Chapter 10

End Stage Kidney Disease in Aboriginal and Torres Strait Islander Australians

Reporting the incidence, prevalence and survival of Aboriginal and Torres Strait Islander Australians receiving kidney replacement therapy.

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Introduction

In this chapter, the rates and practice patterns for kidney failure for people identifying as Aboriginal and Torres Strait Islander living in Australia are reported. We acknowledge the distinctiveness of many nations of Aboriginal and Torres Strait Islander peoples, and respectfully refer to them as Indigenous Australians within this report. Self-identified ethnicity is reported by renal units on behalf of patients.

The collection of ethnicity data in ANZDATA now allows for a patient to nominate more than one ethnicity group, however, consultation regarding reporting of ethnicity data is currently ongoing and reporting guidelines have not been finalised at the time of publication. As a result, ethnicity data throughout this report includes only the first ethnicity category entered for each patient. Future publications will aim to report more accurately on patients identifying as more than one ethnicity.

Denominator population statistics were sourced from the Australian Bureau of Statistics (2020)[1] and are stratified by ethnicity. For example, the incidence of kidney replacement therapy (KRT) for Indigenous Australians includes the Indigenous Australian population as the denominator. In Australia, Indigenous and non-Indigenous populations possess different age structures: Indigenous populations tend to be younger and demonstrate onset of long-term conditions at ages 10-20 years younger than non-Indigenous communities.

Summary and Highlights

In 2020, there were 314 Indigenous Australians who commenced kidney replacement therapy (KRT) nationwide, the fewest individuals since 2015. This gives an overall incidence of 363 per million population (pmp), the lowest since 2010 (when incidence was 317 pmp). This drop was predominantly seen in NT, NSW/ACT and QLD. Diabetes was the cause of kidney failure in 69%, followed by glomerulonephritis in 9%. The majority (87%) received haemodialysis as the primary treatment modality, with 63% using a dialysis catheter at first dialysis. There were no pre-emptive kidney transplants occurring in 2020.

A total of 2471 Indigenous Australians were recorded as receiving KRT during the annual survey, 1952 (79%) haemodialysis, 146 (6%) peritoneal dialysis and 373 (15%) kidney transplant. Overall, this means 26% received care close to home, reported as home or community house haemodialysis (5%), peritoneal dialysis (6%) and transplant (15%), led by the NT with a significant increase in PD prevalence.

Despite COVID-19 contributing to lower rates of transplantation, 48 Indigenous Australians received a kidney transplant in 2020, giving a survey prevalence of 373 (431 pmp). This is a notable 40% increase over 2016, likely reflecting increased number of transplants and better outcomes, linked to the National Indigenous Kidney Transplant Taskforce. This increased incidence is predominantly seen in NT and WA during 2020 with median time to primary transplant also decreased in several states. Indigenous transplant recipient 5-year survival has increased to 86%, approaching the 90% survival seen in non-Indigenous recipients, with rates of graft failure in the first 3 years now similar.

Suggested Citation

ANZDATA Registry. 44th Report, Chapter 10: Kidney Failure in Aboriginal and Torres Strait Islander Australians. Australia and New Zealand Dialysis and Transplant Registry, Adelaide, Australia. 2021. Available at: http://www.anzdata.org.au

New Patients

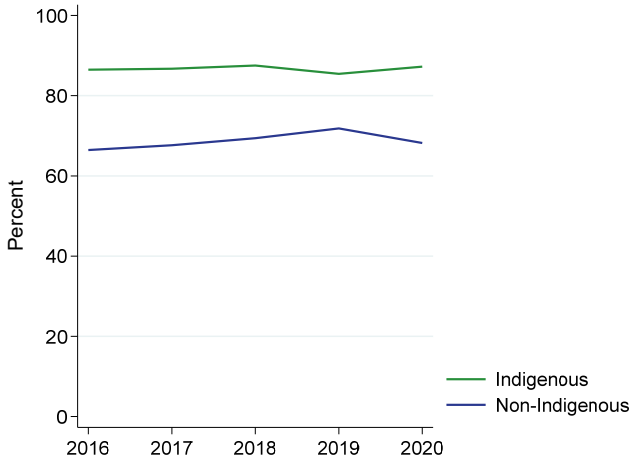
A total of 305 Aboriginal and 9 Torres Strait Islander people (n=314 total of Indigenous Australians) commenced kidney replacement therapy (KRT) for kidney failure in Australia during 2020 (table 10.1). The majority (87%) were treated with haemodialysis as their initial KRT modality (figure 10.1). Zero pre-emptive kidney transplants were accessed by Indigenous Australians in 2020.

Haemodialysis incidence was approximately 4-fold higher for Indigenous Australians (316 per million population, pmp) than for non-Indigenous Australians (80 pmp). In 2020, only 13% of Indigenous Australians accessed peritoneal dialysis as first treatment compared with almost one-quarter of non-Indigenous Australians.

Table 10.1 New Patients (pmp) Australia 2016-2020

Year	Modality	Indigenous	Non-Indigenous	Total
2016	HD	275 (344)	1661 (71)	**1936 (80)**
	PD	42 (53)	753 (32)	**795 (33)**
	Graft	1 (1)	85 (4)	**86 (4)**
2017	HD	314 (386)	1831 (77)	**2145 (87)**
	PD	48 (59)	754 (32)	**802 (33)**
	Graft	0 (0)	121 (5)	**121 (5)**
2018	HD	287 (345)	1925 (80)	**2212 (89)**
	PD	39 (47)	747 (31)	**786 (31)**
	Graft	2 (2)	102 (4)	**104 (4)**
2019	HD	329 (388)	2030 (83)	**2359 (93)**
	PD	54 (64)	692 (28)	**746 (29)**
	Graft	2 (2)	104 (4)	**106 (4)**
2020	HD	274 (316)	1974 (80)	**2248 (88)**
	PD	40 (46)	836 (34)	**876 (34)**
	Graft	0 (0)	84 (3)	**84 (3)**

Figure 10.1 - Percentage of New Patients Commencing on Haemodialysis – Australia



Primary Kidney Disease

The primary kidney diseases of new Australian patients over 2016-2020 are shown in table 10.2. The proportion of Indigenous patients with diabetic nephropathy was substantially higher than for non-Indigenous patients.

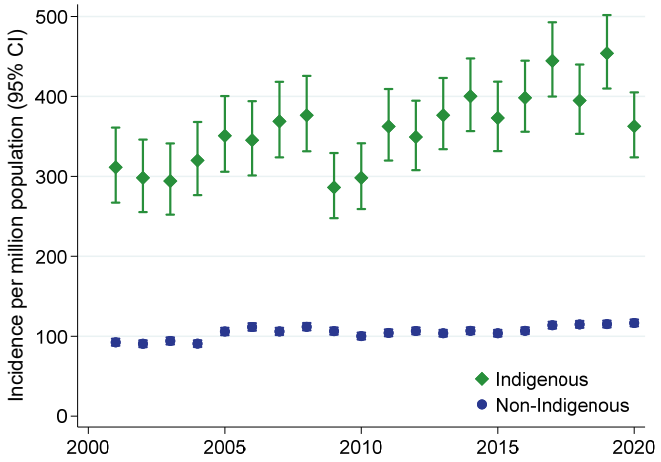
Table 10.2 Primary Kidney Disease of New Patients Australia 2016-2020

Primary Kidney Disease	Indigenous	Non-Indigenous
Diabetic Kidney Disease	1176 (69%)	4747 (35%)
Glomerulonephritis	154 (9%)	2552 (19%)
Hypertension	108 (6%)	1851 (14%)
Polycystic Disease	8 (<1%)	937 (7%)
Reflux Nephropathy	21 (1%)	276 (2%)
Other	118 (7%)	2304 (17%)
Uncertain	80 (5%)	803 (6%)
Not reported	42 (2%)	229 (2%)
Total	**1707**	**13699**

Incidence Rates

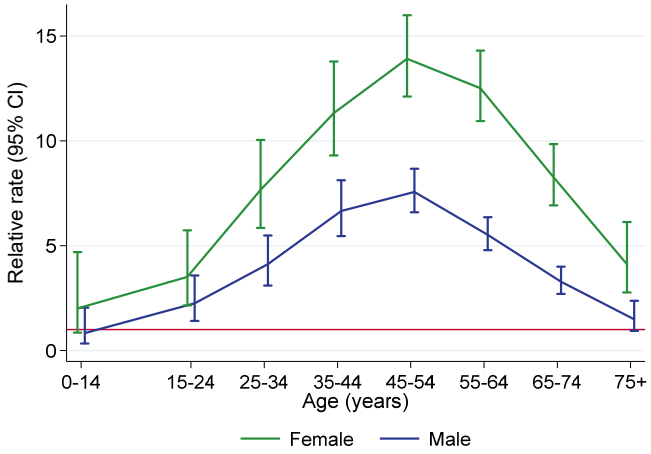
Overall, the incidence rates (per million of population) of kidney failure for Indigenous patients were markedly and persistently higher than those for non-Indigenous patients (figure 10.2).

Figure 10.2 - Unadjusted Incident KRT Rate – Australia



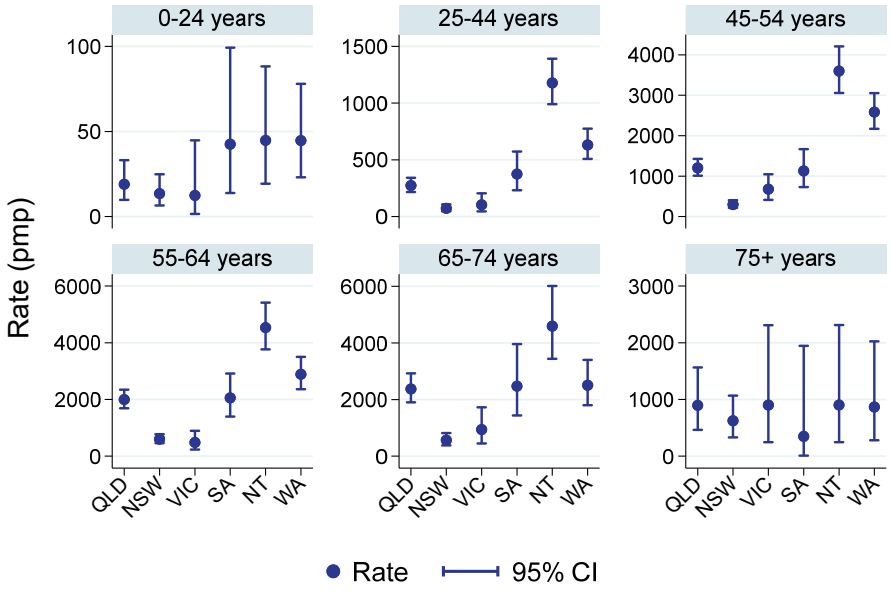
Indigenous Australians experience higher rates of kidney failure at all age groups over 15 years of age. This disparity is greater among Indigenous women and shows a particular pattern with age with the highest relative rates in the 35-64 year age group (figure 10.3).

Figure 10.3 - Relative Incidence Rate of Treated Kidney Failure for Indigenous Patients by Gender (Comparison to Non-Indigenous Australians) - 2016-2020



There is also considerable variation in the incidence of kidney replacement therapy for Indigenous Australians across Australian States and Territories (figure 10.4; note that the Y axis scales vary). Data are shown for a five-year period given the small numbers in some locations.

Figure 10.4 - Age-specific Incidence Rates of Treated Kidney Failure - Among Indigenous Australians, by State and Age at KRT start 2016-2020

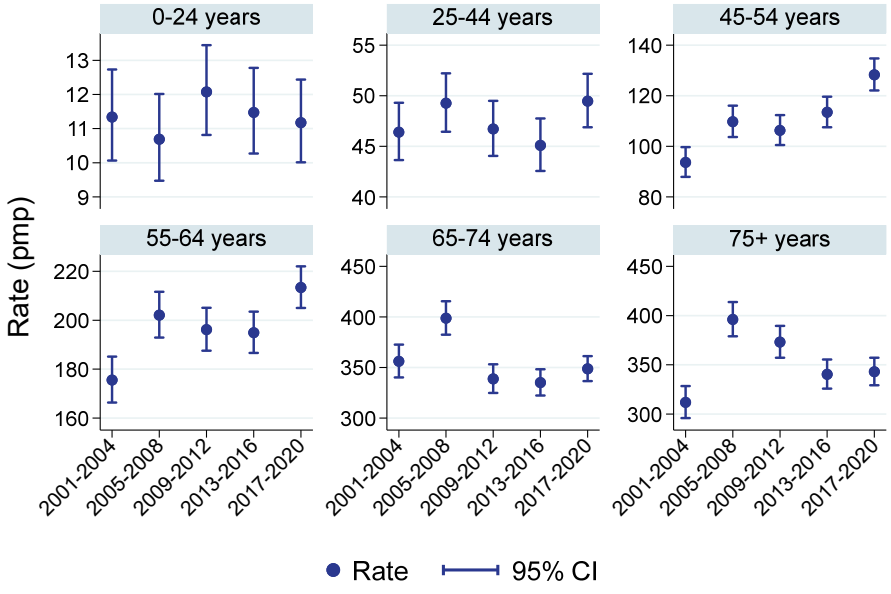


Note the Y axis scales vary between panels

There are a number of factors which contribute to incident numbers of KRT (among both Indigenous and non-Indigenous people). These may include: underlying rates of diabetes or other medical conditions, rates of disease progression, referral patterns, access to treatment and patient treatment decisions.

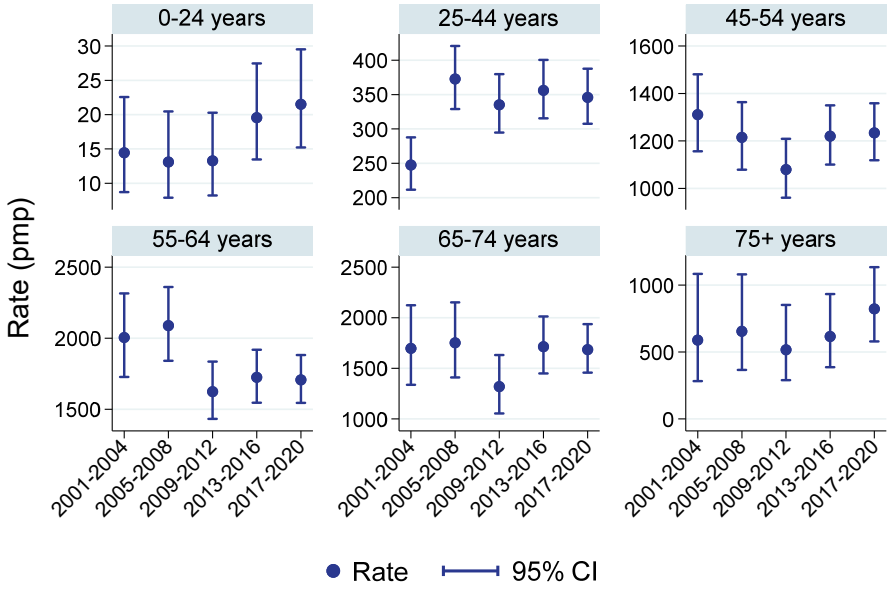
The trends in age-specific rates for the non-Indigenous population are shown in figure 10.5.

Figure 10.5.1 - Age-specific Incidence Rates of Treated Kidney Failure - Non-Indigenous, Australia



Note the Y axis scales vary between panels

Figure 10.5.2 - Age-specific Incidence Rates of Treated Kidney Failure - Indigenous, Australia



Note the Y axis scales vary between panels

Prevalent Patients

The number of Indigenous Australians with treated kidney failure at the end of 2020 increased from 2406 persons in 2019 to 2471 persons (table 10.3).

There were marked differences in treatment modalities for Indigenous Australians (figures 10.6 and 10.7). Most Indigenous Australians were treated with facility-based haemodialysis (74%), with very few accessing home haemodialysis (6%), long-term peritoneal dialysis (6%), or kidney transplantation (15%). The proportion of Indigenous Australians with a kidney transplant as long-term treatment for kidney failure was 15% during 2020 compared with half (51%) of non-Indigenous Australians. Only 6% of Indigenous Australians accessed home-based haemodialysis compared with 10% of non-Indigenous Australians.

Table 10.3 Prevalent Patients by Ethnicity and Treatment Modality Australia 2016-2020

Year	Modality	Indigenous	Non-Indigenous
2016	Haemodialysis (HD)	1639 (80%)	8575 (40%)
	% HD at home*	6%	12%
	Peritoneal Dialysis	137 (7%)	2275 (11%)
	Transplant	266 (13%)	10681 (50%)
2017	Haemodialysis (HD)	1758 (81%)	8763 (39%)
	% HD at home*	6%	11%
	Peritoneal Dialysis	146 (7%)	2248 (10%)
	Transplant	279 (13%)	11215 (50%)
2018	Haemodialysis (HD)	1814 (80%)	9098 (39%)
	% HD at home*	5%	10%
	Peritoneal Dialysis	152 (7%)	2257 (10%)
	Transplant	309 (14%)	11721 (51%)
2019	Haemodialysis (HD)	1905 (79%)	9542 (40%)
	% HD at home*	5%	10%
	Peritoneal Dialysis	159 (7%)	2210 (9%)
	Transplant	342 (14%)	12235 (51%)
2020	Haemodialysis (HD)	1952 (79%)	9923 (40%)
	% HD at home*	6%	10%
	Peritoneal Dialysis	146 (6%)	2366 (10%)
	Transplant	373 (15%)	12579 (51%)

*Includes Community House Haemodialysis

Figure 10.6.1 - Prevalent Patients by Modality - Australia - Indigenous

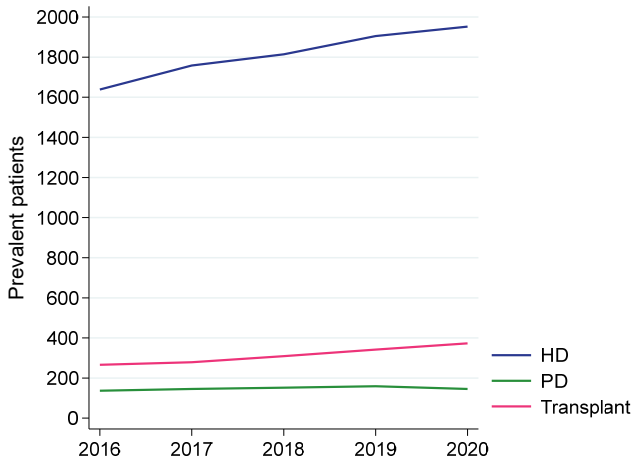


Figure 10.6.2 - Prevalent Patients by Modality - Australia - Non-Indigenous

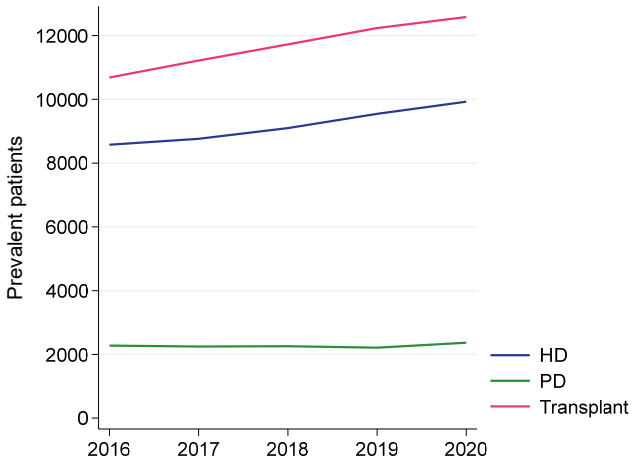
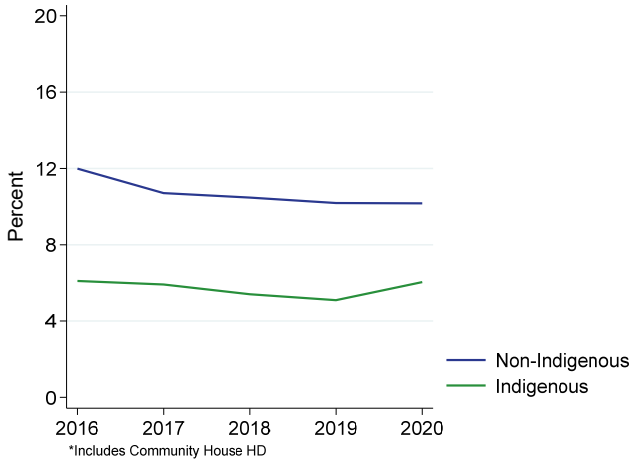


Figure 10.7 - Prevalent Haemodialysis at Home (% of all HD) by Ethnicity – Australia*



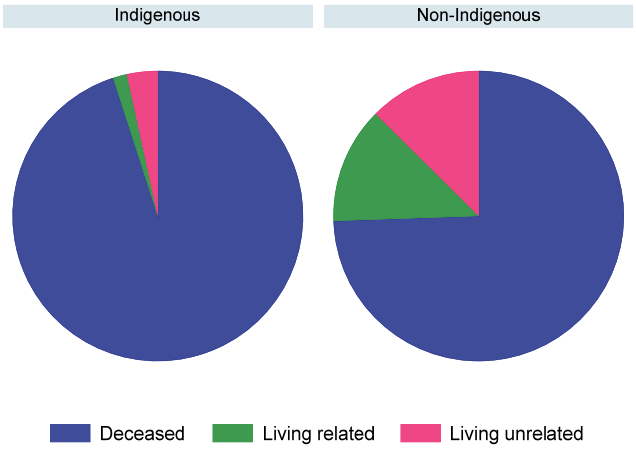
Transplantation

In Australia, the proportion of Indigenous patients with kidney failure who receive a kidney transplant is very low relative to the number receiving dialysis. However, due to the high number of Indigenous people experiencing kidney failure, the number of transplants per million population is higher for Indigenous patients than non-Indigenous patients (table 10.4). Information on donor type is shown in figure 10.8 and trends are shown in figure 10.9. There are substantially lower rates of living donation for Indigenous Australians.

Table 10.4 Number of Transplant Recipients (pmp) by Ethnicity Australia 2016-2020

Year	Donor Type	Indigenous	Non-Indigenous
2016	**Deceased Donor**	32 (40)	781 (33)
	Living Donor	2 (3)	240 (10)
	Total	**34 (43)**	**1021 (44)**
2017	Deceased Donor	33 (41)	796 (33)
	Living Donor	2 (2)	260 (11)
	Total	**35 (43)**	**1056 (44)**
2018	Deceased Donor	49 (59)	835 (35)
	Living Donor	3 (4)	220 (9)
	Total	**52 (63)**	**1055 (44)**
2019	Deceased Donor	54 (64)	791 (32)
	Living Donor	2 (2)	229 (9)
	Total	**56 (66)**	**1020 (42)**
2020	Deceased Donor	48 (55)	645 (26)
	Living Donor	0 (0)	178 (7)
	Total	**48 (55)**	**823 (33)**

Figure 10.8 - Donor Type by Ethnicity - Australia 2011-2020



Trends in the number of kidney transplant for Indigenous and non-indigenous patients are shown in figure 10.9 (note differences in y-axes). Overall transplant numbers decreased on both populations in 2020, likely in part due to the impacts of the global COVID-19 pandemic.

Figure 10.9 - Donor Type by Ethnicity and Year – Australia

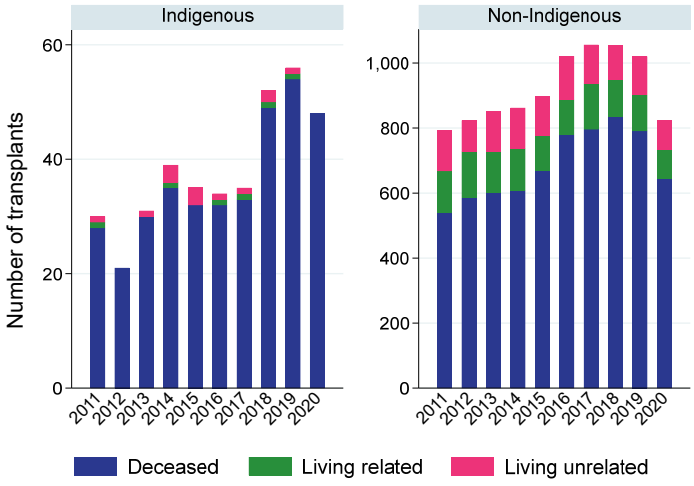
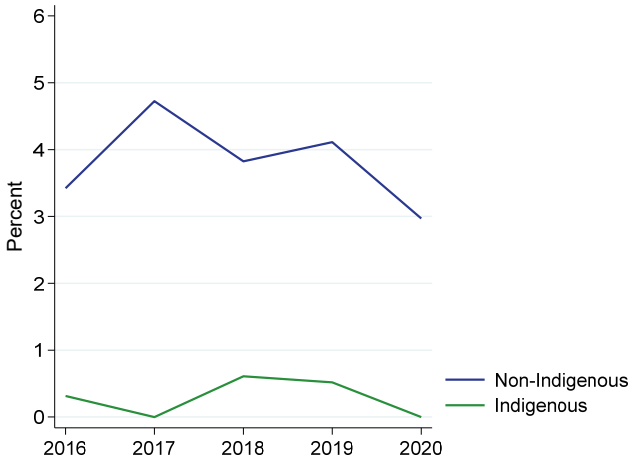


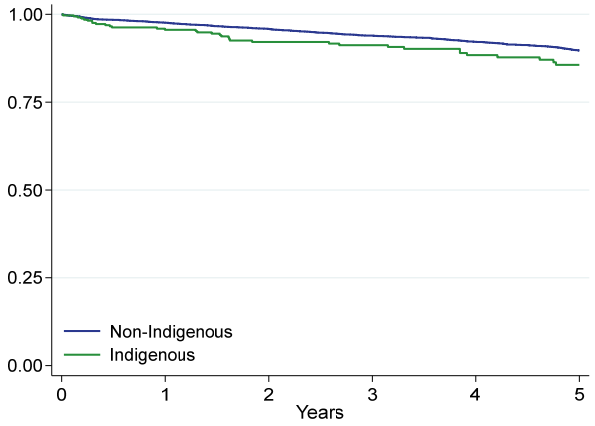
Figure 10.10 - Percentage of Patients Starting KRT with Pre-emptive Kidney Transplant – Australia



Transplant Survival

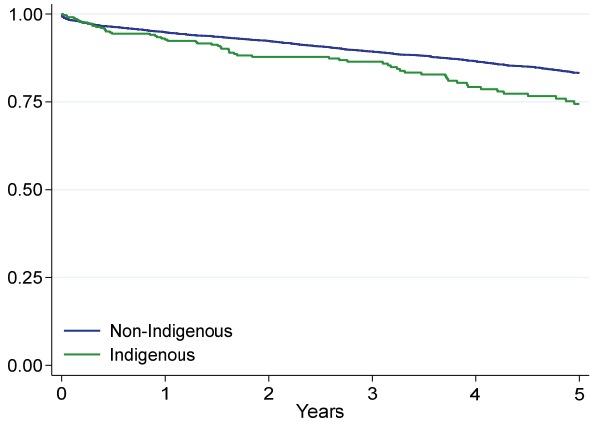
Patient survival after kidney transplantation from a deceased donor (DD) for Indigenous and non-Indigenous recipients is shown in figure 10.11. 86% of Indigenous Australians and 90% of non-Indigenous persons were alive 5 years after kidney transplantation from a deceased donor.

Figure 10.11 - Patient Survival, Recipients of Primary DD Transplants - Australia 2011-2020



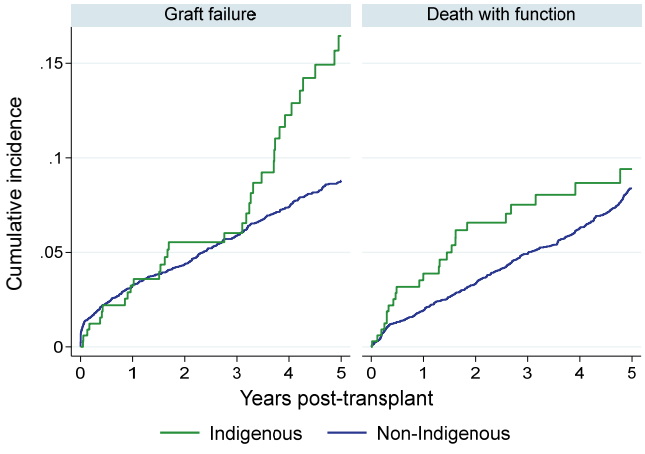
Kidney transplants may be lost, either through the transplant failing or the patient dying with a functioning kidney. Transplant kidney function at 5 years post-transplant was recorded in 74% of Indigenous recipients compared with 83% of non-Indigenous persons (figure 10.12).

Figure 10.12 - Graft Survival, Recipients of Primary DD Transplants - Australia 2011-2020



Cumulative incidence curves (utilising competing risk techniques to account for the effects of both components of graft failure) are shown for Indigenous transplant outcomes in figure 10.13.

Figure 10.13 - Transplant Outcomes - Primary Deceased Donor Kidney-only Transplants Australia 2011-2020



Dialysis

The distribution of dialysis modality is shown graphically in figure 10.14. For Indigenous Australians, the predominant modality is satellite haemodialysis. Access to home-based dialysis care including home and community house haemodialysis and peritoneal dialysis is proportionally much lower. Indigenous Australians utilise automated peritoneal dialysis (APD) at much lower rates than non-Indigenous Australians.

Figure 10.14 - Dialysis Modality End 2020 - Australia, by Ethnicity

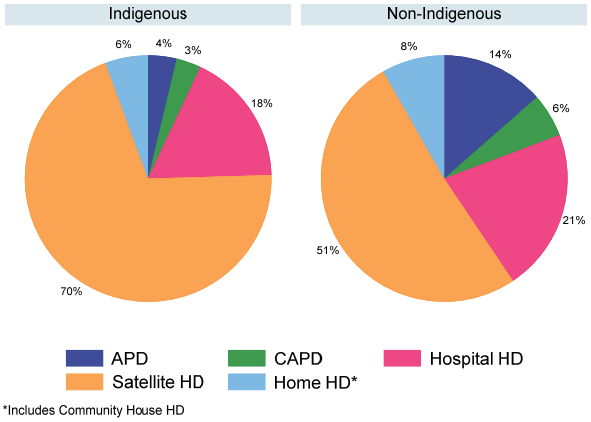
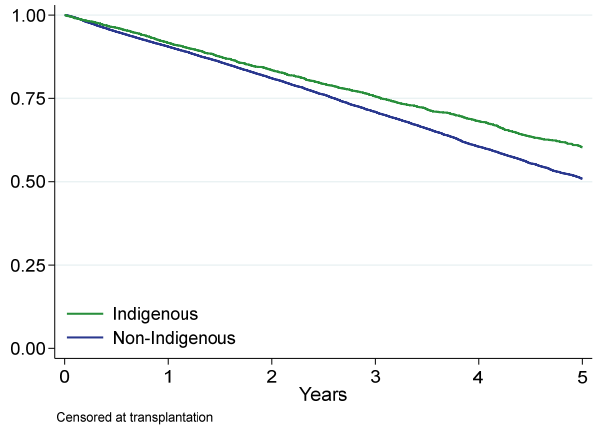


Figure 10.15 shows patient survival after starting dialysis. At 5 years after starting dialysis 60% of the Indigenous Australians were alive 5 years compared with 51% of non-Indigenous patients. These are unadjusted figures and differences between populations including age distribution and access to competing treatments (transplantation) may have impacted mortality estimates.

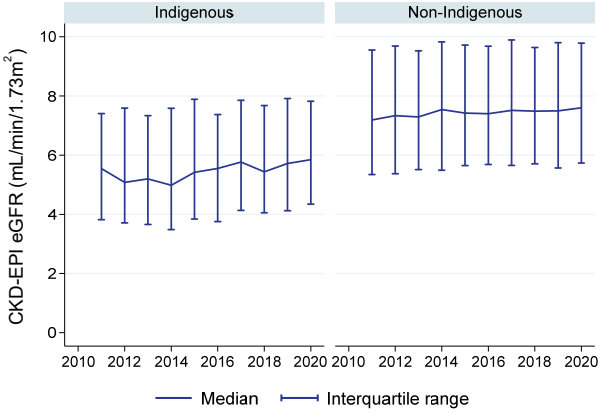
Figure 10.15 - Incident Dialysis Patient Survival 2011-2020 – Australia



Timing of Dialysis Initiation

The level of kidney function at which dialysis is commenced based on estimated Glomerular Filtration Rate (eGFR) for Indigenous and non-indigenous patients is shown in figure 10.16.

Figure 10.16 - eGFR at Dialysis Initiation – Australia



Incidence and Prevalence by State/Territory

The next few pages show a variety of figures that summarise various key rates (incidence, prevalence, transplant rates) for Indigenous Australians by state/territory. In large part they show information from previous pages, in a series of differing formats.

State/Territory Incidence

There is marked variation in the incidence of kidney replacement therapy between States and Territories in Australia. NT had the highest national incidence for Indigenous Australians treated for kidney failure at 1143 per million of population in 2020; the next highest was in WA (741 pmp) (figure 10.17).

Kidney transplantation is offered in major metropolitan centres in NSW, QLD, WA, VIC and SA. There is a marked State/Territory variation in the incidence of kidney transplantation in Australia and between years (figure 10.18).

Figure 10.17 - Incidence of New Indigenous Australian Patients

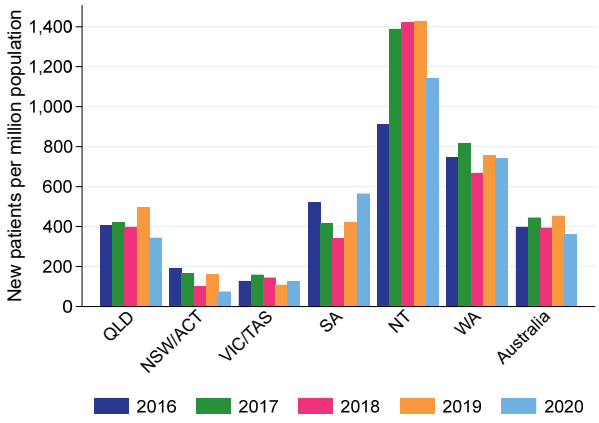
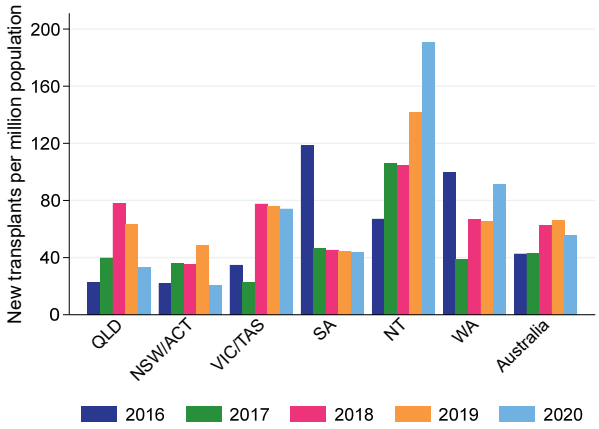
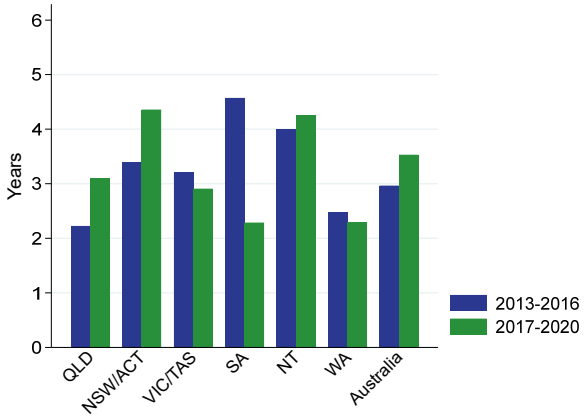


Figure 10.18 - Incidence of New Transplants Indigenous Australian Patients - By referring state



The time from commencement of dialysis to receipt of first transplant is shown in figure 10.19, with varying patterns between different states and territories.

Figure 10.19 - Median Time to Primary Transplant Indigenous Australian Patients - By referring state/territory, Transplants during 2013-2016 vs 2017-2020



Dialysis by Resident State

Treatment patterns for Indigenous Australians vary by state. The highest rates for haemodialysis are in the Northern Territory, Western Australia and South Australia. The highest rates for peritoneal dialysis have historically been in Queensland and Western Australia. However, the Northern Territory showed sustained increase in prevalent patients utilising peritoneal dialysis over 2018-2020, and in 2020, recorded the highest national prevalence rate for PD.

Figure 10.20 - Prevalent Indigenous Australian Haemodialysis Patients

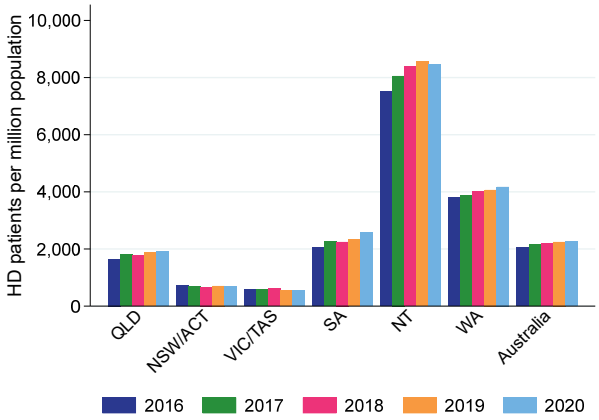
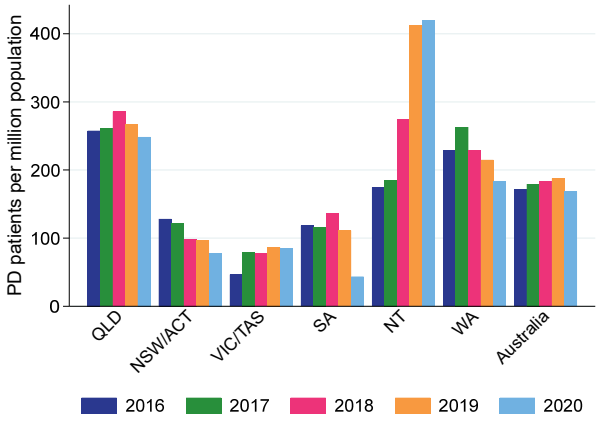


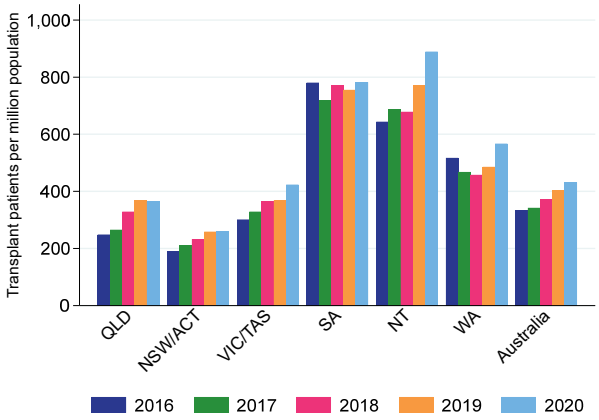
Figure 10.21 - Prevalent Indigenous Australian Peritoneal Dialysis Patients



Transplantation by Referring State

Rates of prevalent transplants vary substantially between states/territories with the highest prevalence rates in the Northern Territory, South Australia and Western Australia. These rates are per population, not per dialysis patient, and they reflect both background rates of kidney disease and transplant practices. Transplant rates per dialysis patient are presented in Chapter 7 of this Report. Transplantation prevalence rates appear to be increasing overall and, in most jurisdictions, apart from SA (figure 10.22).

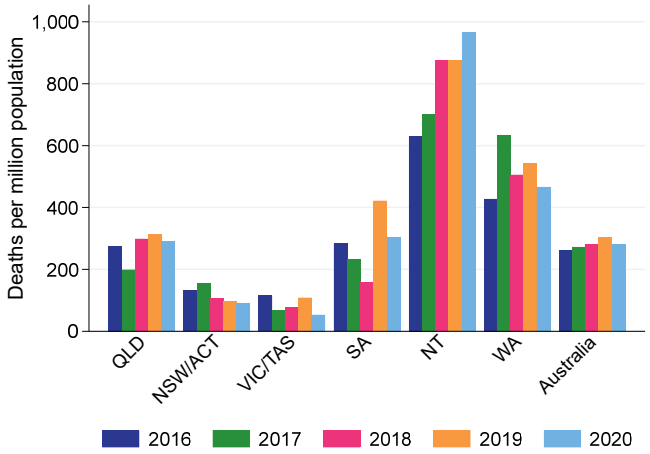
Figure 10.22 - Prevalent Indigenous Australian Transplant Patients



Deaths by Resident State

State based mortality rates for Indigenous Australians on kidney replacement therapy are shown in figure 10.23. The differences in death rates between states are likely to reflect a combination of the differences in kidney failure prevalence, practice patterns and patient factors.

Figure 10.23 - Deaths of Indigenous Australian KRT patients



Geographical Distribution

Figure 10.24 shows the number of incident Indigenous Australian kidney replacement therapy patients by postcode. The percentage of prevalent kidney replacement therapy patients identifying as Indigenous Australian is summarised in figure 10.25 (by state) and the number of prevalent Indigenous Australian dialysis patients in figure 10.26 by statistical area level 3 (SA3, obtained by mapping postcodes to SA3). Note that some postcodes are distributed over more than one SA3. Mapping data are based on the 2016 Australian Statistical Geography Standard courtesy of the Australian Bureau of Statistics (2016)[2].

Figure 10.24 - Incident Indigenous Australian Kidney Replacement Therapy Patients 2016-2020 - By Postcode

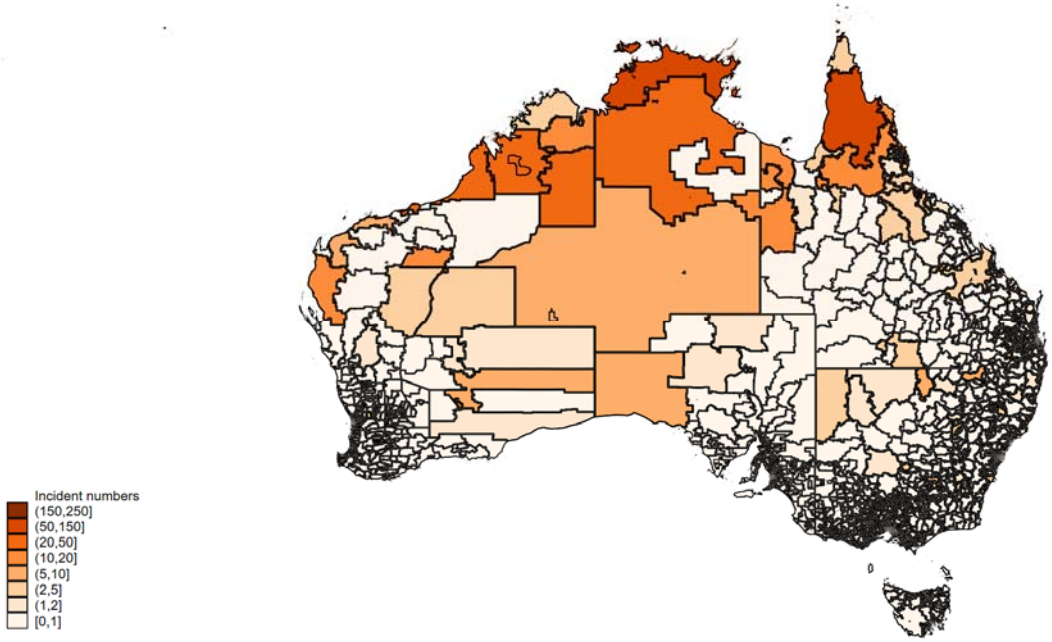


Figure 10.25 - Percentage of Prevalent Kidney Replacement Therapy Patients Identifying as Indigenous Australian - 2020 By State

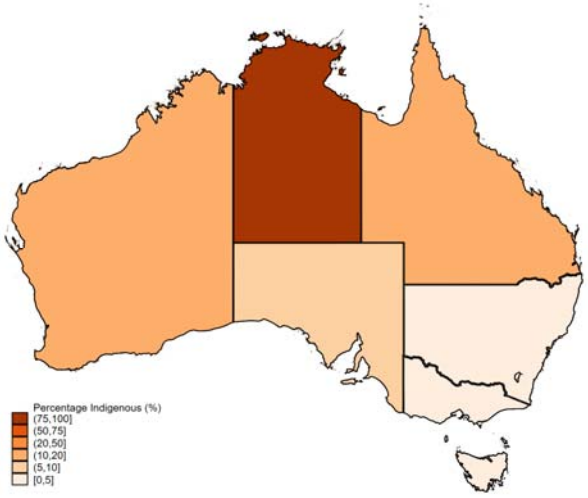
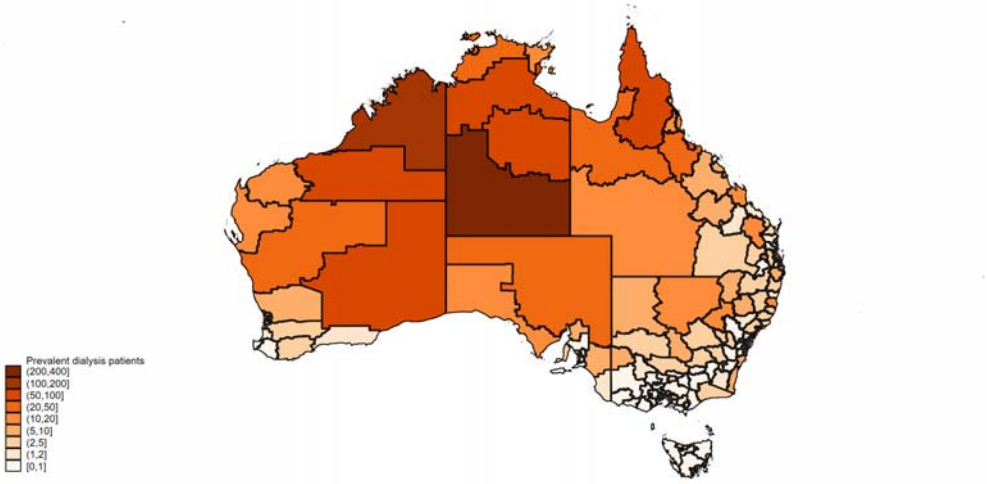


Figure 10.26 - Prevalent Indigenous Australian Dialysis Patients 2020 - By Statistical Area Level 3



Late Referral

The percentage of Indigenous Australians who experienced late referral to a nephrologist prior to commencing kidney replacement therapy (KRT) (<3 months between referral and review by a nephrologist and KRT start) is shown in table 10.5.

Table 10.5 Percentage of Late Referral by Ethnicity Australia 2016-2020

Year	Indigenous	Non-Indigenous
2016	15%	18%
2017	17%	18%
2018	18%	16%
2019	15%	18%
2020	21%	16%

Vascular Access

Incident Vascular Access

Incident vascular access data are presented in table 10.6, and prevalent data in table 10.7.

Table 10.6 Incident Vascular Access Australia 2016-2020

Year	Vascular access	Indigenous	Non-Indigenous
2016	Arteriovenous Fistula	108 (39%)	695 (42%)
	Arteriovenous Graft	1 (<1%)	20 (1%)
	Central Venous Catheter	164 (60%)	918 (55%)
	Not reported	2 (1%)	28 (2%)
2017	Arteriovenous Fistula	114 (36%)	770 (42%)
	Arteriovenous Graft	9 (3%)	22 (1%)
	Central Venous Catheter	190 (61%)	1017 (56%)
	Not reported	1 (<1%)	22 (1%)
2018	Arteriovenous Fistula	110 (38%)	787 (41%)
	Arteriovenous Graft	3 (1%)	21 (1%)
	Central Venous Catheter	174 (61%)	1101 (57%)
	Not reported	0 (0%)	16 (1%)
2019	Arteriovenous Fistula	136 (41%)	817 (40%)
	Arteriovenous Graft	2 (1%)	23 (1%)
	Central Venous Catheter	190 (58%)	1184 (58%)
	Not reported	1 (<1%)	6 (<1%)
2020	Arteriovenous Fistula	100 (36%)	834 (42%)
	Arteriovenous Graft	1 (<1%)	24 (1%)
	Central Venous Catheter	173 (63%)	1113 (56%)
	Not reported	0 (0%)	3 (<1%)

Prevalent Vascular Access

Table 10.7 Prevalent Vascular Access Australia 2016-2020

Year	Vascular access	Indigenous	Non-Indigenous
2016	Arteriovenous Fistula	1255 (77%)	6347 (74%)
	Arteriovenous Graft	51 (3%)	460 (5%)
	Central Venous Catheter	168 (10%)	1167 (14%)
	Not reported	165 (10%)	601 (7%)
2017	Arteriovenous Fistula	1385 (79%)	6690 (76%)
	Arteriovenous Graft	51 (3%)	436 (5%)
	Central Venous Catheter	211 (12%)	1351 (15%)
	Not reported	111 (6%)	286 (3%)
2018	Arteriovenous Fistula	1428 (79%)	6936 (76%)
	Arteriovenous Graft	51 (3%)	421 (5%)
	Central Venous Catheter	241 (13%)	1511 (17%)
	Not reported	94 (5%)	230 (3%)
2019	Arteriovenous Fistula	1541 (81%)	7076 (74%)
	Arteriovenous Graft	53 (3%)	419 (4%)
	Central Venous Catheter	236 (12%)	1663 (17%)
	Not reported	75 (4%)	384 (4%)
2020	Arteriovenous Fistula	1566 (80%)	7464 (75%)
	Arteriovenous Graft	57 (3%)	450 (5%)
	Central Venous Catheter	222 (11%)	1765 (18%)
	Not reported	107 (5%)	244 (2%)

Patient Flow

Table 10.8 shows the overall flow of Indigenous Australian patients, by state. For new and pre-emptive transplants, numbers are shown by referring state. The differences in death rates between states are likely to reflect a combination of the differences in kidney failure prevalence, practice patterns and patient factors.

Table 10.8 Patient Flow (pmp) Australian Indigenous Patients 2016-2020

Year	Event	QLD	NSW/ACT	VIC/TAS	SA	NT	WA	Australia
	New patients	90 (407)	52 (190)	11 (127)	22 (521)	68 (912)	75 (746)	**318 (398)**
	New transplants	5 (23)	6 (22)	3 (35)	5 (118)	5 (67)	10 (99)	**34 (43)**
	Pre-emptive transplants	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (10)	**1 (1)**
2016	**Prevalent dialysis**	421 (1903)	231 (846)	54 (626)	91 (2153)	574 (7700)	405 (4029)	**1776 (2225)**
	Prevalent transplants	55 (249)	52 (190)	26 (301)	33 (781)	48 (644)	52 (517)	**266 (333)**
	Total prevalence	476 (2151)	283 (1036)	80 (927)	124 (2934)	622 (8344)	457 (4547)	**2042 (2558)**
	Deaths	61 (276)	36 (132)	10 (116)	12 (284)	47 (630)	43 (428)	**209 (262)**
	New patients	95 (420)	46 (165)	14 (159)	18 (417)	105 (1389)	84 (818)	**362 (445)**
	New transplants	9 (40)	10 (36)	2 (23)	2 (46)	8 (106)	4 (39)	**35 (43)**
	Pre-emptive transplants	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	**0 (0)**
2017	**Prevalent dialysis**	469 (2075)	227 (815)	59 (669)	102 (2364)	623 (8243)	424 (4131)	**1904 (2338)**
	Prevalent transplants	60 (265)	59 (212)	29 (329)	31 (718)	52 (688)	48 (468)	**279 (343)**
	Total prevalence	529 (2340)	286 (1027)	88 (998)	133 (3082)	675 (8931)	472 (4599)	**2183 (2681)**
	Deaths	45 (199)	43 (154)	6 (68)	10 (232)	53 (701)	65 (633)	**222 (273)**
	New patients	92 (398)	29 (102)	13 (144)	15 (340)	109 (1422)	70 (668)	**328 (395)**
	New transplants	18 (78)	10 (35)	7 (78)	2 (45)	8 (104)	7 (67)	**52 (63)**
	Pre-emptive transplants	1 (4)	0 (0)	1 (11)	0 (0)	0 (0)	0 (0)	**2 (2)**
2018	**Prevalent dialysis**	474 (2052)	217 (764)	63 (699)	105 (2382)	664 (8665)	443 (4227)	**1966 (2366)**
	Prevalent transplants	76 (329)	66 (232)	33 (366)	34 (771)	52 (679)	48 (458)	**309 (372)**
	Total prevalence	550 (2381)	283 (997)	96 (1065)	139 (3154)	716 (9344)	491 (4685)	**2275 (2738)**
	Deaths	69 (299)	30 (106)	7 (78)	7 (159)	67 (874)	53 (506)	**233 (280)**
	New patients	117 (495)	47 (162)	10 (108)	19 (422)	111 (1429)	81 (757)	**385 (454)**
	New transplants	15 (64)	14 (48)	7 (76)	2 (44)	11 (142)	7 (65)	**56 (66)**
	Pre-emptive transplants	0 (0)	2 (7)	0 (0)	0 (0)	0 (0)	0 (0)	**2 (2)**
2019	**Prevalent dialysis**	507 (2147)	232 (801)	59 (640)	110 (2443)	698 (8987)	458 (4279)	**2064 (2434)**
	Prevalent transplants	87 (368)	75 (259)	34 (369)	34 (755)	60 (772)	52 (486)	**342 (403)**
	Total prevalence	594 (2515)	307 (1060)	93 (1008)	144 (3198)	758 (9759)	510 (4765)	**2406 (2837)**
	Deaths	74 (313)	28 (97)	10 (108)	19 (422)	68 (875)	58 (542)	**257 (303)**
	New patients	83 (344)	22 (74)	12 (127)	26 (565)	90 (1143)	81 (741)	**314 (363)**
	New transplants	8 (33)	6 (20)	7 (74)	2 (43)	15 (191)	10 (91)	**48 (55)**
	Pre-emptive transplants	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	**0 (0)**
2020	**Prevalent dialysis**	522 (2161)	222 (751)	59 (625)	121 (2630)	698 (8867)	476 (4354)	**2098 (2423)**
	Prevalent transplants	88 (364)	77 (261)	40 (424)	36 (782)	70 (889)	62 (567)	**373 (431)**
	Total prevalence	610 (2526)	299 (1012)	99 (1049)	157 (3413)	768 (9756)	538 (4922)	**2471 (2854)**
	Deaths	70 (290)	27 (91)	5 (53)	14 (304)	76 (965)	51 (467)	**243 (281)**

Cause of Death

The causes of death in 2020 are shown in figure 10.27 and table 10.9, categorised by ethnicity and modality at time of death.

Figure 10.27 - Cause of Death by Modality and Ethnicity, Australia - Deaths Occurring During 2020

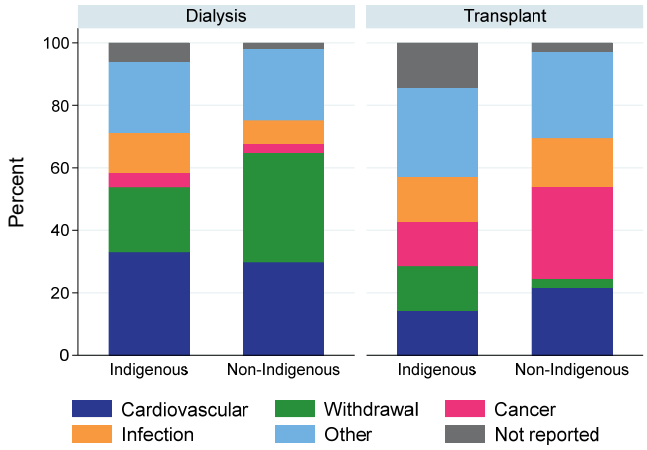


Table 10.9 Cause of Death by Modality and Ethnicity, Australia 2020

Modality	Cause of death	Indigenous	Non-Indigenous
Dialysis	**Cardiovascular**	78 (33%)	502 (30%)
	Withdrawal	49 (21%)	592 (35%)
	Cancer	11 (5%)	46 (3%)
	Infection	30 (13%)	127 (8%)
	Other	54 (23%)	386 (23%)
	Not reported	14 (6%)	31 (2%)
	Total	**236**	**1684**
Transplant	**Cardiovascular**	1 (14%)	53 (22%)
	Withdrawal	1 (14%)	7 (3%)
	Cancer	1 (14%)	71 (29%)
	Infection	1 (14%)	38 (16%)
	Other	2 (29%)	67 (28%)
	Not reported	1 (14%)	7 (3%)
	Total	**7**	**243**

References

[1] *Australian Bureau of Statistics, 2020, Australian Demographic Statistics, Jun 2020, time series spreadsheets, cat. no. 3101.0, viewed 4 Jan 2021, http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3101.0Jun%202020?OpenDocument*

[2] *Australian Bureau of Statistics, 2016, Australian Statistical Geography Standard (ASGS): Volume 1 - Main Structure and Greater Capital City Statistical Areas, July 2016, cat. no. 1270.0.55.001, viewed 22 May 2018, http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/1270.0.55.001July%202016?OpenDocument*