0)	0 (0)	8 (24)	0 (0)	0 (0)	36 (100)
2020	2 (6)	26 (76)	0 (0)	0 (0)	1 (3)	5 (15)	0 (0)	0 (0)	34 (100)
2019	1 (3)	29 (76)	0 (0)	0 (0)	2 (5)	6 (16)	0 (0)	0 (0)	38 (100)
Royal Adelaide (SA)									
2021	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)	0 (0)	3 (100)
2020	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)	0 (0)	3 (100)
2019	0 (0)	0 (0)	0 (0)	0 (0)	4 (100)	0 (0)	0 (0)	0 (0)	4 (100)

Table 1.4 shows the state of residence for people who are under consideration together with people who are active on the pancreas waiting list, by the pancreas transplanting

centre they were referred to, in Australia. For New Zealand data, there is no breakdown beyond that seen in Table 1.2.

Table 1.4: Patient state of residence by Australian pancreas transplant unit for people under consideration and active on the list at the end of the year for the past three years[1]

	State of residence, n (row %)								
Year	***NSW***	***VIC***	***QLD***	***WA***	***SA***	***TAS***	***ACT***	***NT***	***Total***
Westmead (NSW)									
2021	47 (31)	0 (0)	54 (36)	42 (28)	7 (5)	1 (<1)	0 (0)	0 (0)	151
2020	50 (33)	0 (0)	52 (34)	41 (27)	7 (5)	1 (<1)	0 (0)	0 (0)	151
2019	57 (36)	1 (<1)	51 (31)	44 (28)	7 (4)	1 (<1)	0 (0)	0 (0)	161
Monash (VIC)									
2021	1 (<1)	90 (83)	1 (<1)	0 (0)	7 (6)	10 (9)	0 (0)	0 (0)	109
2020	3 (3)	84 (78)	1 (<1)	0 (0)	7 (6)	13 (<12)	0 (0)	0 (0)	108
2019	3 (3)	85 (79)	1 (<1)	0 (0)	8 (7)	11 (10)	0 (0)	0 (0)	108
Royal Adelaide (SA)									
2021	0 (0)	0 (0)	0 (0)	0 (0)	5 (100)	0 (0)	0 (0)	0 (0)	5
2020	0 (0)	0 (0)	0 (0)	0 (0)	7 (100)	0 (0)	0 (0)	0 (0)	7
2019	0 (0)	0 (0)	0 (0)	0 (0)	8 (100)	0 (0)	0 (0)	0 (0)	8

[1] Excludes one patient on the waiting list for a combined liver, pancreas and kidney transplant at Austin Hospital in 2020.

New referrals received over time

Table 1.5 shows the number of new referrals received by transplanting units in Australia and New Zealand over time, and by state of residence (for Australian units only).

***Table 1.5: New referrals received over time by pancreas transplant unit and state of residence*[1]**

	State of residence, n (row %)								
Year	***NSW***	***VIC***	***QLD***	***WA***	***SA***	***TAS***	***ACT***	***NT***	***Total***
Westmead (NSW)									
2021	6 (26)	0 (0)	14 (61)	3 (13)	0 (0)	0 (0)	0 (0)	0 (0)	23
2020	9 (45)	0 (0)	11 (55)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	20
2019	16 (50)	0 (0)	12 (38)	4 (13)	0 (0)	0 (0)	0 (0)	0 (0)	32
Monash (VIC)									
2021	0 (0)	19 (90)	0 (0)	0 (0)	1 (5)	1 (5)	0 (0)	0 (0)	21
2020	0 (0)	24 (83)	0 (0)	0 (0)	0 (0)	5 (17)	0 (0)	0 (0)	29
2019	0 (0)	27 (90)	0 (0)	0 (0)	0 (0)	3 (10)	0 (0)	0 (0)	30
Royal Adelaide (SA)									
2021	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)	0 (0)	3
2020	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)	1
2019	0 (0)	0 (0)	0 (0)	0 (0)	5 (100)	0 (0)	0 (0)	0 (0)	5
Auckland (NZ)									
2021	--	--	--	--	--	--	--	--	3
2020	--	--	--	--	--	--	--	--	9
2019	--	--	--	--	--	--	--	--	4

[1] Excludes 1 patient referred for a combined liver, pancreas and kidney transplant at Austin Hospital in 2020 and 1 patient referred for a combined liver and pancreas transplant at Austin Hospital in 2021.

Patient characteristics for those active on the list in 2021

The following figures illustrate the distribution of other characteristics of those active on the waiting list in 2021, including the distribution of blood groups and patient ages.

Figure 1.2: Distribution of people active on the list by their blood group, at December 2021

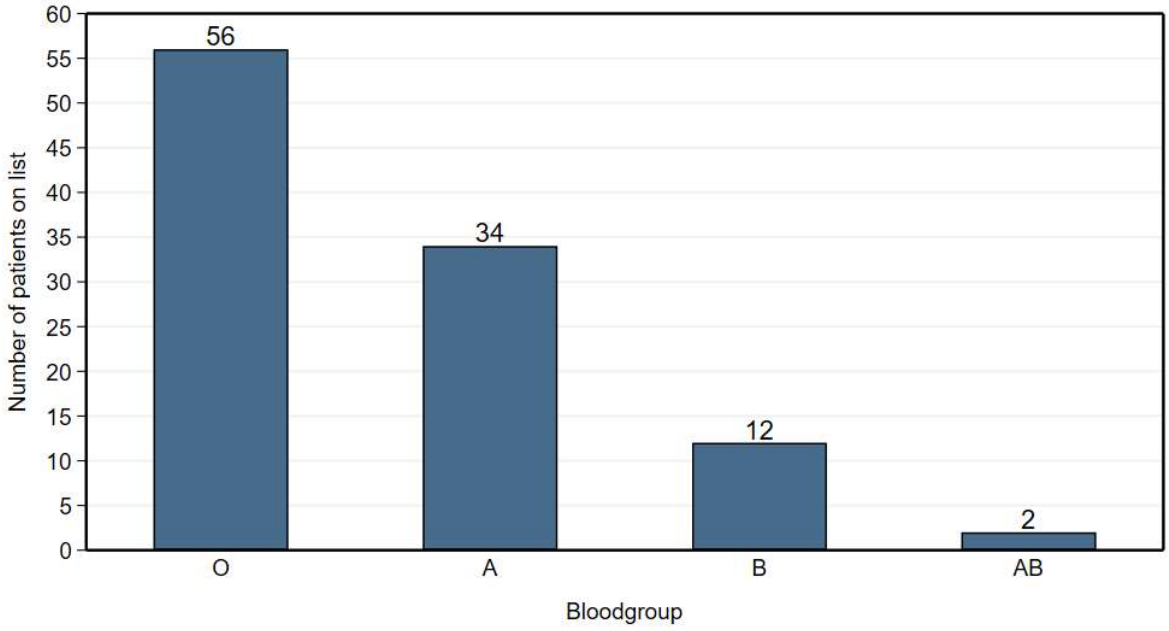
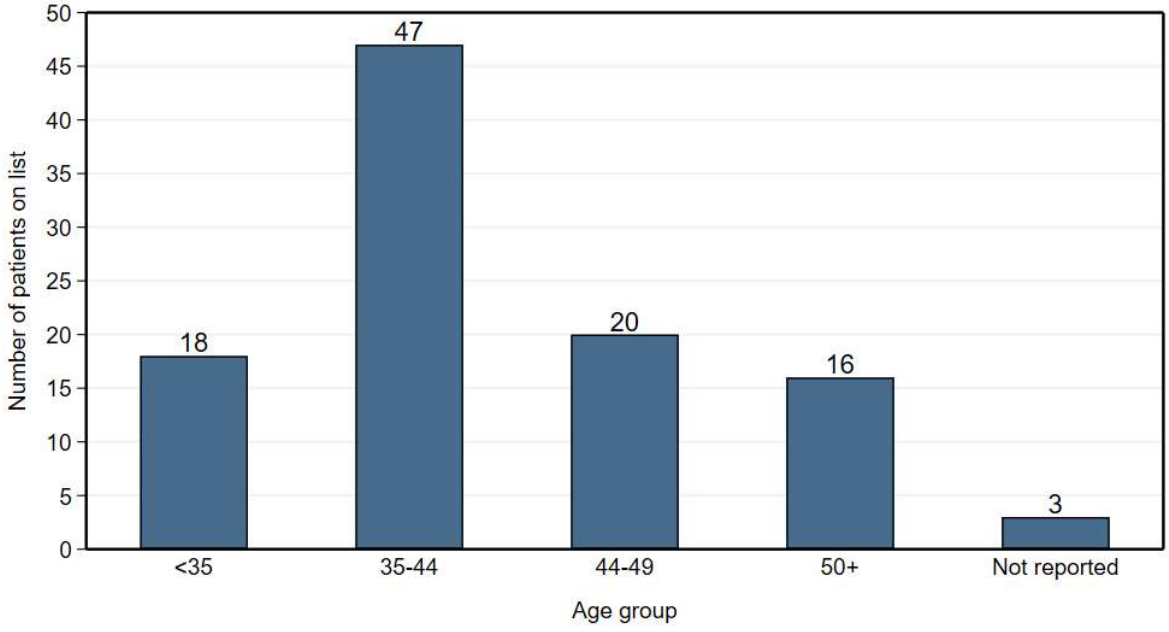


Figure 1.3: Distribution of people active on the list by their age, at December 2021



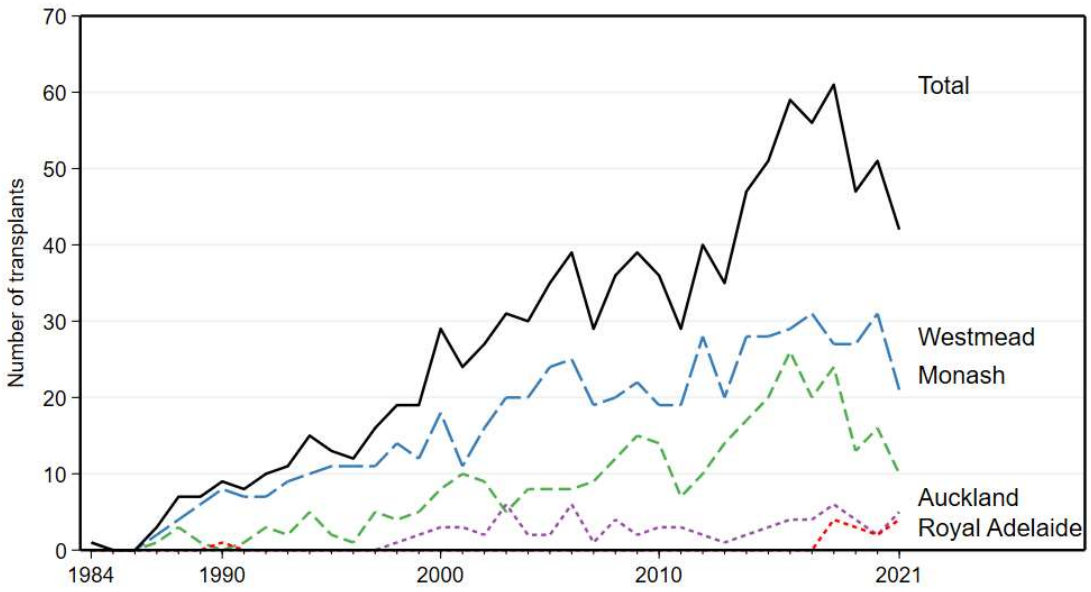
Chapter 2: Pancreas transplant recipients

Authors: Angela Webster, Paul Robertson, Tia Mark, Helen Pilmore, Danielle Stephenson, James Hedley, Patrick Kelly

Pancreas transplant incidence

A total of 1000 solid organ pancreas transplants have been performed in Australia and New Zealand (ANZ) from 1984-2021. Transplants have been performed in Westmead (612), Monash (295), Auckland (73), and Royal Adelaide (14). In 2019 the Royal Adelaide Hospital started pancreas transplantation in South Australia using an ATG based steroid free protocol. There have also been multi-organ transplants including pancreas in several locations over time. In the last year this was 1 liver-pancreas transplant and 1 pancreas, liver and kidney transplant, both conducted at Austin Hospital in Victoria. Since 1984 there have been a total of 6 multi-organ transplants, conducted at Royal Prince Alfred (1), Royal Melbourne Hospital (1), Queen Elizabeth Hospital (1), and Austin Hospital (3). Figure 2.1 shows pancreas transplants over time. The number of transplants has substantially increased in last decade compared to previous years. There has been a drop in activity recently which may be related to the impact of the COVID-19 pandemic.

Figure 2.1: Incidence of pancreas transplants over time, 1984-2021



Note: There have been six pancreas transplants performed in Australia, which were not conducted by either Westmead, Monash, or Royal Adelaide. These occurred in 1988, 1990, 2005, and 2017, and two occurred in 2021.

In 2021, 39 people received a pancreas transplant, by centre this was; Monash (7), Westmead (21), Royal Adelaide (4), Auckland (5) and Austin Hospital (2). The number of transplants in 2021 decreased by 20% compared to 2020.

Not all pancreas transplant operations are undertaken with the same organs. Simultaneous pancreas-kidney transplant (SPK) is the most common operation, representing 99% of all pancreas transplants in Australia and New Zealand. From 39 transplants performed in 2021, 36 were SPK, none were Pancreas transplant alone (PTA), and 2 were Pancreas after kidney (PAK). PAK operations are done for type 1 diabetic people who either had a first kidney transplant without a pancreas (most commonly from a living donor relative) and subsequently opt for a pancreas, or for people who underwent an SPK and have good kidney transplant function, but had a pancreas transplant failure, so need a further pancreas transplant. Pancreas transplant alone (PTA) is a less common operation and occurs very rarely. Indications for PTA include management of patients with hypoglycaemic unawareness or brittle diabetes that have failed best medical therapy. On rarer occasions, a multi-organ transplant is undertaken which includes a pancreas transplant. In 2021 there were 2 transplant procedures in this category, both at the Austin hospital in Victoria. One was a liver pancreas, and one a liver, pancreas and kidney transplant. Previously there have been one simultaneous pancreas, liver, and kidney transplant which was performed in 2005, one liver, pancreas, and intestine transplant in 2012, one liver and pancreas transplant in 2016, and one liver, kidney, pancreas, stomach and intestine transplant in 2017. The distribution of operation types is shown in **Error! Reference source not found.**, and the number of transplants by operation type is shown in Table 2.1.

Figure 2.2: Pancreas transplants over time by type, Australia and New Zealand

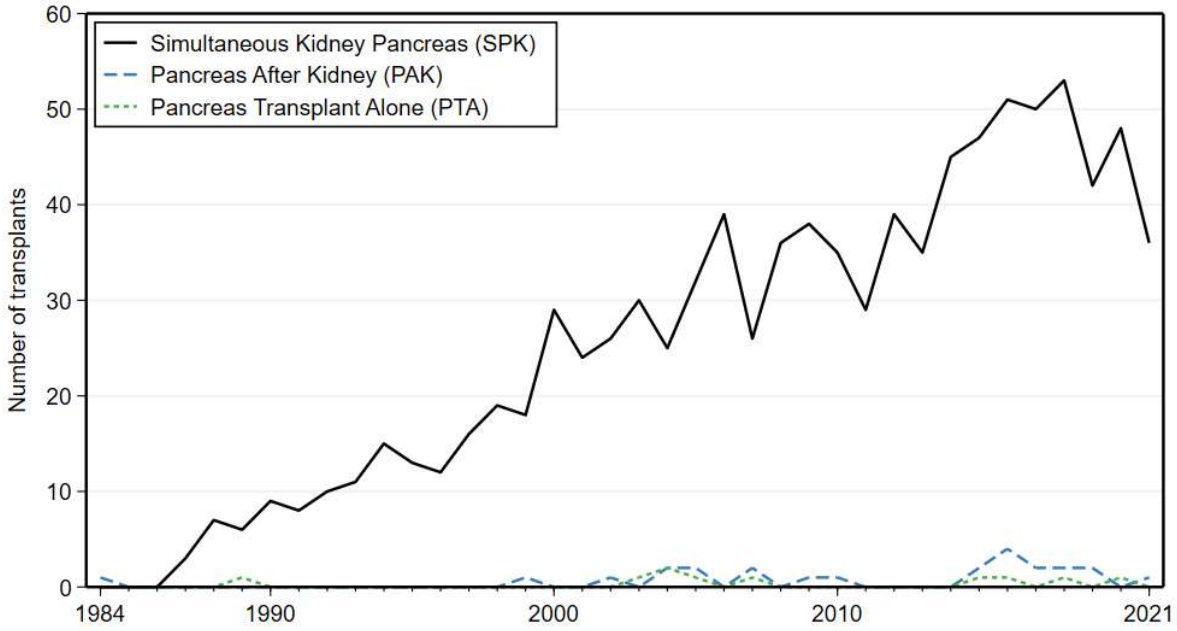


Table 2.1: Pancreas transplant operations over time, by transplant hospital

Year	Hospital and transplant type, n (row %)								
	Westmead			*Monash*			*Royal Adelaide*	*New Zealand*	*Total*
	SPK	*PAK*	*PTA*	*SPK*	*PAK*	*PTA*	*All*	*All*	*All*
2021	21 (54)	0 (0)	0 (0)	6 (15)	0 (0)	1 (3)	4 (10)	5 (13)	39
2020	30 (61)	0 (0)	1 (2)	13 (27)	0 (0)	0 (0)	3 (6)	2 (4)	49
2019	26 (59)	1 (2)	0 (0)	10 (23)	0 (0)	0 (0)	3 (7)	4 (9)	44
2018	24 (43)	2 (4)	0 (0)	20 (36)	0 (0)	0 (0)	4 (7)	6 (11)	56
2017	30 (58)	0 (0)	0 (0)	16 (31)	2 (4)	0 (0)	0 (0)	4 (8)	52
2016	26 (46)	3 (5)	0 (0)	21 (38)	1 (2)	1 (2)	0 (0)	4 (7)	56
2015	27 (54)	1 (2)	0 (0)	18 (36)	1 (2)	0 (0)	0 (0)	3 (6)	50
2014	28 (62)	0 (0)	0 (0)	15 (33)	0 (0)	0 (0)	0 (0)	2 (4)	45
2013	20 (57)	0 (0)	0 (0)	14 (40)	0 (0)	0 (0)	0 (0)	1 (3)	35
2012	28 (72)	0 (0)	0 (0)	9 (23)	0 (0)	0 (0)	0 (0)	2 (5)	39
2011	19 (66)	0 (0)	0 (0)	7 (24)	0 (0)	0 (0)	0 (0)	3 (10)	29
2010	19 (53)	0 (0)	0 (0)	14 (39)	0 (0)	0 (0)	0 (0)	3 (8)	36
2009	22 (56)	0 (0)	0 (0)	14 (36)	1 (3)	0 (0)	0 (0)	2 (5)	39
2008	20 (56)	0 (0)	0 (0)	12 (33)	0 (0)	0 (0)	0 (0)	4 (11)	36
2007	16 (55)	2 (7)	1 (3)	9 (31)	0 (0)	0 (0)	0 (0)	1 (3)	29
2006	25 (64)	0 (0)	0 (0)	8 (21)	0 (0)	0 (0)	0 (0)	6 (15)	39
2005	21 (62)	2 (6)	1 (3)	8 (24)	0 (0)	0 (0)	0 (0)	2 (6)	34
2004	15 (52)	2 (7)	2 (7)	8 (28)	0 (0)	0 (0)	0 (0)	2 (7)	29
2003	19 (61)	0 (0)	1 (3)	5 (16)	0 (0)	0 (0)	0 (0)	6 (19)	31
2002	15 (56)	1 (4)	0 (0)	9 (33)	0 (0)	0 (0)	0 (0)	2 (7)	27
2001	11 (46)	0 (0)	0 (0)	10 (42)	0 (0)	0 (0)	0 (0)	3 (13)	24
2000	18 (62)	0 (0)	0 (0)	8 (28)	0 (0)	0 (0)	0 (0)	3 (10)	29
1999	11 (58)	1 (5)	0 (0)	5 (26)	0 (0)	0 (0)	0 (0)	2 (11)	19
1998	14 (74)	0 (0)	0 (0)	4 (21)	0 (0)	0 (0)	0 (0)	1 (5)	19
1997	11 (69)	0 (0)	0 (0)	5 (31)	0 (0)	0 (0)	0 (0)	0 (0)	16
1996	11 (92)	0 (0)	0 (0)	1 (8)	0 (0)	0 (0)	0 (0)	0 (0)	12
1995	11 (85)	0 (0)	0 (0)	2 (15)	0 (0)	0 (0)	0 (0)	0 (0)	13
1994	10 (67)	0 (0)	0 (0)	5 (33)	0 (0)	0 (0)	0 (0)	0 (0)	15
1993	9 (82)	0 (0)	0 (0)	2 (18)	0 (0)	0 (0)	0 (0)	0 (0)	11
1992	7 (70)	0 (0)	0 (0)	3 (30)	0 (0)	0 (0)	0 (0)	0 (0)	10
1991	7 (88)	0 (0)	0 (0)	1 (13)	0 (0)	0 (0)	0 (0)	0 (0)	8
1990	8 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	8
1989	5 (71)	0 (0)	1 (14)	1 (14)	0 (0)	0 (0)	0 (0)	0 (0)	7
1988	4 (67)	0 (0)	0 (0)	2 (33)	0 (0)	0 (0)	0 (0)	0 (0)	6
1987	2 (67)	0 (0)	0 (0)	1 (33)	0 (0)	0 (0)	0 (0)	0 (0)	3
1986	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0
1985	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0
1984	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)	1
Total									

SPK, simultaneous pancreas-kidney; PAK, pancreas after kidney; PTA, pancreas alone

The above table excludes the six transplants performed in Australia outside of Westmead, Monash, or Royal Adelaide in 1988, 1990, 2005, and 2017 and the two performed in 2021.

The above table also excludes one combined liver-pancreas transplant performed at Monash in 2016.

Patients transplanted by state

The states of origin of the people receiving pancreas transplants at each transplant unit in Australia over time are shown in Table 2.2.

Table 2.2: Distribution of state of residence of people receiving pancreas transplants over time[1]

	State of residence, n (row %)								
Year	***NSW***	***VIC***	***QLD***	***WA***	***SA***	***TAS***	***ACT***	***NT***	***Total***
Westmead (NSW)									
2021	9 (43)	0 (0)	11 (52)	1 (5)	0 (0)	0 (0)	0 (0)	0 (0)	21
2020	16 (52)	1 (3)	11 (35)	3 (10)	0 (0)	0 (0)	0 (0)	0 (0)	31
2019	15 (56)	0 (0)	10 (37)	2 (7)	0 (0)	0 (0)	0 (0)	0 (0)	27
Monash (VIC)									
2021	2 (29)	5 (71)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	7
2020	0 (0)	12 (86)	0 (0)	0 (0)	1 (7)	1 (7)	0 (0)	0 (0)	14
2019	0 (0)	7 (70)	0 (0)	0 (0)	1 (10)	2 (20)	0 (0)	0 (0)	10
Royal Adelaide (SA)									
2021	0 (0)	0 (0)	0 (0)	0 (0)	4 (100)	0 (0)	0 (0)	0 (0)	4
2020	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	2
2019	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)	0 (0)	3
Auckland (NZ)									
2021	--	--	--	--	--	--	--	--	5
2020	--	--	--	--	--	--	--	--	2
2019	--	--	--	--	--	--	--	--	4

[1]Excludes 1 patient who received a combined liver, kidney and pancreas transplant at Austin Hospital in 2021, and 1 patient who received a combined liver and pancreas transplant at Austin Hospital in 2021.

Demographics of new pancreas transplant recipients

The characteristics of pancreas transplant recipients in 2021 and in previous years are shown in Table 2.3. The primary diagnosis causing end stage kidney disease of recipients during 2021 and historically was type I diabetes. The number of diabetic recipients with other cause of end stage kidney failure was small. Type 2 diabetes is not regarded as an indication for SPK in Australia and New Zealand, thought there may be rare exceptions. Consequently the number of people with type II diabetes accepted for pancreas transplantation was also small, and none received a transplant in 2021.

Table 2.3: Demographics and characteristics of pancreas transplant recipients[1]

Patients, n (column %)	2021	1984-2020	Total
Age category			
Median (IQR)	42 (15)	39 (11)	39 (11)
0-34	11 (28)	293 (30)	304 (30)
35-44	14 (36)	443 (46)	457 (46)
45-50	8 (21)	157 (16)	165 (17)
50+	6 (15)	67 (7)	73 (7)
Not reported	0 (0)	1 (<1)	1 (<1)
Sex			
Female	18 (46)	445 (46)	463 (46)
Male	21 (54)	516 (54)	537 (54)
Cause of end stage kidney disease			
Diabetes type 1	36 (92)	491 (51)	527 (53)
Diabetes type 2	0 (0)	2 (<1)	2 (<1)
Haemolytic uraemic syndrome	0 (0)	1 (<1)	1 (<1)
Interstitial nephritis	0 (0)	1 (<1)	1 (<1)
Wegener's granulomatosis	0 (0)	1 (<1)	1 (<1)
Glomerulonephritis	1 (3)	0 (0)	1 (<1)
No kidney disease[1]	1 (3)	18 (2)	19 (2)
Not reported	1 (3)	447 (47)	448 (45)
Ethnicity[2]			
Indigenous Australian	0 (0)	2 (<1)	2 (<1)
Maori	0 (0)	8 (<1)	8 (<1)
Pacific Islander	1 (3)	10 (1)	11 (1)
White	37 (95)	902 (94)	939 (94)
North Asian	0 (0)	4 (<1)	4 (<1)
South-East Asian	0 (0)	1 (<1)	1 (<1)
Southern and Central Asian	0 (0)	19 (2)	19 (2)
North African and Middle Eastern	1 (3)	13 (1)	14 (1)
Other	0 (0)	1 (<1)	1 (<1)
Not reported	0 (0)	1 (<1)	1 (<1)

Patients, n (column %)	2021	1984-2020	Total
Blood group			
O	9 (23)	443 (46)	452 (45)
A	25 (64)	382 (40)	407 (41)
B	4 (10)	90 (9)	94 (9)
AB	1 (3)	45 (5)	46 (5)
Not reported	0 (0)	1 (<1)	1 (<1)
Total	39	961	1000

[1] Includes 23 pancreas transplants after kidney (PAK) and 10 pancreas transplants alone (PTA).

[2] Ethnicity classified according to the Australian Bureau of Statistics standard classification, 2nd Edition; http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/1249.02011

The type of pancreas transplants and the types of donors for transplants performed in 2021 is presented in Table 2.4, stratified by country and sex.

Table 2.4: Transplant and donor pathway in 2021 by country and donor sex[1]

	Australia		New Zealand		Overall		
	Female	*Male*	*Female*	*Male*	*Female*	*Male*	*Total*
Pancreas alone							
DBD	0	1	0	0	0	1	3
DCD	0	0	0	0	0	0	0
Living donor	0	0	0	0	0	0	0
SPK							
DBD	16	14	1	4	16	18	36
DCD	0	0	0	0	0	0	0

DBD, donor after brain death; DCD, donor after circulatory death; SPK, simultaneous pancreas-kidney

[1] There were 2 PAK transplants for which sex was not reported. In addition there was 1 DBD SPK transplant for which sex was not reported.

Balance of donor and recipient characteristics in 2021

Cross tabulations of donor and recipient blood group and gender for people transplanted in 2021 are displayed in Table 2.5 and Table 2.6. These distributions remain similar to previous years.

Table 2.5: Cross tabulation of recipient and donor blood groups for 2021

Recipient blood group	Donor blood group[2], n (row %)					Total
	O	*A*	*B*	*AB*	*Not reported*	
O	8	1	0	0	0	9
A	3	20	0	0	2	25
B	1	0	3	0	0	4
AB	0	0	0	1	0	1
Total	12	21	3	1	0	39

[1] Donor blood group not reported for 3 transplants.

Table 2.6: Cross tabulation of recipient and donor sex for 2021

Recipient sex	Donor sex[1], n (row %)			Total
	Female	*Male*	*Not reported*	
Female	7	9	2	18
Male	10	10	1	21
Total	17	19	3	39

McNemar's test for difference p=1.0

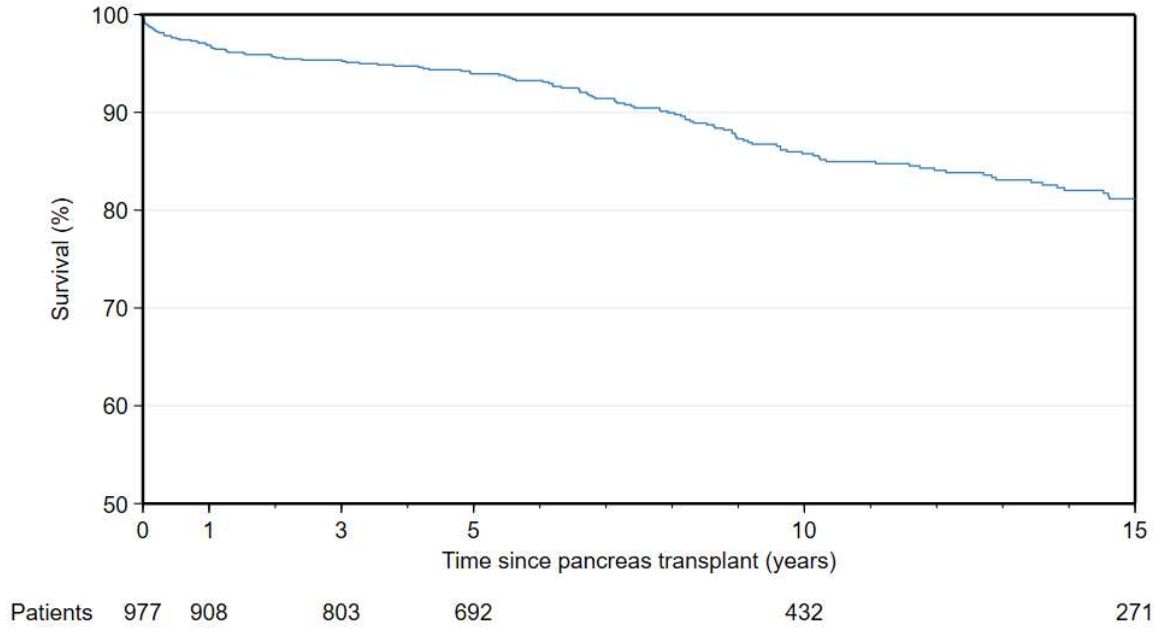
[1] Donor sex not reported for 3 transplants.

Patient survival

Patient survival is calculated from the date of transplantation until death. Patients still alive at the end of the follow-up period are censored. For people who had more than one transplant, their survival is calculated from the date of their first transplant. For these analyses we had survival data for 977 patients, 22 of whom have received a second pancreas transplant and 1 of whom has received a third pancreas transplant, for a total of 1000 pancreas transplants. Note that for the following survival plots survival proportion on the y-axes does not always start at zero; this is to better demonstrate some observed differences.

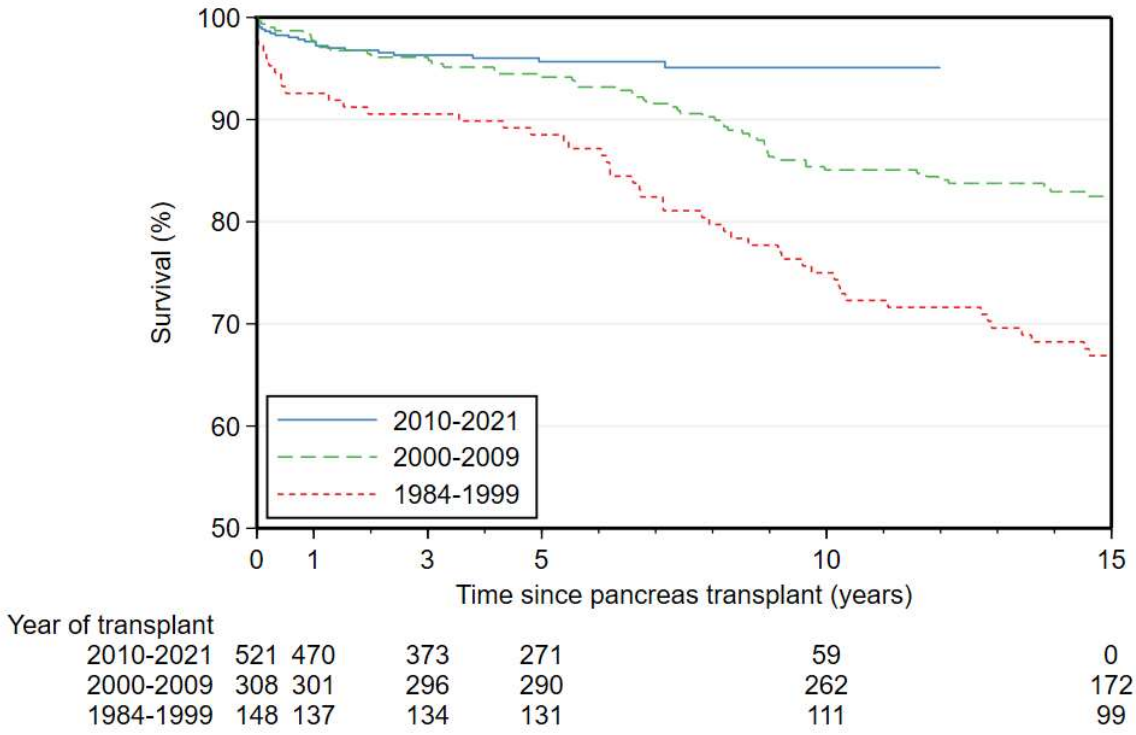
Figure 2.3 shows overall survival following pancreas transplant. There were 10139 years of follow-up, and 152 people died in that time. Survival at 1 year was 96.9%, at 5 years 94.0%, at 10 years 85.8% and at 15 years 81.2%.

Figure 2.3: Patient survival following pancreas transplantation in Australia and New Zealand.



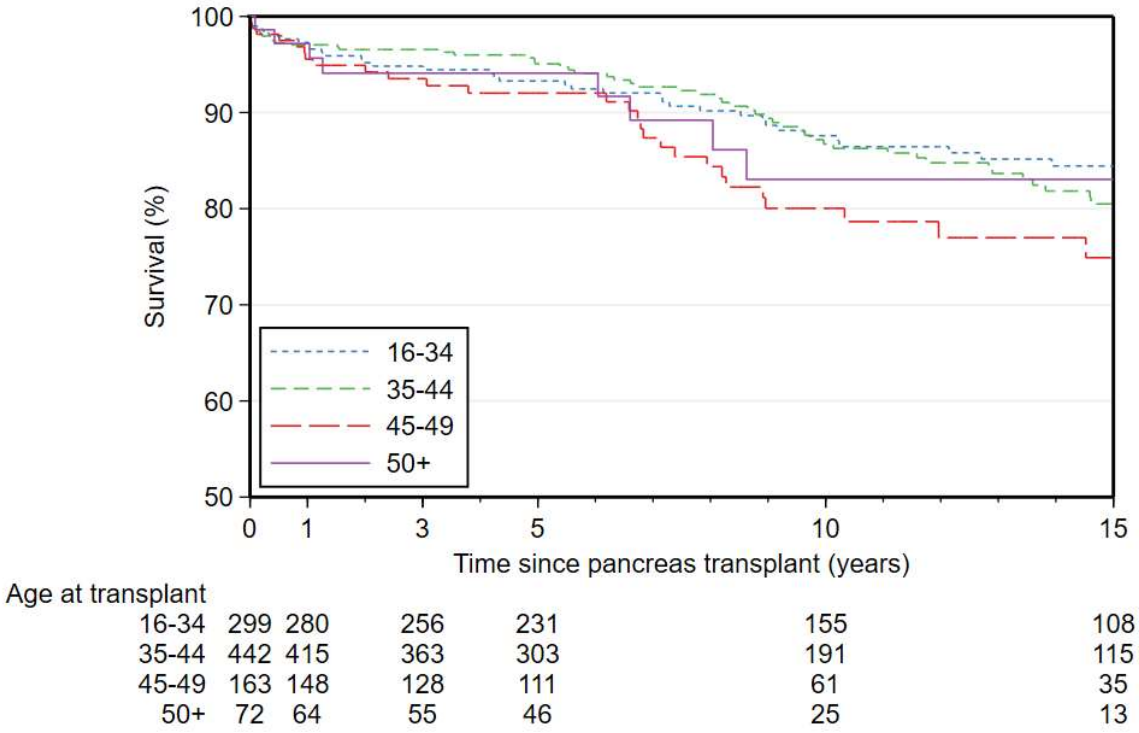
Patient survival by era of transplantation is shown in Figure 2.4. Survival has improved over time (p<0.001). Survival at 1 year for people transplanted before 2000 was 92.6%; in recent years this has risen to 97.6%. Survival at 5 years was 88.5% for those transplanted before 2000, where for those transplanted in 2010 or later, 5-year survival was 95.7%.

Figure 2.4: Patient survival by era of transplantation



Patient survival by age at transplantation is shown in Figure 2.5. People that were older at the time of pancreas transplantation had poorer survival than those who were younger (p=0.06). Survival at 1 year for recipients aged <35 years was 97.3%, and for those aged 35-44 was 97.0%, whereas for those aged 45-49 was 95.6% and for those 50 or older was 97.2%. Survival at 5 years for those aged <35 years was 93.3%, and for those aged 35-44 was 95.1%, whereas for those aged 45-49 was 92.0% and for those 50 or older was 94.1%. The greater survival for the 50 years and older group may be because these recipients are a more highly selected population.

Figure 2.5: Patient survival by age at transplantation



Pancreas survival

Pancreas transplant survival was calculated from the time of transplant until the time of permanent return to insulin therapy or pancreatectomy. We calculated both pancreas failure including death with a functioning pancreas and pancreas failure censored at death with a functioning transplant. For pancreas transplant survival we included all pancreas transplants undertaken, including those who had received a pancreas transplant twice (23 patients). At the time of this report, we had survival records for 1000 pancreas transplants.

Figure 2.6 shows pancreas transplant survival censored at death. Over 8719 years of follow-up, there were 154 pancreas transplant failures (excluding people who died with a functioning transplant). Overall, 1-year pancreas transplant survival was 91.3%, 5-year survival 87.0%, and 10-year survival 83.9%.

Figure 2.6: Pancreas transplant survival (censored at death)

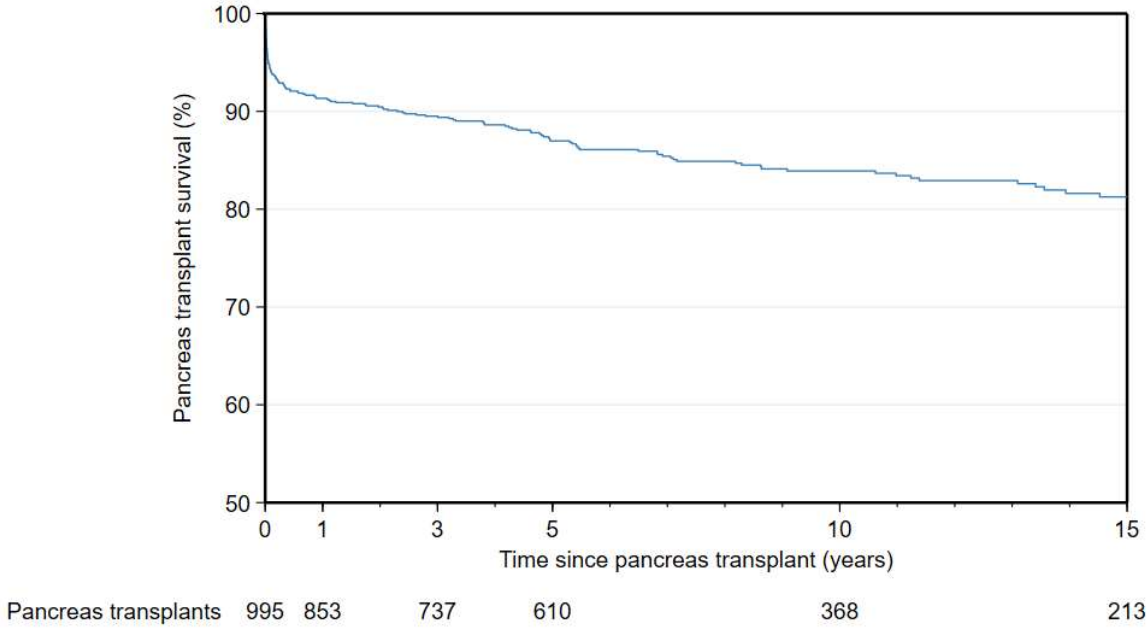
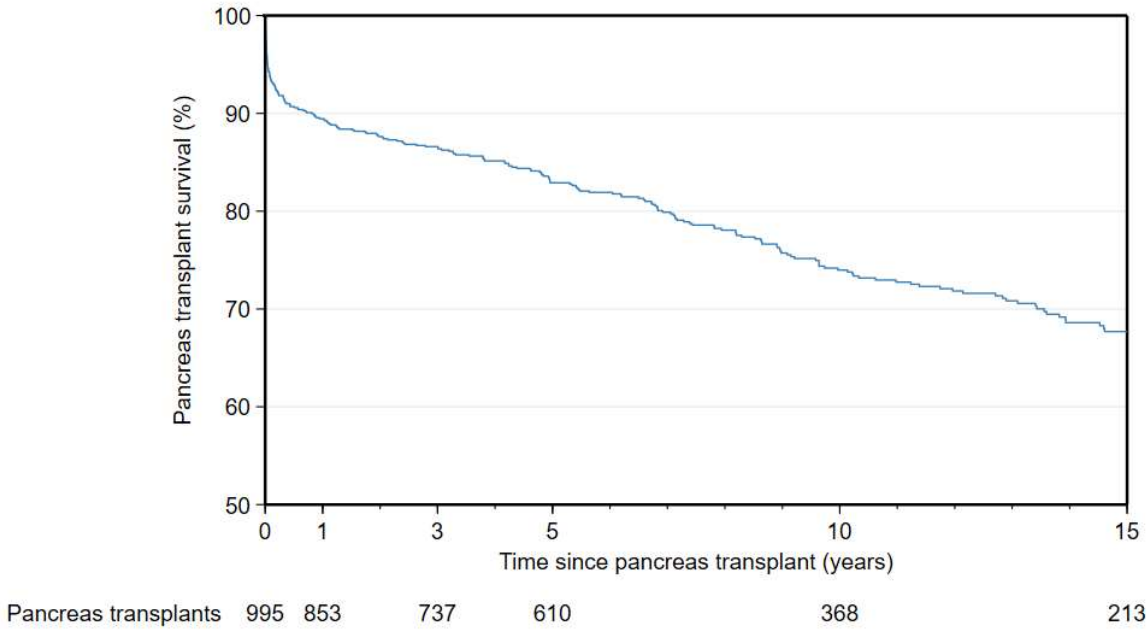


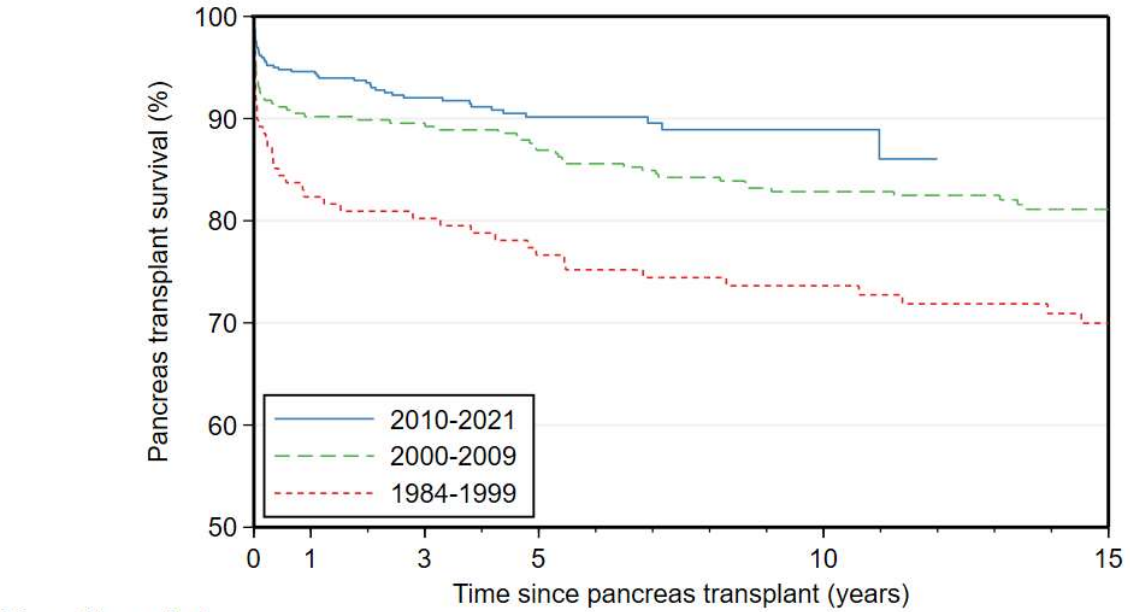
Figure 2.7 shows pancreas transplant survival including death with a functioning pancreas. Over the same observation time there were 267 recipients who either died or experienced pancreas transplant failure. Survival at 1, 5 and 10 years was 89.5%, 82.9% and 74.0% respectively.

Figure 2.7: Pancreas transplant survival (including death as transplant failure)



Survival of pancreas transplants has changed over time, as shown in Figure 2.8. Survival improved markedly over time (p=0.004). For those transplanted prior to 2000, 1-year pancreas transplant survival was 82.3%, and 5-year survival 76.6%. For those transplanted in 2010 or later, 1-year survival was 94.6% and 5-year survival 90.2%.

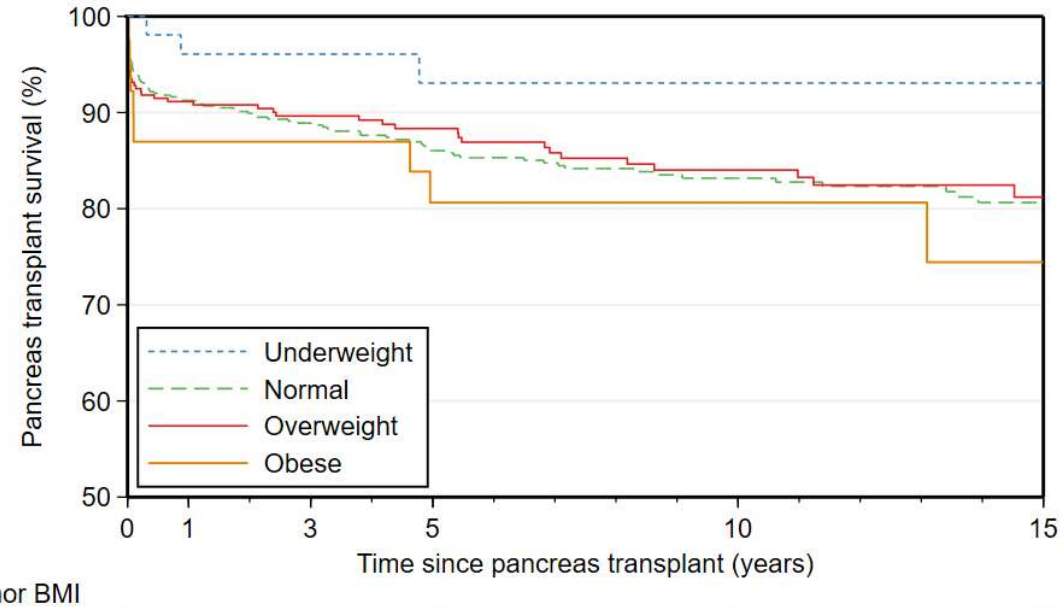
Figure 2.8: Pancreas transplant survival over time (censored at death)



Year of transplant						
2010-2021	528	453	348	242	51	0
2000-2009	317	282	276	262	230	140
1984-1999	150	118	113	106	87	73

Pancreas transplant survival by donor BMI is presented in Figure 2.9. Most donors (59%) were normal weight (BMI 18.5-25). However, 5% were underweight (BMI <18.5), 32% were overweight (BMI 25-29) and 4% were obese (BMI 30+). While Figure 2.9 suggests separation of survival curves, there was no statistical association between donor BMI and pancreas survival (p=0.37). Pancreas transplant survival at 1 year was 91.3% for transplants where the donor was normal weight normal BMI, 96.1% for transplants where the donor was underweight, 91.1% for transplants where the donor was overweight, and 87.0% where the donor was obese.

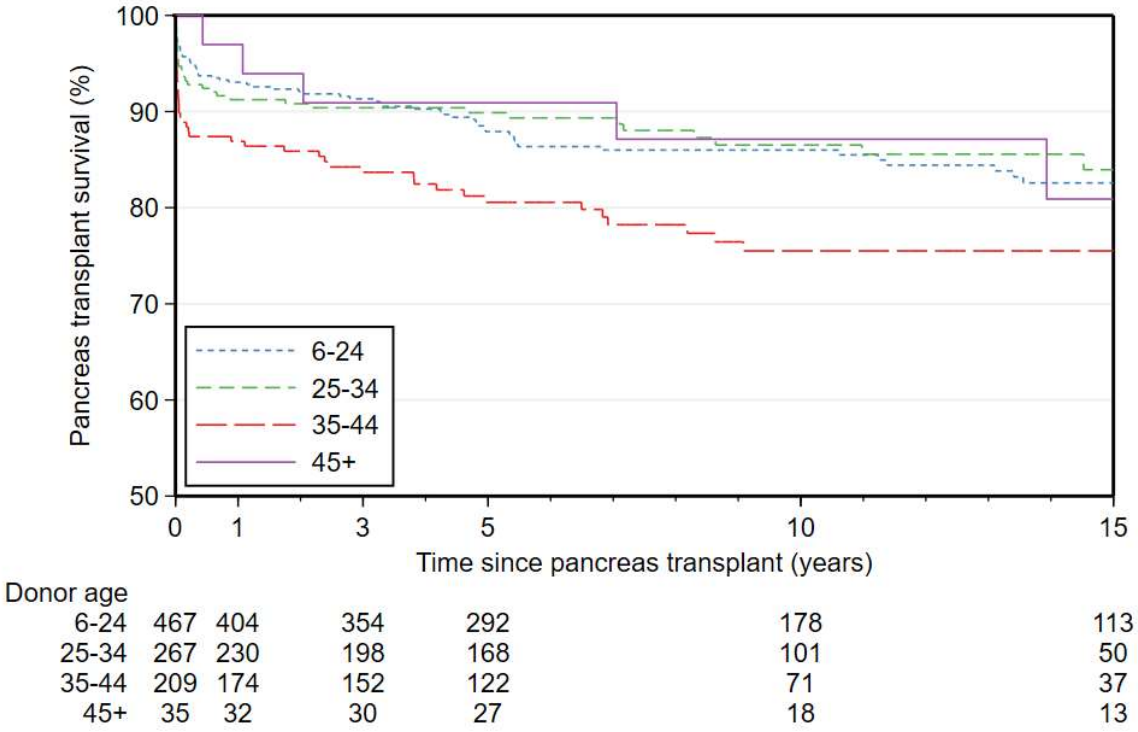
Figure 2.9: Pancreas transplant survival by donor BMI (censored at death)



Donor BMI						
Underweight	53	47	43	30	18	15
Normal	569	491	433	364	212	130
Overweight	307	266	229	190	119	60
Obese	39	33	30	25	19	8

Pancreas transplant survival by donor age is presented in Figure 2.10. The survival curves are poorer for donors aged 35-44 compared with those 45 and older, or younger donors (p=0.03). We can only hypothesise that any difference may be due to donors over 45 being a more highly selected group, compared to the donors aged 35-44. Pancreas transplant survival at 1 year was 93.1% for transplants from donors aged 6-24 years, 91.2% for donors aged 25-34 years, 86.9% for donors aged 35-44 years, and 97.0% for donors aged 45+ years.

Figure 2.10: Pancreas transplant survival by donor age (censored at death)



Pancreas transplant survival at 1 year and 5 years post-transplant, censored at death and stratified by country and era of transplantation is presented in Table 2.7.

Table 2.7: Pancreas transplant survival censored at death, by country and era

	Australia					New Zealand				
Year of transplant		*1-year*		*5-year*			*1-year*		*5-year*	
	N	*n*	*%*	*n*	*%*	*N*	*n*	*%*	*n*	*%*
2012-2017	263	237	93.03	179	88.23	16	15	93.75	10	87.50
2013-2018	276	251	94.11	151	90.50	20	19	95.00	8	90.00
2014-2019	282	259	94.96	125	92.54	23	22	95.65	7	90.62
2015-2020	286	269	96.47	92	94.54	23	23	100.00	6	94.44
2016-2021	273	224	96.93	48	94.99	25	20	96.00	4	96.00

Prevalence of functioning pancreas transplants

We calculated the point prevalence of people living in Australia and New Zealand who were alive with a functioning transplant on 31st December each year for the last five years (Table 2.8). The below numbers exclude people still alive, but whose pancreas transplant has failed. The number of functioning transplants is increasing over time, possibly because of increased survival of pancreas transplants while the number of new transplants performed remains relatively steady over time.

Table 2.8: People alive with a functioning pancreas transplant in Australia and New Zealand by year and residence, at year's end

State/country of residence	2017	2018	2019	2020	2021
New South Wales	140	153	167	183	193
Victoria	167	184	191	205	215
Queensland	109	116	126	137	148
Western Australia	28	30	32	35	36
South Australia	40	47	50	53	57
Tasmania	25	27	29	29	29
Australian Capital Territory	15	15	15	15	15
Northern Territory	4	4	4	4	4
New Zealand	38	44	48	48	52
Total	**566**	**620**	**662**	**709**	**749**

Kidney transplant survival

Kidney transplant survival was calculated for those who received SPK transplants, from the time of transplantation until the time of return to dialysis. We calculated both kidney failure including death with a functioning kidney and kidney failure censored at death with a functioning graft. For kidney transplant survival we included only SPK transplants and excluded PAK transplant recipients. We had survival records for 962 SPK transplants.

Figure 2.11 shows kidney survival censored at death. Over 9,172 years of observation, there were 89 kidney transplant failures (excluding people who died with a functioning kidney transplant). Overall, 1-year kidney transplant survival was 97.4%, 5-year survival 94.8%, and 10-year survival 90.6%.

Figure 2.11: Kidney transplant survival for people receiving SPK transplants (censored at death)

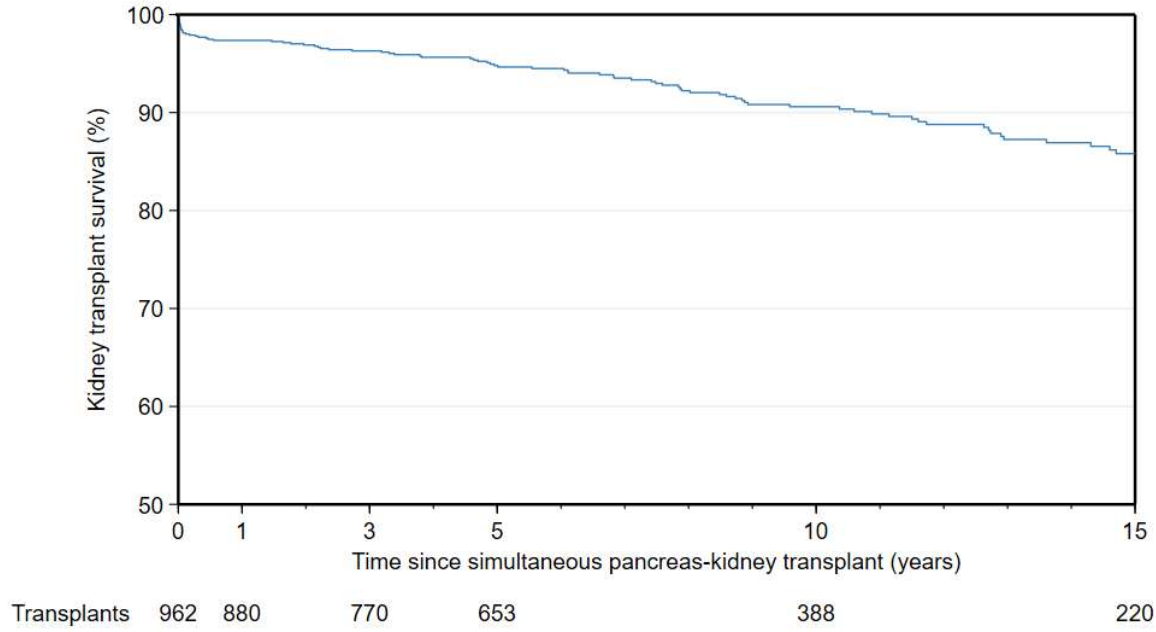
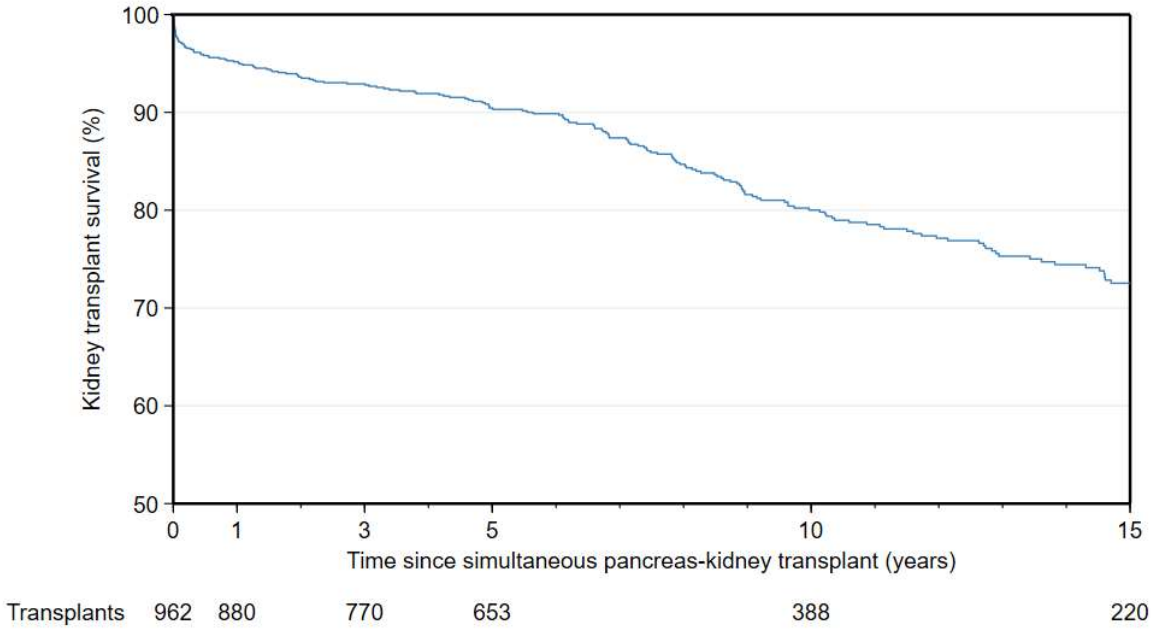


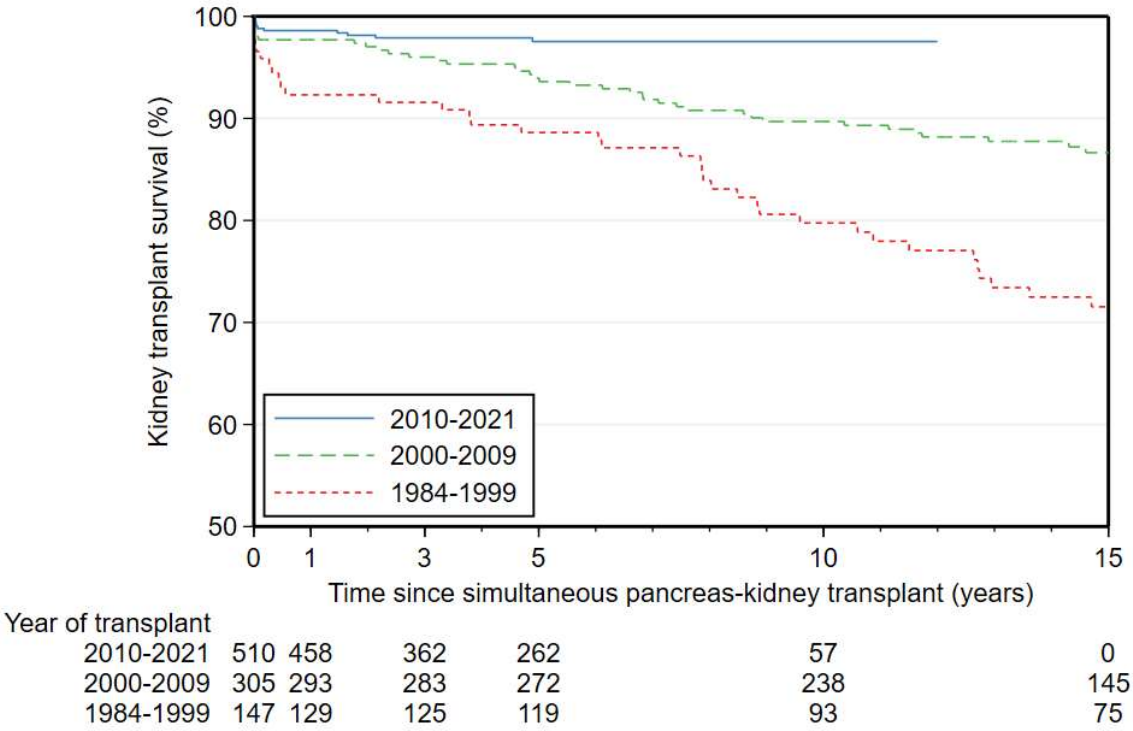
Figure 2.12 shows kidney survival including death with a functioning kidney. Over the same observation time there were 201 recipients who either died with kidney transplant function or experienced kidney transplant failure. Kidney transplant survival at 1, 5 and 10 years was 95.2%, 90.4% and 80.0% respectively.

Figure 2.12: Kidney transplant survival for people receiving SPK transplants (including death as a kidney transplant failure)



Kidney transplant survival improved over time, with longer survival for those transplanted in more recent years (p<0.001). For those transplanted before 2000, kidney transplant survival was 92.3% at 1 year and 88.6% at 5 years but was 98.6% at 1 year and 97.5% at 5 years for those transplanted in 2010 or later (Figure 2.13).

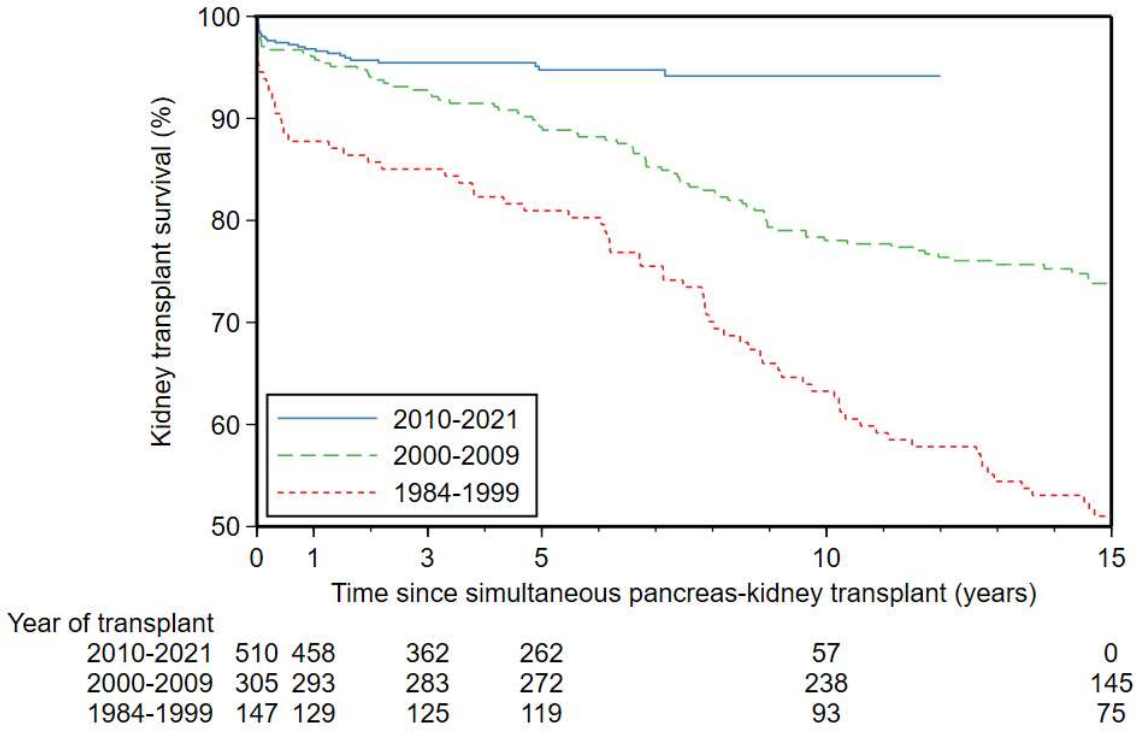
Figure 2.13: Kidney transplant survival for SPK recipients over time (censored at death)



Year of transplant						
2010-2021	510	458	362	262	57	0
2000-2009	305	293	283	272	238	145
1984-1999	147	129	125	119	93	75

The era effect was even stronger when considering kidney failure including death with kidney function (p<0.001). For those transplanted before 2000, survival was 87.8% at 1 year and 81.0% at 5 years but was 96.8% at 1 year and 94.7% at 5 years for those transplanted in 2010 or later (Figure 2.14).

Figure 2.14: Kidney transplant survival for SPK recipients over time (including death as a kidney transplant failure)



Year of transplant						
2010-2021	510	458	362	262	57	0
2000-2009	305	293	283	272	238	145
1984-1999	147	129	125	119	93	75

Pancreas transplant operative data

Characteristics of the pancreas transplant operations for 2021, previous years, and overall are shown in Table 2.9 below.

Table 2.9: Descriptive characteristics of pancreas transplant operations

	2021	1984-2020	Total
Pancreas transplant			
Total pancreas transplants	39	961	1000
Cold ischaemic time (hours)			
Patients (%)	24 (62)	776 (81)	800 (80)
Mean (SD)	9.0 (3.0)	11.0 (18.7)	11.0 (18.4)
Median (IQR)	9.3 (5.5)	10.5 (4.7)	10.4 (4.7)
Anastomosis time (minutes)			
Patients (%)	14 (36)	730 (76)	744 (74)
Mean (SD)	27.4 (11.4)	29.2 (8.2)	29.2 (8.3)
Median (IQR)	25.0 (7.0)	29.0 (10.0)	29.0 (10.0)
Exocrine drainage			
Enteric, n (%)	37 (95)	723 (75)	760 (76)
Bladder, n (%)	0 (0)	164 (17)	164 (16)
Not reported, n (%)	2 (5)	74 (8)	76 (8)
Kidney transplant			
Total SPK transplants	36	926	962
Cold ischaemic time (hours)			
Patients (%)	24 (62)	747 (78)	771 (77)
Mean (SD)	9.0 (3.0)	11.0 (19.0)	11.0 (18.7)
Median (IQR)	9.3 (5.5)	10.5 (4.7)	10.5 (4.7)
Anastomosis time (minutes)			
Patients (%)	14 (36)	701 (73)	715 (72)
Mean (SD)	27.4 (11.4)	29.3 (8.1)	29.2 (8.2)
Median (IQR)	25.0 (7.0)	29.0 (10.0)	29.0 (10.0)
Kidney donor arteries			
None, n (%)	0 (0)	2 (<1)	2 (<1)
One, n (%)	23 (64)	674 (73)	697 (72)
Two, n (%)	1 (3)	74 (8)	75 (8)
Three, n (%)	0 (0)	4 (<1)	4 (<1)
Not reported, n (%)	12 (33)	172 (19)	184 (19)

SPK, simultaneous pancreas-kidney

To investigate how much the total cold ischaemic time varied dependant on the donor state, and distance travelled to the transplanting centre, Table 2.10 displays a cross tabulation of donor state of origin with transplanting centre.

Table 2.10: Comparison of cold ischaemic time of pancreas transplants by donor state, for Australian pancreas transplants 2021

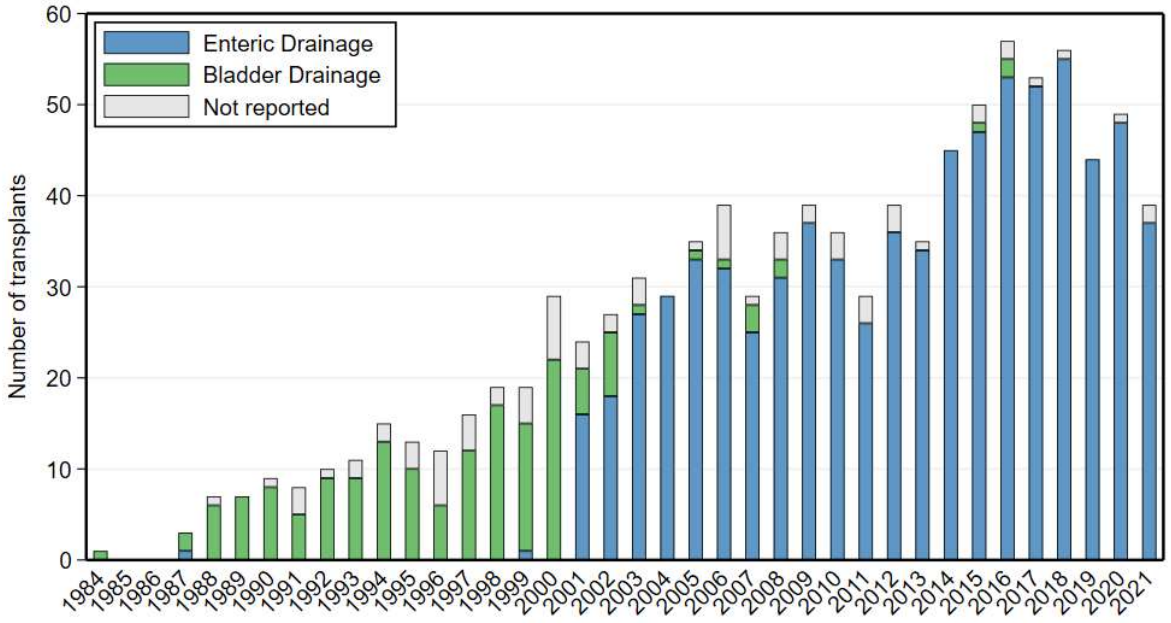
	Cold ischaemic time in hours					
Donor state	Westmead (NSW)		Monash (VIC)		Royal Adelaide (SA)	
	N	*Mean (SD)*	*N*	*Mean (SD)*	*N*	*Mean (SD)*
New South Wales	3	8.3 (3.5)	0	--	0	--
Victoria	1	12.0 (-)	3	6.8 (2.4)	0	--
Queensland	5	11.6 (2)	0	--	0	--
Western Australia	0	--	0	--	0	--
South Australia	2	11.0 (1.4)	0	--	4	5.0 (1.4)
Tasmania	0	--	0	--	0	--
Australian Capital Territory	1	7.0 (-)	0	--	0	--
Northern Territory	0	--	0	--	0	--
Total	12	10.3 (2.6)	3	6.8 (2.4)	4	5.0 (1.4)

Note: Data as incomplete for cold ischaemic times, hence data in this table may not be representative of all pancreas transplants. We are seeking to address data completeness.

Surgical technique

Exocrine drainage of the pancreas transplant has changed over time. Enteric drainage of the pancreas was first used in Australia and New Zealand during 2001. Figure 2.15 illustrates the number of transplants by pancreas duct management. Since 2001, most pancreas transplants have used enteric drainage of the pancreas duct.

Figure 2.15: Change in management of exocrine drainage of the pancreas over time



The site of donor vessel anastomoses onto the recipient vessels is dependent on many things, including but not limited to surgeon's preference, surgical ease of access, length and relative calibre of donor vessels. The sites of anastomosis for donor arteries and veins are displayed in Figure 2.16 and Figure 2.17 below.

Figure 2.16: Site of donor artery anastomosis onto recipient vessel

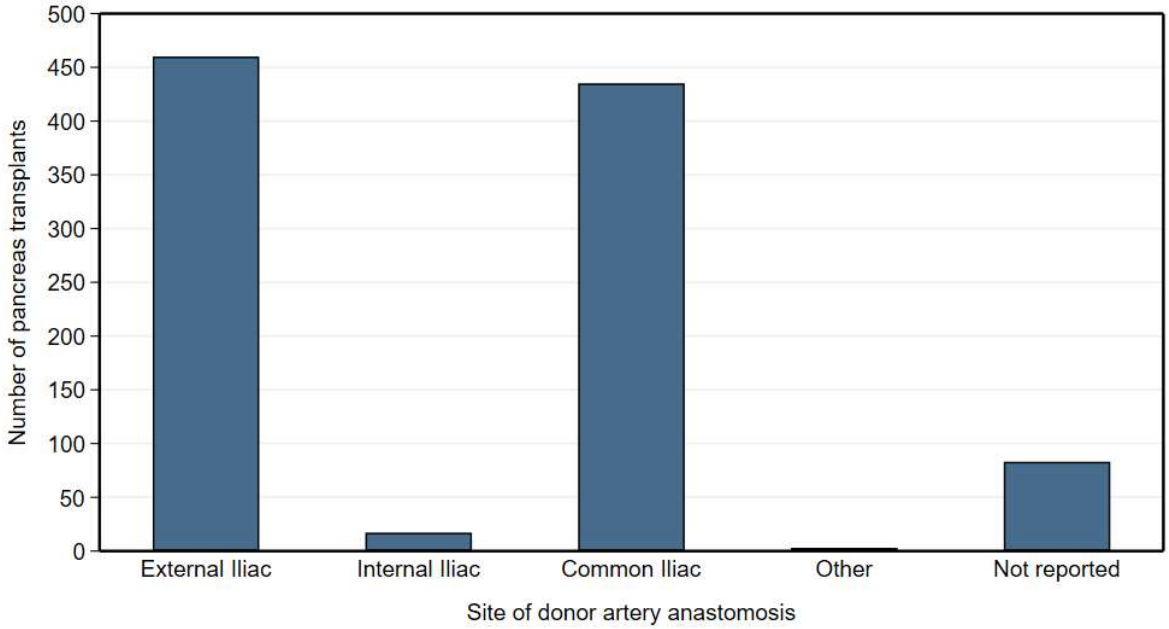
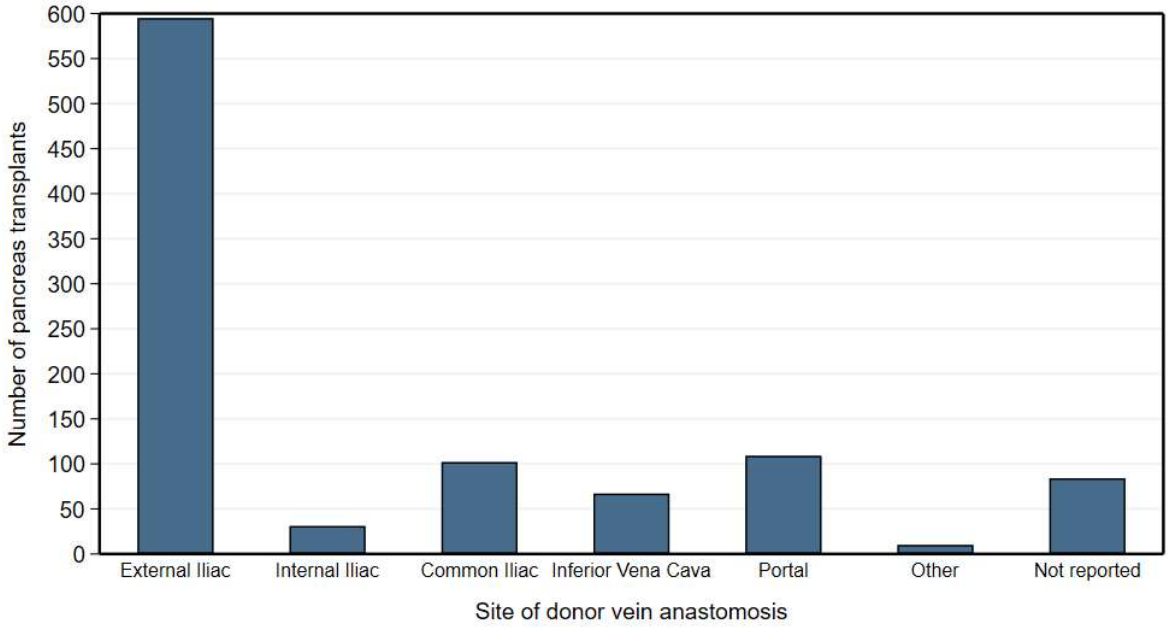


Figure 2.17: Site of donor vein anastomosis onto recipient vessel



The immunological matching of donor-recipient pairs is shown in Table 2.11, and the cytomegalovirus (CMV) and Epstein-Barr virus (EBV) matching is illustrated in Table 2.12.

Table 2.11: Immunological cross-matching of donor recipient pairs

	Donor-recipient pairs, n (column %)	
	Current	*Peak*
Crossmatch		
T-cell Positive	0 (0)	2 (<1)
B-cell Positive	4 (<1)	4 (<1)
T and B cell Negative	808 (81)	782 (78)
DTT Negative	3 (<1)	3 (<1)
Not reported	185 (19)	209 (21)
Panel Reactive Antibodies (%)		
0-49	141 (14)	137 (14)
50+	1 (<1)	9 (<1)
Not reported	858 (86)	854 (85)

Table 2.12: Infectious disease serology cross-tabulation of donor-recipient pairs

Recipient serology	**Donor serology, n (column %)**		
	Positive	*Negative*	*Not reported*
Cytomegalovirus (CMV)			
Positive	153 (25)	58 (17)	6 (11)
Negative	25 (4)	13 (4)	2 (4)
Not reported	426 (71)	271 (79)	46 (85)
Epstein-Barr virus (EBV)			
Positive	177 (30)	25 (28)	45 (14)
Negative	7 (1)	0 (0)	3 (<1)
Not reported	409 (69)	65 (72)	269 (85)

Chapter 3: Pancreas donors

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This chapter gives an overview of donors in 2021 and over time. Donor eligibility criteria guidelines are available in the TSANZ consensus statement http://www.tsanz.com.au/organallocationprotocols/ , but briefly require donors to be over 25kg, and up to the age of 45, without known diabetes mellitus or pancreatic trauma, or history of alcoholism or pancreatic trauma. Donation after cardiac death may be considered up to the age of 35. As these are guidelines, there may be occasions when there is minor deviation from these criteria.

Donor BMI is perceived as impacting recipient outcomes. Obese donors are more likely to have fatty pancreas, which results in more difficult surgery and increased postoperative complications, and suboptimal insulin secretion. Alcohol consumption is defined by a history of consumption of more than 40g/day. Table 3.1 describes pancreas donor characteristics in Australia and New Zealand to date.

Pancreas donor characteristics

Table 3.1: Demographics and characteristics of pancreas transplant donors

	Donors, n (column %)		
	2021	**1984-2020**	**Total**
Total (row %)	39	961	1000
Age category			
0-24	19 (49)	450 (47)	469 (47)
25-34	13 (33)	257 (27)	270 (27)
35-44	2 (5)	207 (22)	209 (21)
45+	2 (5)	33 (3)	35 (4)
Not reported	3 (8)	14 (1)	17 (2)
Sex			
Female	17 (44)	534 (56)	551 (55)
Male	19 (49)	416 (43)	435 (44)
Not reported	3 (8)	11 (1)	14 (1)
BMI (kg/m2)			
Underweight/Normal (<24.9)	22 (56)	605 (63)	627 (63)
Overweight (25-29.9)	7 (18)	300 (31)	307 (31)
Obese (30+)	1 (3)	38 (4)	39 (4)
Not reported	9 (23)	18 (2)	27 (3)
Donor type			
Brain death (DBD)	36 (92)	938 (98)	974 (97)
Circulatory death (DCD)	0 (0)	21 (2)	21 (2)
Not reported	3 (8)	2 (<1)	5 (<1)
Donor mode of death			
Cerebral hypoxia/ischaemia	24 (62)	135 (14)	159 (16)
Cerebral infarction	0 (0)	18 (2)	18 (2)
Intracranial haemorrhage	9 (23)	250 (26)	259 (26)
Non-neurological condition	0 (0)	195 (20)	195 (20)
Other neurological condition	1 (3)	20 (2)	21 (2)
Traumatic brain injury	3 (8)	329 (34)	332 (33)
Not reported	2 (5)	14 (1)	16 (2)
Alcohol consumption			
Never	28 (72)	882 (92)	910 (91)
Former	2 (5)	7 (<1)	9 (<1)
Current	9 (23)	72 (7)	81 (8)
Smoking history			
Never	25 (64)	684 (71)	709 (71)
Former	3 (8)	39 (4)	42 (4)
Current	11 (28)	238 (25)	249 (25)

Donor's blood group			
O	12 (31)	480 (50)	492 (49)
A	21 (54)	360 (37)	381 (38)
B	3 (8)	92 (10)	95 (10)
AB	1 (3)	24 (3)	25 (3)
Not reported	2 (5)	5 (<1)	7 (<1)
Kidney biopsy			
Performed	6 (15)	215 (22)	221 (22)
Not performed	22 (56)	713 (74)	735 (74)
Not reported	11 (28)	33 (3)	44 (4)
Cytomegalovirus (CMV)			
Positive	22 (56)	582 (61)	604 (60)
Negative	12 (31)	330 (34)	342 (34)
Not reported	5 (13)	49 (5)	54 (5)
Epstein-Barr virus (EBV)			
Positive	21 (54)	572 (60)	593 (59)
Negative	3 (8)	87 (9)	90 (9)
Not reported	15 (38)	302 (31)	317 (32)

DBD, donor after brain death; DCD, donor after circulatory death

The distribution of donor states of origin by transplanting unit for Australian pancreas donors is shown in Table 3.2.

Table 3.2: Distribution of state of residence of pancreas donors in Australia over time, by national pancreas transplant unit

State	Donors, n (column %)					
	2021	***2020***	***2019***	***2018***	***2017***	***2016***
Westmead (NSW)						
NSW	7 (33)	15 (48)	14 (52)	13 (50)	14 (47)	10 (34)
VIC	1 (5)	1 (3)	3 (33)	1 (4)	0 (0)	1 (3)
QLD	8 (38)	8 (26)	4 (15)	7 (27)	4 (13)	10 (34)
WA	2 (10)	5 (16)	4 (15)	2 (8)	7 (23)	5 (17)
SA	2 (10)	0 (0)	1 (4)	0 (0)	1 (3)	0 (0)
TAS	0 (0)	1 (3)	0 (0)	0 (0)	0 (0)	0 (0)
ACT	1 (5)	1 (3)	1 (4)	3 (12)	3 (10)	3 (10)
NT	0 (0)	0 (0)	0 (0)	0 (0)	1 (3)	0 (0)
Monash (VIC)						
NSW	1 (14)	0 (0)	0 (0)	1 (5)	0 (0)	0 (0)
VIC	5 (71)	7 (50)	9 (90)	17 (85)	16 (89)	16 (67)
QLD	0 (0)	1 (7)	0 (0)	0 (0)	1 (6)	0 (0)
WA	0 (0)	0 (0)	0 (0)	1 (5)	1 (6)	3 (13)
SA	1 (14)	1 (7)	1 (10)	1 (5)	0 (0)	2 (8)
TAS	0 (0)	4 (29)	0 (0)	0 (0)	0 (0)	1 (4)
ACT	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (4)
NT	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Not reported	0 (0)	1 (7)	0 (0)	0 (0)	0 (0)	1 (4)

State	Donors, n (column %)					
	2021	***2020***	***2019***	***2018***	***2017***	***2016***
Royal Adelaide (SA)						
NSW	0 (0)	0 (0)	0 (0)	0 (0)	0 -	0 -
VIC	0 (0)	0 (0)	0 (0)	0 (0)	0 -	0 -
QLD	0 (0)	0 (0)	0 (0)	0 (0)	0 -	0 -
WA	0 (0)	0 (0)	0 (0)	0 (0)	0 -	0 -
SA	4 (100)	2 (100)	2 (67)	3 (75)	0 -	0 -
TAS	0 (0)	0 (0)	0 (0)	0 (0)	0 -	0 -
ACT	0 (0)	0 (0)	0 (0)	0 (0)	0 -	0 -
NT	0 (0)	0 (0)	1 (33)	1 (25)	0 -	0 -

Donor and recipient state/territory

Table 3.3 shows the distribution of donor organs according to state of origin, cross-tabulated with the state of origin of the recipients who received those organs, for 2021, and from inception of the pancreas program. Note, these tables include Australian donors and recipients only.

Table 3.3: Number of pancreas transplants by donor and recipient state of residence in Australia for 2021 and all years

Recipient state	Donor state (number of transplants)									Total
	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Not reported	
2021 only										
NSW	4	2	4	1	0	0	0	0	0	11
VIC	1	3	0	0	1	0	0	0	2	7
QLD	3	1	4	1	2	0	0	0	0	11
WA	0	0	0	0	0	0	1	0	0	1
SA	0	0	0	0	4	0	0	0	0	4
TAS	0	0	0	0	0	0	0	0	0	0
ACT	0	0	0	0	0	0	0	0	0	0
NT	0	0	0	0	0	0	0	0	0	0
Total	8	6	8	2	7	0	1	0	2	34
All years (1984-2021)										
NSW	165	14	34	22	22	5	18	0	0	280
VIC	23	201	3	5	8	19	2	0	0	268
QLD	82	10	37	18	25	0	12	1	0	185
WA	21	5	13	12	5	1	3	0	0	60
SA	17	20	3	5	20	1	5	2	0	73
TAS	16	12	1	0	1	2	0	0	0	32
ACT	16	1	3	1	2	0	0	0	0	23
NT	1	0	0	2	1	0	0	0	0	4
Total	341	263	94	65	84	28	40	3	7	925

Appendices

Previous ANZIPTR Reports, other abstracts and publication

We are not aware of any publications or abstracts using ANZIPTR data within the past year (2021-2022).