



CHAPTER 5

Peritoneal Dialysis

Reporting the incidence, prevalence and survival of peritoneal dialysis patients in Australia and New Zealand; summarising dialysis fluids, laboratory results, rates of transfer to haemodialysis and peritonitis

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SUMMARY AND HIGHLIGHTS

During the 2024 survey period, 1187 people in Australia and 323 people in New Zealand commenced maintenance peritoneal dialysis (PD). Compared to 2023, the number of incident and prevalent patients on PD and the proportion of all dialysis patients on PD remained relatively stable in Australia and New Zealand. The number of patients who experienced death while on PD decreased in both Australia (181 vs. 210 in 2023) and New Zealand (65 vs. 80 in 2023). After an increase in the number of patients on PD who received a kidney transplant in 2023 in Australia, the number of transplants decreased again in 2024 (303 vs. 276 in 2023). The number of patients who received a kidney transplant remained unchanged in New Zealand (55 in 2024 vs. 56 in 2023).

The most common age groups for patients who commenced PD in 2024 were between 65-74 years in Australia (26%) and between 55-64 years in New Zealand (26%). PD remained the more common dialysis modality for the paediatric group (75% in Australia and 80% in New Zealand). For patients commenced on PD, diabetic kidney disease remained the most common cause of primary kidney disease (30% in Australia and 41% in New Zealand), but the numbers and proportions of patients with diabetic kidney disease as the primary kidney disease decreased in both countries compared to previous years.

The proportion of prevalent PD patients receiving automated PD (APD) remains greater than those receiving continuous ambulatory PD (CAPD) (73% vs. 27% in Australia and 66% vs. 34% in New Zealand). The number of prevalent patients on hybrid dialysis (concurrent treatment with PD and haemodialysis) remained low in Australia (n=35) and New Zealand (n=1). In Australia, the proportion of patients who started PD within 14 days after PD catheter insertion increased from 16% in 2023 to 17% in 2024. However, the opposite trend was observed in New Zealand where the proportion of patients who started PD within 14 days after PD catheter insertion decreased from 16% in 2023 to 10% in 2024.

There was marked centre variation in the use of icodextrin and low GDP solutions. In Australia, the proportion of patients using icodextrin decreased from 53% in 2023 to 47% in 2024, especially in patients receiving CAPD (58% in 2023 vs. 46% in 2024). In contrast, the proportion of icodextrin use increased in New Zealand from 69% in 2023 to 79% in 2024. Compared to 2023, the proportions of patients receiving low GDP solutions remained stable in Australia (22%) and New Zealand (6%).

When considering all people who started peritoneal dialysis within a year of commencing kidney replacement therapy, the survival curves remained unchanged in Australia and New Zealand. Infection was the most common reason for transfer to haemodialysis. Inadequate dialysis was the most common reason for transfer to haemodialysis in Australia in 2023 and was overtaken by infection in 2024 by a small margin.

ANZDATA only reports on Australian episodes of peritoneal dialysis peritonitis, as New Zealand has a separate registry that is not currently linked to ANZDATA. In Australia, the peritonitis rate has been relatively stable (0.27 episodes per patient-year in 2024) and is meeting the ISPD international target of 0.4 episodes per patient-year. However, there was significant variation between treating units (0.0 to 0.8 peritonitis episodes per patient-year). PD peritonitis rates remained high but improved in the Northern Territory (0.75 episodes per patient-year in 2023 and 0.38 episodes per patient year in 2024). Despite the ISPD recommendation of <15% of PD peritonitis being culture negative, the proportions of culture negative PD peritonitis remained high in ACT (44%). The culture negative proportion worsened in SA (6% in 2023 and 43% in 2024). In contrast, the culture negative proportion improved significantly in WA (39% in 2023 and 22% in 2024).

SUGGESTED CITATION

J Chen, C Davies, S Bateman, P Clayton, D Forcey, F Kholmurodova, D Lee, K Marshall, H McCarthy, S McDonald, W Mulley, K Polkinghorne, K Richards, M Roberts, B Solomon, G Irish. 48th Report, Chapter 5: Peritoneal dialysis. Australia and New Zealand Dialysis and Transplant Registry, Adelaide, Australia. 2025. Available at: <http://www.anzdata.org.au>

INCIDENCE, PREVALENCE AND USAGE

Table 5.1 shows the percentage of all dialysis patients undergoing peritoneal dialysis (PD) in each state and country over 2020-2024. Table 5.2 shows the same data as a percentage of home dialysis (including community house haemodialysis) patients.

The duration of time spent on PD by prevalent patients is shown in Figure 5.1.

Table 5.1

Percentage of all Dialysis Patients on Peritoneal Dialysis[^]

State	2020	2021	2022	2023	2024
Queensland	16%	16%	15%	16%	15%
New South Wales	23%	23%	22%	22%	21%
Australian Capital Territory	15%	12%	12%	12%	12%
Victoria	17%	18%	18%	17%	17%
Tasmania	17%	19%	20%	19%	22%
South Australia	14%	15%	15%	16%	16%
Northern Territory	7%	7%	5%	5%	5%
Western Australia	15%	14%	15%	15%	15%
Australia	17%	18%	17%	17%	17%
New Zealand	29%	26%	25%	23%	23%

[^]Includes Hybrid Dialysis

Table 5.2

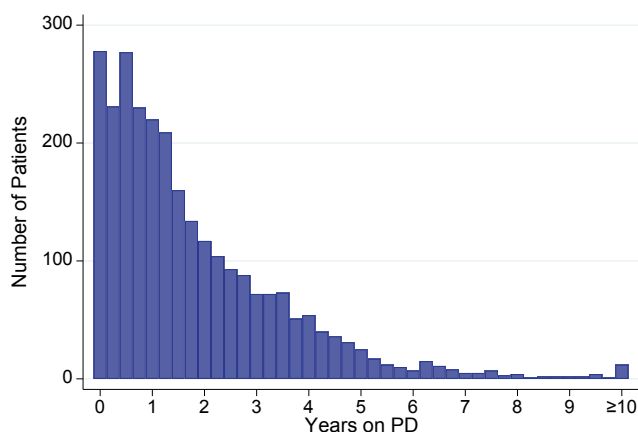
Percentage of all Home Dialysis* Patients on Peritoneal Dialysis[^]

State	2020	2021	2022	2023	2024
Queensland	66%	67%	67%	70%	71%
New South Wales	69%	70%	69%	70%	72%
Australian Capital Territory	63%	56%	63%	66%	70%
Victoria	72%	73%	73%	74%	74%
Tasmania	81%	83%	85%	88%	88%
South Australia	83%	83%	83%	84%	83%
Northern Territory	48%	58%	62%	53%	53%
Western Australia	69%	70%	70%	71%	72%
Australia	69%	70%	70%	72%	72%
New Zealand	69%	67%	66%	66%	66%

*Includes Community House Haemodialysis [^]Includes Hybrid Dialysis

Figure 5.1.1

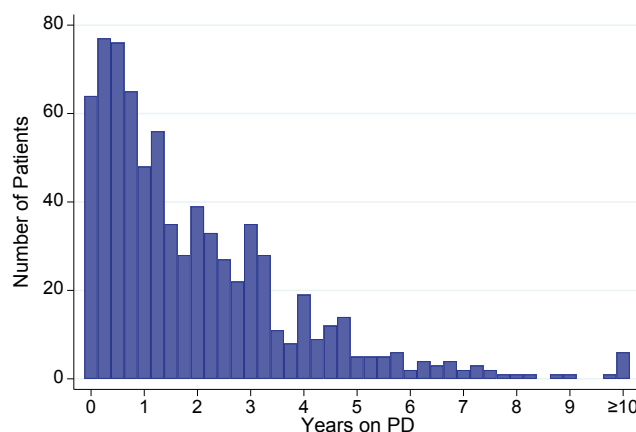
Time on Peritoneal Dialysis[^] - Prevalent PD Patients Australia 31 Dec 2024



[^]Includes Hybrid Dialysis

Figure 5.1.2

Time on Peritoneal Dialysis[^] - Prevalent PD Patients New Zealand 31 Dec 2024



[^]Includes Hybrid Dialysis

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Table 5.3 shows the overall incidence, cessation and annual prevalence of PD in Australia and New Zealand over the last 5 years. Note that dialysis modality changes lasting less than 30 days are not included. Figure 5.2 presents some of these data graphically.

Table 5.3
Incidence, Cessation and Annual Prevalence of Peritoneal Dialysis[^] Patients 2020-2024

Country		2020	2021	2022	2023	2024
Australia	All patients who commenced PD					
	First dialysis treatment or returning after kidney recovery	921	918	844	913	903
	Transfer from HD (no prior PD)	258	223	232	273	199
	Transfer from HD (prior PD)	35	32	35	46	48
	Failed Transplant (no prior PD)	16	16	14	8	14
	Failed Transplant (prior PD)	27	12	17	19	23
	Total	1257	1201	1142	1259	1187
	All patients who ceased PD					
	Received kidney transplant	233	209	243	303	276
	Transfer to HD	542	558	552	576	604
	Kidney recovery	13	24	16	22	13
	Withdrawal from dialysis	85	94	116	97	96
	Deaths	217	183	240	210	181
	Total	1090	1068	1167	1208	1170
	Total patients on PD at 31 December	2553	2687	2656	2700	2715
New Zealand	All patients who commenced PD					
	First dialysis treatment or returning after kidney recovery	271	249	239	221	219
	Transfer from HD (no prior PD)	79	81	72	80	76
	Transfer from HD (prior PD)	25	11	19	9	18
	Failed Transplant (no prior PD)	4	2	3	2	6
	Failed Transplant (prior PD)	6	6	3	2	4
	Total	385	349	336	314	323
	All patients who ceased PD					
	Received kidney transplant	54	69	69	56	55
	Transfer to HD	151	185	152	148	147
	Kidney recovery	5	8	5	5	5
	Withdrawal from dialysis	35	27	46	42	37
	Deaths	113	90	107	80	65
	Total	358	379	379	331	309
	Total patients on PD at 31 December	849	812	768	749	765

[^]Includes Hybrid Dialysis

Figure 5.2.1
Incidence, Cessation and Annual Prevalence of Peritoneal Dialysis[^] Patients - Australia 2020-2024

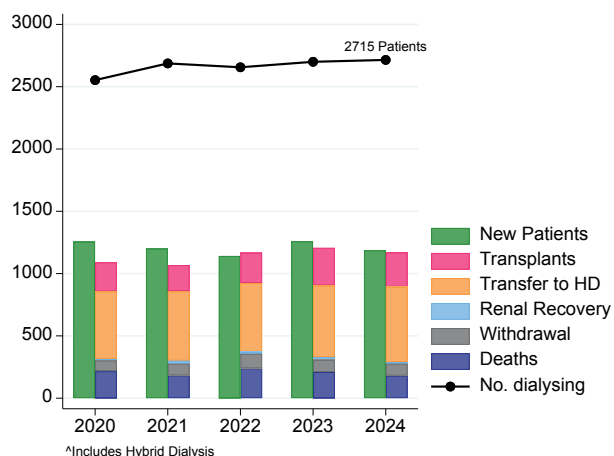
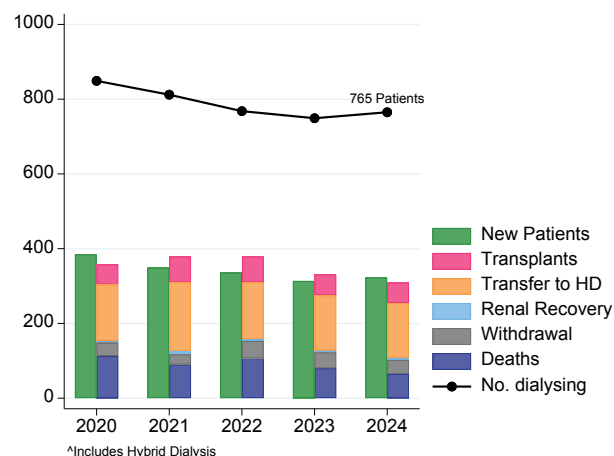


Figure 5.2.2
Incidence, Cessation and Annual Prevalence of Peritoneal Dialysis[^] Patients - New Zealand 2020-2024



The age distributions of incident and prevalent PD patients are shown in Figures 5.3 and 5.4 respectively.

Figure 5.3.1
Age (%) of Incident Peritoneal Dialysis Patients - Australia 2024

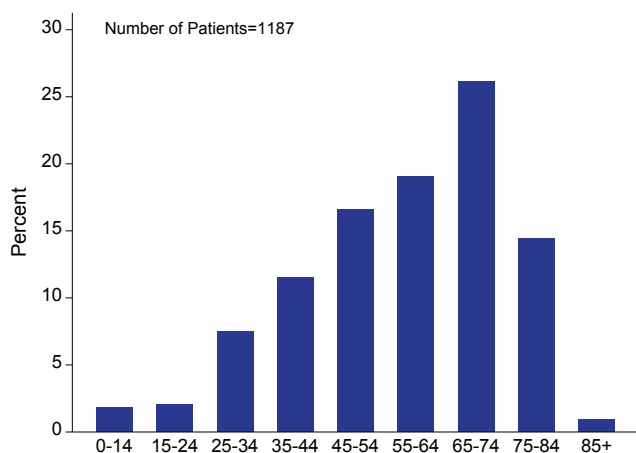


Figure 5.3.2
Age (%) of Incident Peritoneal Dialysis Patients - New Zealand 2024

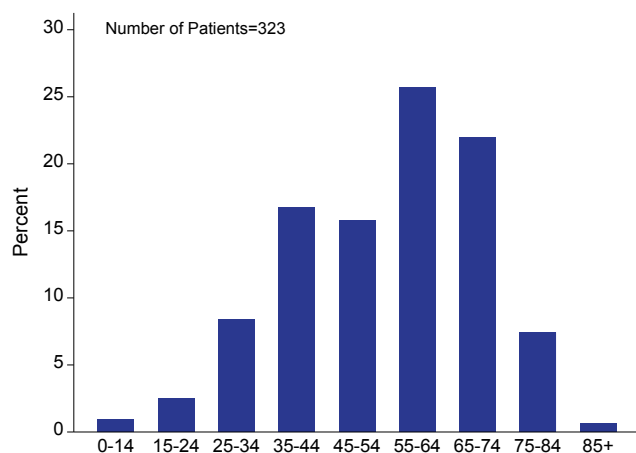


Figure 5.4.1
Age (%) of Prevalent Peritoneal Dialysis[^] Patients - Australia 2024

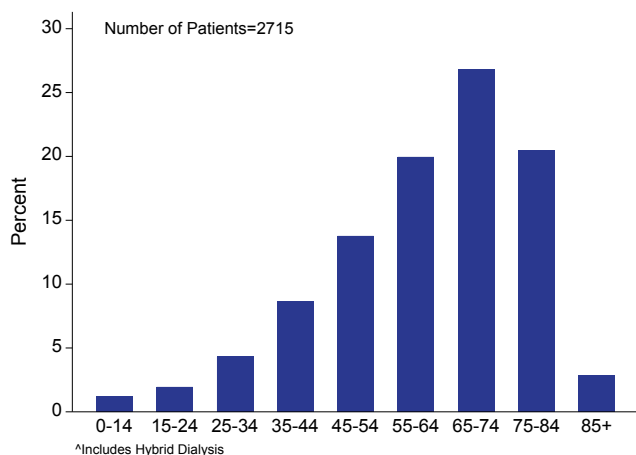
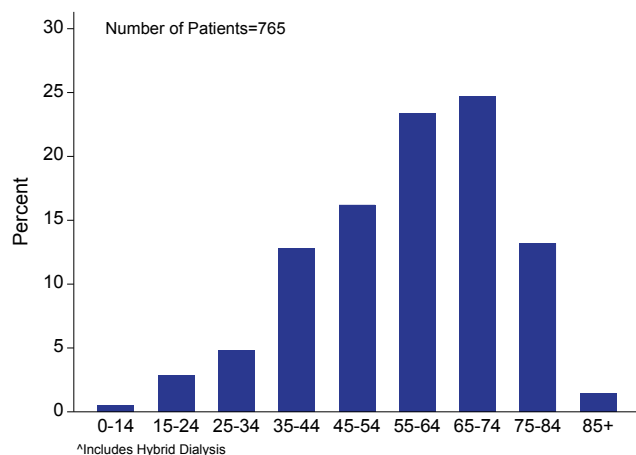


Figure 5.4.2
Age (%) of Prevalent Peritoneal Dialysis[^] Patients - New Zealand 2024



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Table 5.4 presents the number and proportion of incident and prevalent peritoneal dialysis patients by age group.

Table 5.4.1
Incident and Prevalent PD^a patients by Age Group - Australia

Category	Age group	2020	2021	2022	2023	2024
Incident Patients	0-14	21 (2%)	20 (2%)	28 (2%)	19 (2%)	22 (2%)
	15-24	28 (2%)	32 (3%)	40 (4%)	38 (3%)	24 (2%)
	25-34	94 (7%)	86 (7%)	75 (7%)	76 (6%)	89 (7%)
	35-44	117 (9%)	129 (11%)	113 (10%)	131 (10%)	137 (12%)
	45-54	209 (17%)	214 (18%)	178 (16%)	185 (15%)	197 (17%)
	55-64	283 (23%)	248 (21%)	238 (21%)	285 (23%)	226 (19%)
	65-74	308 (25%)	317 (26%)	305 (27%)	317 (25%)	310 (26%)
	75-84	178 (14%)	139 (12%)	153 (13%)	193 (15%)	171 (14%)
	85+	19 (2%)	16 (1%)	12 (1%)	15 (1%)	11 (1%)
	Total	1257	1201	1142	1259	1187
Prevalent Patients	0-14	31 (1%)	37 (1%)	41 (2%)	34 (1%)	33 (1%)
	15-24	35 (1%)	37 (1%)	61 (2%)	56 (2%)	53 (2%)
	25-34	122 (5%)	130 (5%)	121 (5%)	108 (4%)	117 (4%)
	35-44	196 (8%)	220 (8%)	219 (8%)	217 (8%)	235 (9%)
	45-54	357 (14%)	394 (15%)	385 (14%)	374 (14%)	374 (14%)
	55-64	554 (22%)	564 (21%)	547 (21%)	573 (21%)	542 (20%)
	65-74	684 (27%)	713 (27%)	710 (27%)	727 (27%)	728 (27%)
	75-84	506 (20%)	520 (19%)	507 (19%)	544 (20%)	555 (20%)
	85+	68 (3%)	72 (3%)	65 (2%)	67 (2%)	78 (3%)
	Total	2553	2687	2656	2700	2715

^aIncludes Hybrid Dialysis

Table 5.4.2
Incident and Prevalent PD^a patients by Age Group - New Zealand

Category	Age group	2020	2021	2022	2023	2024
Incident Patients	0-14	3 (1%)	3 (1%)	7 (2%)	2 (1%)	3 (1%)
	15-24	14 (4%)	9 (3%)	13 (4%)	12 (4%)	8 (2%)
	25-34	23 (6%)	24 (7%)	19 (6%)	18 (6%)	27 (8%)
	35-44	38 (10%)	41 (12%)	39 (12%)	34 (11%)	54 (17%)
	45-54	72 (19%)	68 (19%)	61 (18%)	69 (22%)	51 (16%)
	55-64	100 (26%)	82 (23%)	87 (26%)	81 (26%)	83 (26%)
	65-74	91 (24%)	83 (24%)	78 (23%)	78 (25%)	71 (22%)
	75-84	42 (11%)	36 (10%)	29 (9%)	19 (6%)	24 (7%)
	85+	2 (1%)	3 (1%)	3 (1%)	1 (0%)	2 (1%)
	Total	385	349	336	314	323
Prevalent Patients	0-14	7 (1%)	4 (0%)	5 (1%)	5 (1%)	4 (1%)
	15-24	23 (3%)	20 (2%)	20 (3%)	22 (3%)	22 (3%)
	25-34	42 (5%)	41 (5%)	35 (5%)	31 (4%)	37 (5%)
	35-44	87 (10%)	82 (10%)	81 (11%)	66 (9%)	98 (13%)
	45-54	143 (17%)	138 (17%)	124 (16%)	140 (19%)	124 (16%)
	55-64	218 (26%)	199 (25%)	199 (26%)	198 (26%)	179 (23%)
	65-74	209 (25%)	207 (25%)	204 (27%)	193 (26%)	189 (25%)
	75-84	115 (14%)	112 (14%)	93 (12%)	84 (11%)	101 (13%)
	85+	5 (1%)	9 (1%)	7 (1%)	10 (1%)	11 (1%)
	Total	849	812	768	749	765

^aIncludes Hybrid Dialysis

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Table 5.5 presents the number and proportion of incident peritoneal dialysis patients by primary kidney disease.

Table 5.5.1
Incident PD Patients by Primary Disease - Australia

Primary Kidney Disease	2020	2021	2022	2023	2024
Diabetic kidney disease	426 (34%)	388 (32%)	383 (34%)	398 (32%)	354 (30%)
Glomerular disease	338 (27%)	305 (25%)	288 (25%)	320 (25%)	317 (27%)
Hypertension / Renal vascular disease	133 (11%)	148 (12%)	142 (12%)	167 (13%)	131 (11%)
Familial / hereditary kidney diseases	89 (7%)	115 (10%)	89 (8%)	115 (9%)	119 (10%)
Tubulointerstitial disease	122 (10%)	114 (9%)	101 (9%)	100 (8%)	96 (8%)
Other systemic diseases affecting the kidney	24 (2%)	29 (2%)	23 (2%)	26 (2%)	28 (2%)
Miscellaneous kidney disorders	114 (9%)	101 (8%)	113 (10%)	132 (10%)	139 (12%)
Not reported	11 (1%)	1 (0%)	3 (0%)	1 (0%)	3 (0%)
Total	1257	1201	1142	1259	1187

Table 5.5.2
Incident PD Patients by Primary Disease - New Zealand

Primary Kidney Disease	2020	2021	2022	2023	2024
Diabetic kidney disease	166 (43%)	153 (44%)	155 (46%)	143 (46%)	134 (41%)
Glomerular disease	100 (26%)	101 (29%)	75 (22%)	62 (20%)	75 (23%)
Hypertension / Renal vascular disease	41 (11%)	43 (12%)	34 (10%)	34 (11%)	35 (11%)
Familial / hereditary kidney diseases	23 (6%)	18 (5%)	19 (6%)	23 (7%)	20 (6%)
Tubulointerstitial disease	33 (9%)	17 (5%)	24 (7%)	15 (5%)	29 (9%)
Other systemic diseases affecting the kidney	5 (1%)	4 (1%)	10 (3%)	11 (4%)	4 (1%)
Miscellaneous kidney disorders	16 (4%)	12 (3%)	19 (6%)	26 (8%)	25 (8%)
Not reported	1 (0%)	1 (0%)	0 (0%)	0 (0%)	1 (0%)
Total	385	349	336	314	323

Figure 5.5 shows the proportion of dialysis patients using PD as their modality by age.

Figure 5.5.1
PD^a Patients (%) of all Prevalent Dialysis - Australia 2024

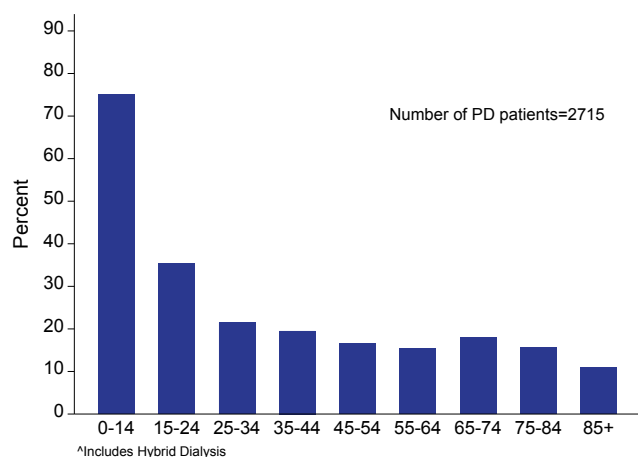


Figure 5.5.2
PD^a Patients (%) of all Prevalent Dialysis - New Zealand 2024

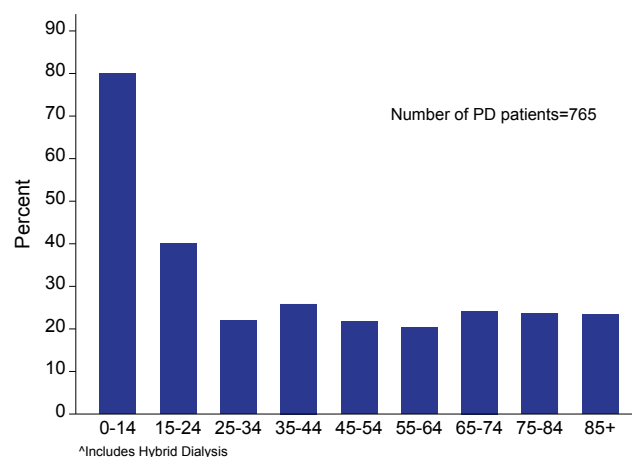


Table 5.6 shows the number of prevalent PD patients, and number per million population, according to PD type. Figure 5.6 shows the trends in PD type use over the last five years. Hybrid dialysis has been collected as a modality of dialysis since 2023. Hybrid dialysis is defined as combined concurrent peritoneal dialysis and haemodialysis therapy. As this is a newly collected variable, there may have been under-reporting in the number of hybrid therapy patients.

Population estimates for Australia and New Zealand used for the calculation of prevalence per million population were sourced from the Australian Bureau of Statistics (2024)¹ and Stats NZ (2024)².

Table 5.6.1
Number (per Million) of Prevalent PD Patients, Australia 2020-2024

	2020	2021	2022	2023	2024
Total	2553 (100)	2687 (105)	2656 (102)	2700 (101)	2715 (100)
APD	1779 (69)	1878 (73)	1933 (74)	1919 (72)	1954 (72)
APD Hybrid	-	-	-	18 (1)	31 (1)
CAPD	774 (30)	809 (31)	723 (28)	760 (29)	726 (27)
CAPD Hybrid	-	-	-	3 (0)	4 (0)

Hybrid Dialysis was only collected from 2023 onwards as a modality of treatment.

Table 5.6.2
Number (per Million) of Prevalent PD Patients, New Zealand 2020-2024

	2020	2021	2022	2023	2024
Total	849 (167)	812 (159)	768 (150)	749 (143)	765 (143)
APD	511 (100)	480 (94)	482 (94)	487 (93)	503 (94)
APD Hybrid	-	-	-	3 (1)	1 (0)
CAPD	338 (66)	332 (65)	286 (56)	257 (49)	261 (49)
CAPD Hybrid	-	-	-	2 (0)	0 (0)

Hybrid Dialysis was only collected from 2023 onwards as a modality of treatment.

Figure 5.6.1
Prevalent PD[^] Modality - Australia, December 2020-2024

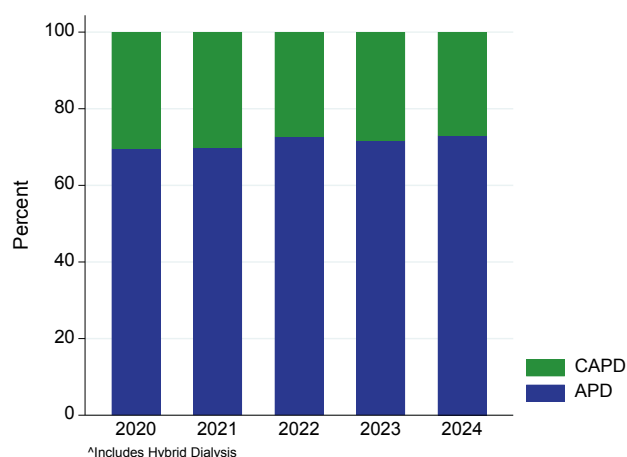
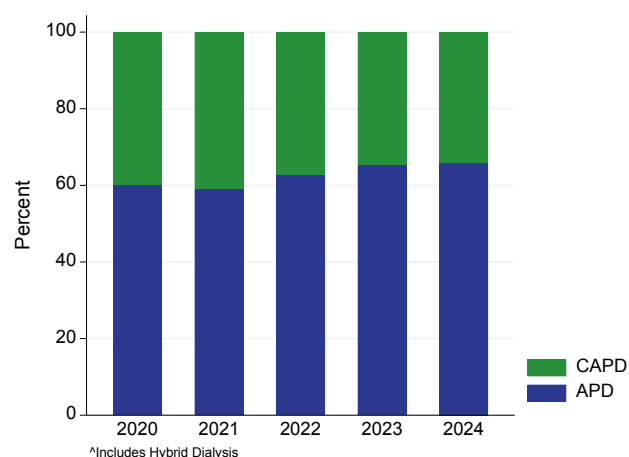


Figure 5.6.2
Prevalent PD[^] Modality - New Zealand, December 2020-2024



Collection of the first peritoneal catheter insertion date commenced in 2023. Table 5.7 shows the days from PD catheter insertion to first PD start. Urgent start PD is defined as 0-3 days and early start PD as 4-14 days.

Figure 5.7
Days from First PD Catheter Insertion to First PD Start

Country	Days	2023	2024
Australia	0-3 (Urgent start)	53 (4%)	39 (4%)
	4-14 (Early start)	139 (12%)	153 (14%)
	>14	962 (81%)	910 (82%)
	Not Reported	34 (3%)	7 (1%)
	Total	1188	1109
New Zealand	0-3 (Urgent start)	10 (3%)	6 (2%)
	4-14 (Early start)	37 (12%)	25 (8%)
	>14	252 (84%)	265 (89%)
	Not Reported	2 (1%)	2 (1%)
	Total	301	298

PERITONEAL DIALYSIS FLUIDS

Table 5.8 shows the use of icodextrin by country and PD type at the end of 2024. Figure 5.7 shows the trends in icodextrin use over the last three years. Finally, Figure 5.8 shows icodextrin use by state and PD type at the end of 2024.

Table 5.8
Icodextrin Usage by Modality Type - December 2024

PD Type	Australia				New Zealand			
	No	Yes	Not Reported	Total	No	Yes	Not Reported	Total
CAPD	n 373	333	24	730	60	194	7	261
	% 51%	46%	3%		23%	74%	3%	
APD	n 1000	944	41	1985	93	409	2	504
	% 50%	48%	2%		18%	81%	<1%	
Total	n 1373	1277	65	2715	153	603	9	765
	% 51%	47%	2%		20%	79%	1%	

^Includes Hybrid Dialysis

Figure 5.7.1
Icodextrin Use by PD Modality^ - Prevalent Patients
December 2022-2024 Australia

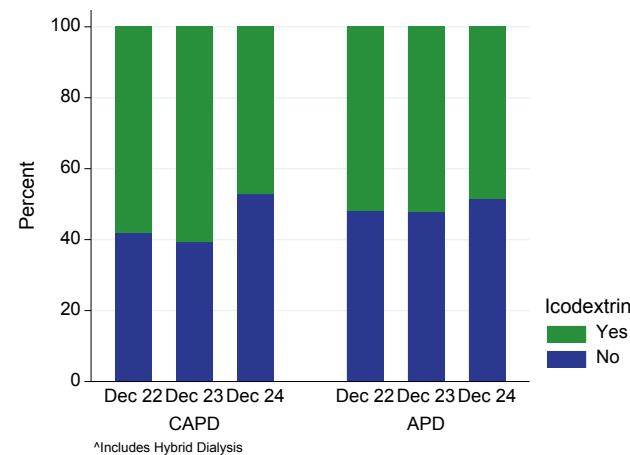


Figure 5.7.2
Icodextrin Use by PD Modality^ - Prevalent Patients
December 2022-2024 New Zealand

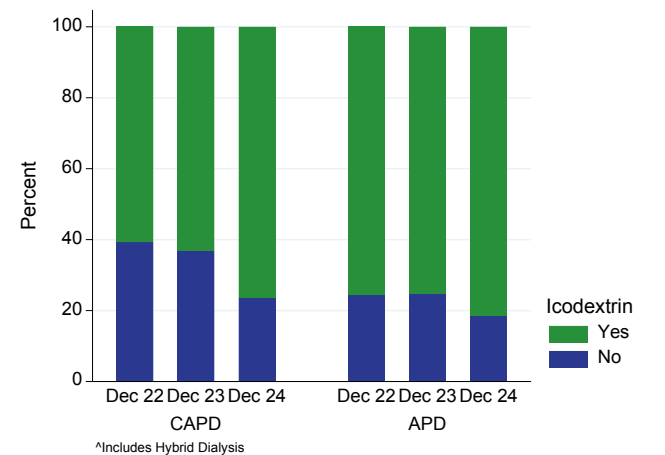


Figure 5.8
Icodextrin Use by State and Country - Prevalent PD[^] Patients December 2024

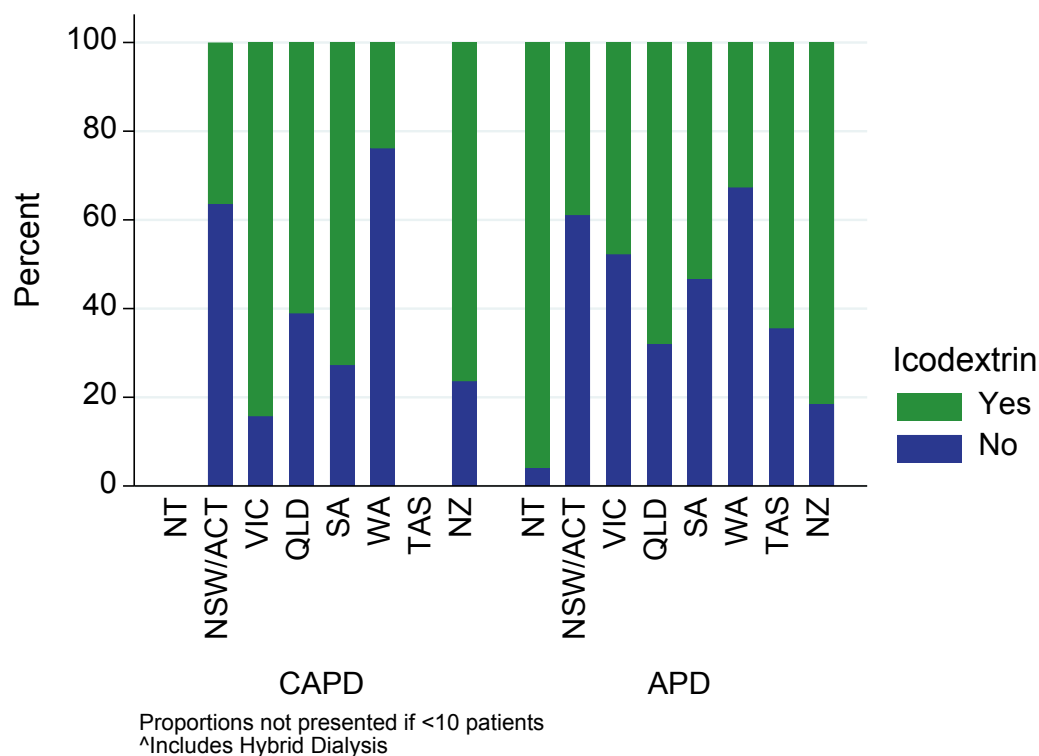


Table 5.9 and Figures 5.9 and 5.10 present similar data for low Glucose degradation products (GDP) PD solutions.

Table 5.9
Low GDP Usage by Modality Type - December 2024

PD Type	Australia				New Zealand			
	No	Yes	Not Reported	Total	No	Yes	Not Reported	Total
CAPD	n 469	237	24	730	248	6	7	261
	% 64%	32%	3%		95%	2%	3%	
APD	n 1583	361	41	1985	462	39	3	504
	% 80%	18%	2%		92%	8%	1%	
Total	n 2052	598	65	2715	710	45	10	765
	% 76%	22%	2%		93%	6%	1%	

^Includes Hybrid Dialysis

Figure 5.9.1
Low GDP Use by PD Modality[^] - Prevalent Patients December 2022-2024 Australia

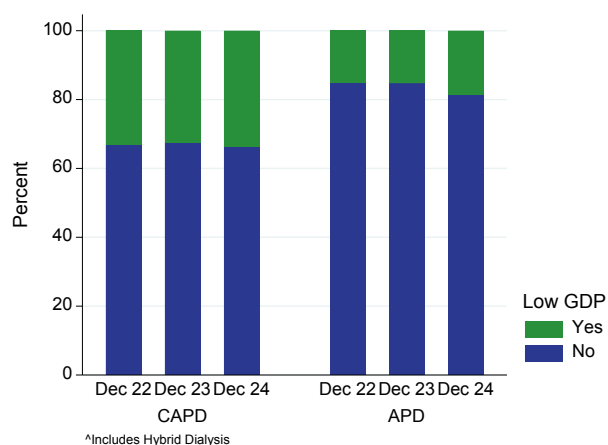
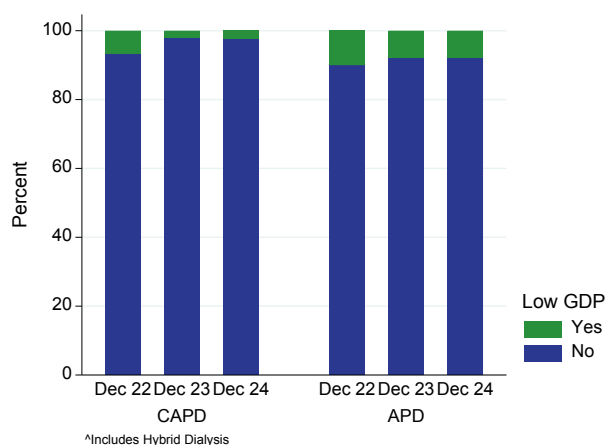


Figure 5.9.2
Low GDP Use by PD Modality[^] - Prevalent Patients December 2022-2024 New Zealand



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Figure 5.10
Low GDP Use by State and Country - Prevalent PD[^] Patients December 2024

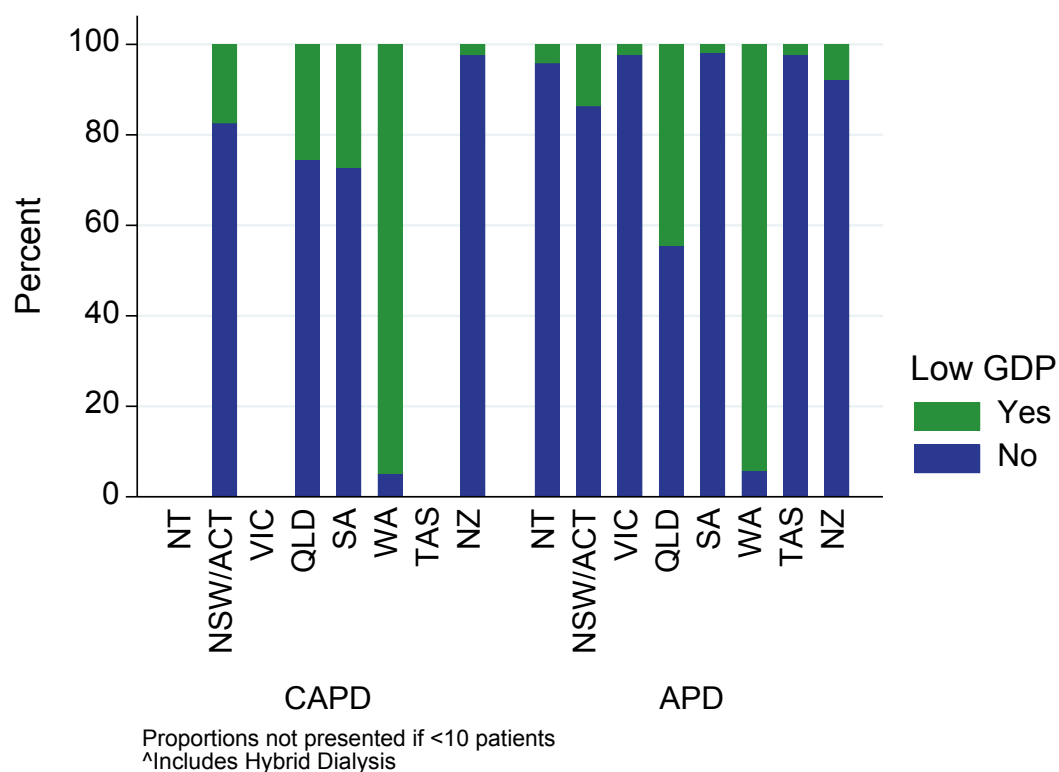


Figure 5.11 shows the proportion of peritoneal dialysis patients using a low GDP solution by hospital.

Figure 5.11.1
% Low GDP Use[^] by Hospital - Australia 31 December 2024

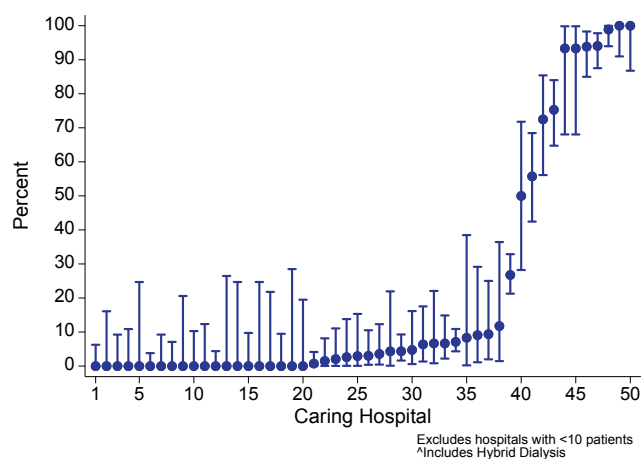
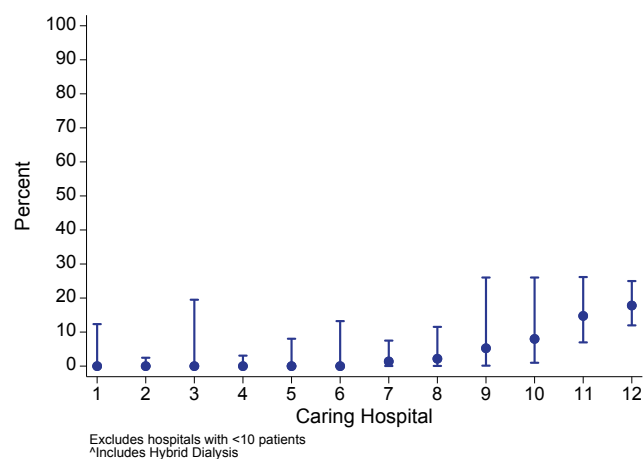


Figure 5.11.2
% Low GDP Use[^] by Hospital - New Zealand 31 December 2024



PATIENT SURVIVAL

The next section examines PD patient survival. Survival time is presented for those commencing PD for the first time within 365 days of KRT start, from the date of PD start, and censored at transplantation. Patients commencing PD after a transplant are excluded.

Table 5.10 and Figure 5.12 show patient survival by era.

Table 5.10
PD[^] Patient Survival by Era - 2013-2024; % [95% Confidence Interval]

Country	Era	Number of Patients	Survival			
			6 months	1 year	3 years	5 years
Australia	2013 - 2015	2976	97 [96, 98]	93 [92, 94]	73 [71, 75]	53 [51, 55]
	2016 - 2018	3075	97 [96, 97]	93 [92, 94]	74 [72, 76]	53 [51, 55]
	2019 - 2021	3246	97 [97, 98]	94 [93, 95]	77 [76, 79]	54 [52, 57]
	2022 - 2024	3278	97 [96, 98]	94 [93, 95]	-	-
New Zealand	2013 - 2015	815	97 [95, 98]	92 [90, 94]	68 [65, 71]	46 [42, 50]
	2016 - 2018	925	96 [94, 97]	92 [90, 93]	65 [61, 68]	41 [38, 45]
	2019 - 2021	966	97 [96, 98]	94 [92, 95]	68 [65, 71]	45 [41, 50]
	2022 - 2024	872	97 [95, 98]	91 [88, 93]	-	-

Peritoneal Dialysis within 365 days of KRT start

Censored for Transplant

[^]Includes Hybrid Dialysis

Figure 5.12.1
PD[^] Patient Survival by Era - Australia 2013-2024

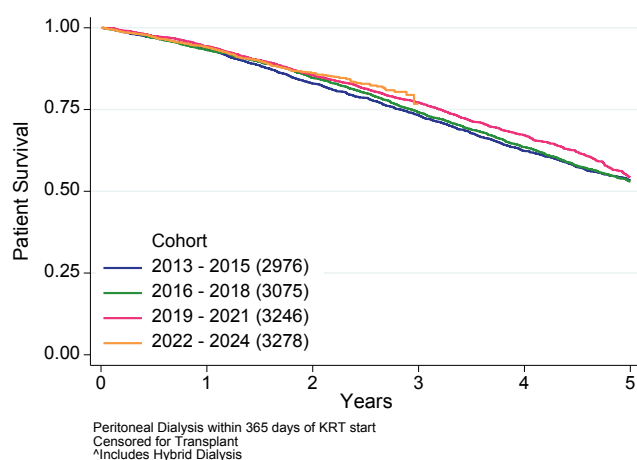


Figure 5.12.2
PD[^] Patient Survival by Era - New Zealand 2013-2024

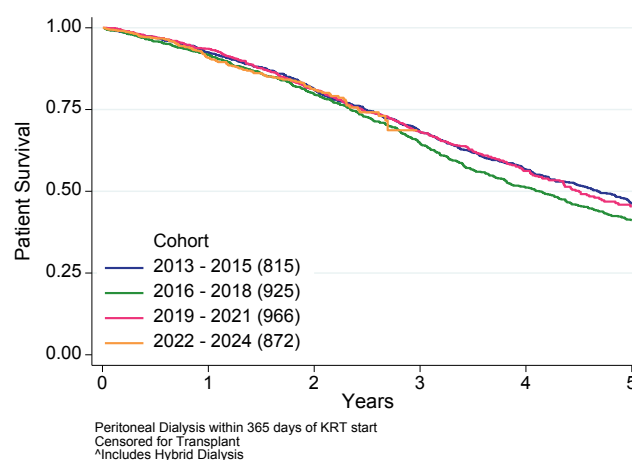


Table 5.11 and Figure 5.13 demonstrate the strong association between patient age and survival.

Table 5.11
PD^ Patient Survival by Age Group - 2013-2024; % [95% Confidence Interval]

Country	Age Group	Number of Patients	Survival			
			6 months	1 year	3 years	5 years
Australia	<40	1886	99 [98, 99]	98 [97, 99]	92 [90, 94]	86 [83, 89]
	40-59	4000	99 [98, 99]	96 [95, 97]	83 [81, 84]	68 [65, 70]
	60-74	4774	96 [96, 97]	93 [92, 94]	73 [72, 75]	50 [48, 52]
	≥75	1915	94 [93, 95]	88 [86, 89]	57 [55, 60]	32 [30, 35]
New Zealand	<40	544	100 [99, 100]	98 [97, 99]	90 [86, 93]	78 [72, 83]
	40-59	1337	98 [97, 99]	95 [94, 96]	74 [71, 76]	52 [48, 56]
	60-74	1344	96 [94, 97]	89 [88, 91]	60 [57, 63]	36 [32, 39]
	≥75	353	92 [88, 94]	85 [80, 88]	47 [41, 52]	21 [17, 27]

Peritoneal Dialysis within 365 days of KRT start
Censored for Transplant
^Includes Hybrid Dialysis

Figure 5.13.1
PD^ Patient Survival by Age Group - Australia 2013-2024

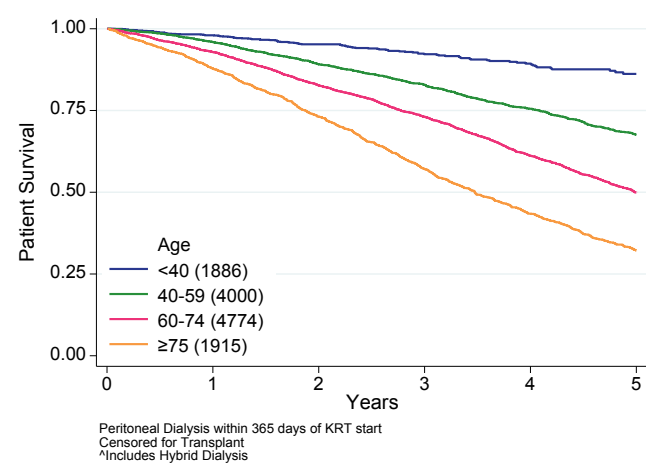


Figure 5.13.2
PD^ Patient Survival by Age Group - New Zealand 2013-2024

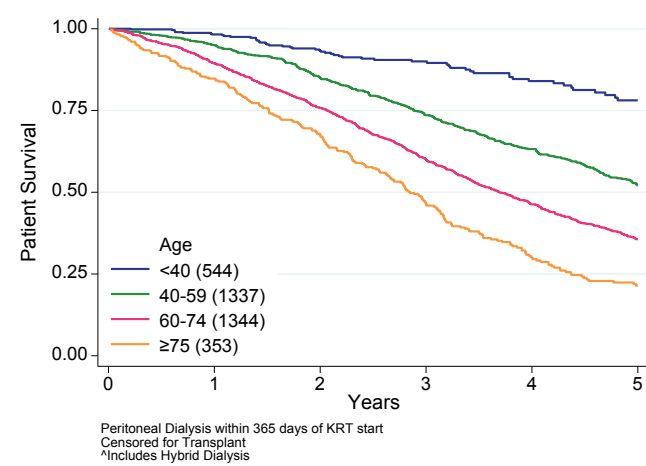


Table 5.12 and Figure 5.14 present these data by diabetic status.

Table 5.12
PD^ Patient Survival by Diabetic Status - 2013-2024; % [95% Confidence Interval]

Country	Diabetic Status	Number of Patients	Survival			
			6 months	1 year	3 years	5 years
Australia	Non-diabetic	6804	98 [98, 98]	96 [95, 96]	82 [81, 84]	64 [62, 66]
	Diabetic	5718	96 [96, 97]	92 [91, 92]	68 [67, 70]	45 [44, 47]
New Zealand	Non-diabetic	1631	97 [96, 98]	94 [93, 95]	75 [72, 77]	55 [52, 59]
	Diabetic	1941	96 [95, 97]	91 [89, 92]	61 [59, 64]	37 [34, 40]

Peritoneal Dialysis within 365 days of KRT start
Censored for Transplant
^Includes Hybrid Dialysis

Figure 5.14.1
PD^ Patient Survival by Diabetic Status - Australia 2013-2024

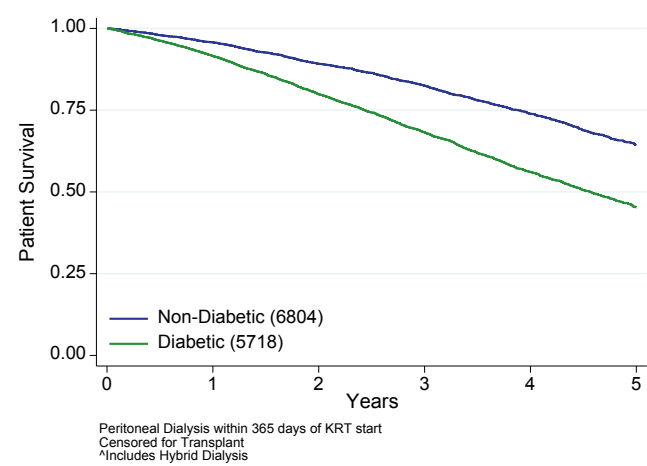
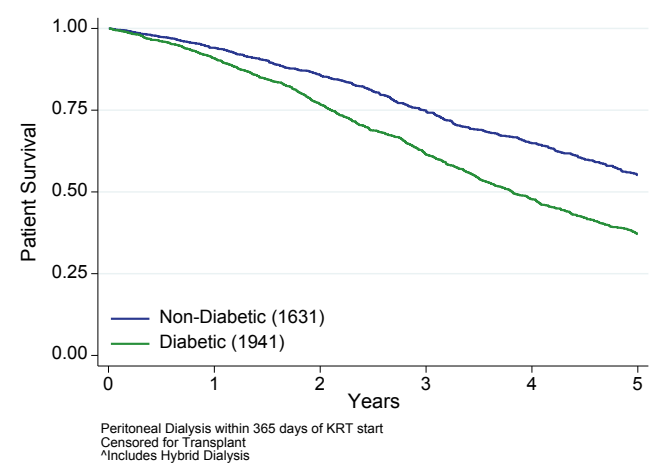


Figure 5.14.2
PD^ Patient Survival by Diabetic Status - New Zealand 2013-2024



TIME ON PERITONEAL DIALYSIS

This section examines time on peritoneal dialysis (previously known as technique survival), defined as the number of days the patient spent on PD before transferring to HD for at least 30 days, withdrawing from dialysis, or dying (either on PD or within 30 days of transfer to HD). Survival time is calculated from the date of PD start and censored at transplantation. Only patients initiating PD for the first time within 365 days of KRT commencement are included. Patients commencing PD after a transplant are excluded. Survival is shown for the same categories reported for patient survival above.

Table 5.13 and Figure 5.15 show time on peritoneal dialysis by era.

Table 5.13
Time on Peritoneal Dialysis^a by Era - 2013-2024; % [95% Confidence Interval]

Country	Era	Number of Patients	Survival			
			6 months	1 year	3 years	5 years
Australia	2013 - 2015	2976	88 [87, 89]	78 [76, 79]	39 [37, 41]	17 [15, 18]
	2016 - 2018	3075	86 [84, 87]	74 [73, 76]	37 [35, 39]	16 [15, 18]
	2019 - 2021	3246	87 [85, 88]	75 [74, 77]	40 [38, 41]	17 [15, 19]
	2022 - 2024	3278	87 [85, 88]	76 [74, 77]	-	-
New Zealand	2013 - 2015	815	87 [85, 89]	77 [74, 79]	40 [37, 44]	18 [15, 21]
	2016 - 2018	925	87 [85, 89]	78 [75, 81]	36 [32, 39]	13 [10, 16]
	2019 - 2021	966	85 [82, 87]	75 [73, 78]	36 [33, 39]	15 [11, 18]
	2022 - 2024	872	85 [82, 87]	72 [68, 75]	-	-

Peritoneal Dialysis within 365 days of KRT start

Censored for Transplant

^aIncludes Hybrid Dialysis

Figure 5.15.1
Time on Peritoneal Dialysis^a by Era - Australia 2013-2024

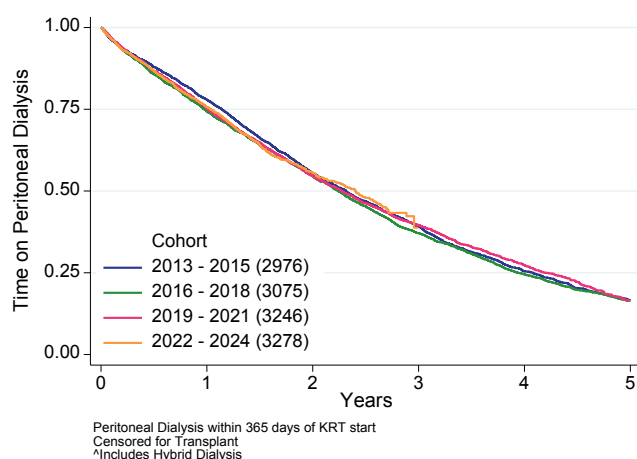
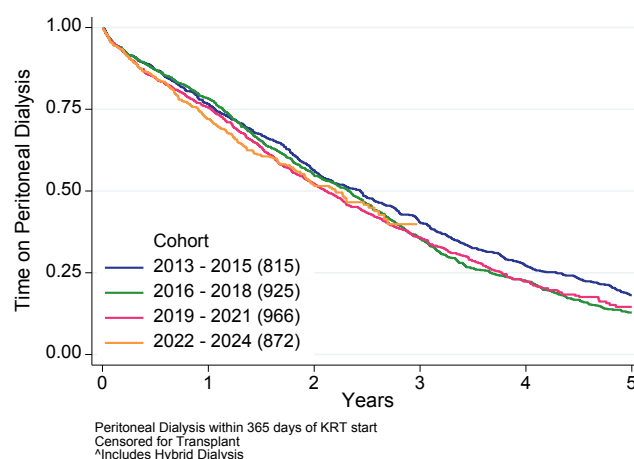


Figure 5.15.2
Time on Peritoneal Dialysis^a by Era - New Zealand 2013-2024



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Table 5.14 and Figure 5.16 show the association between patient age and time on peritoneal dialysis.

Table 5.14
Time on Peritoneal Dialysis^a by Age Group - 2013-2024; % [95% Confidence Interval]

Country	Age Group	Number of Patients	Survival			
			6 months	1 year	3 years	5 years
Australia	<40	1886	88 [87, 90]	76 [74, 78]	43 [40, 46]	27 [22, 31]
	40-59	4000	88 [87, 89]	78 [77, 79]	41 [39, 43]	19 [17, 21]
	60-74	4774	87 [85, 87]	76 [74, 77]	39 [37, 40]	16 [15, 18]
	≥75	1915	83 [81, 85]	71 [69, 73]	32 [30, 35]	12 [10, 14]
New Zealand	<40	544	89 [86, 91]	79 [75, 82]	46 [40, 51]	20 [14, 28]
	40-59	1337	88 [86, 89]	78 [75, 80]	38 [35, 41]	15 [12, 18]
	60-74	1344	84 [82, 86]	74 [72, 76]	35 [32, 38]	14 [12, 17]
	≥75	353	80 [76, 84]	70 [65, 75]	30 [25, 36]	11 [8, 16]

Peritoneal Dialysis within 365 days of KRT start

Censored for Transplant

^aIncludes Hybrid Dialysis

Figure 5.16.1
Time on Peritoneal Dialysis^a by Age Group
- Australia 2013-2024

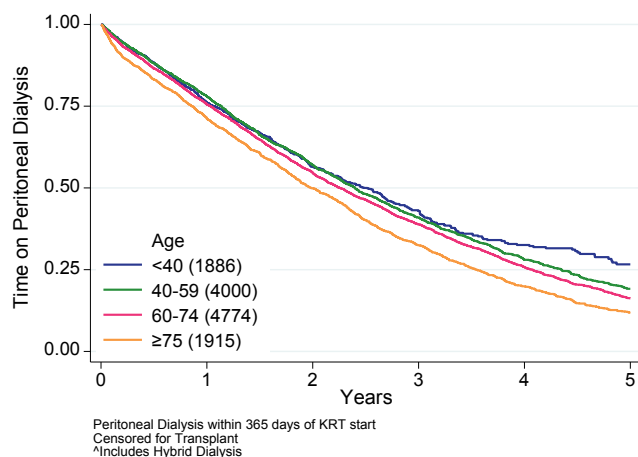


Figure 5.16.2
Time on Peritoneal Dialysis^a by Age Group
- New Zealand 2013-2024

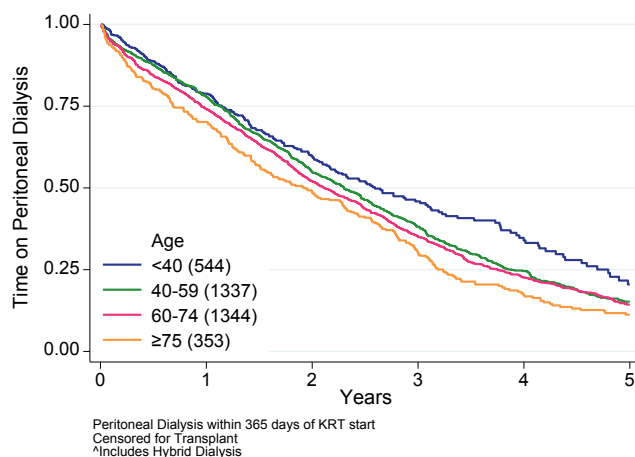


Table 5.15 and Figure 5.17 present these data by diabetic status.

Table 5.15
Time on Peritoneal Dialysis^ by Diabetic Status - 2013-2024; % [95% Confidence Interval]

Country	Diabetic Status	Number of Patients	Survival			
			6 months	1 year	3 years	5 years
Australia	Non-diabetic	6804	88 [87, 89]	78 [77, 79]	45 [44, 47]	23 [21, 24]
	Diabetic	5718	85 [84, 86]	73 [72, 74]	32 [31, 34]	12 [11, 13]
New Zealand	Non-diabetic	1631	87 [85, 88]	78 [76, 80]	46 [43, 49]	22 [19, 26]
	Diabetic	1941	85 [84, 87]	74 [72, 76]	31 [28, 33]	10 [9, 12]

Peritoneal Dialysis within 365 days of KRT start

Censored for Transplant

^Includes Hybrid Dialysis

Figure 5.17.1
Time on Peritoneal Dialysis^ by Diabetic Status - Australia 2013-2024

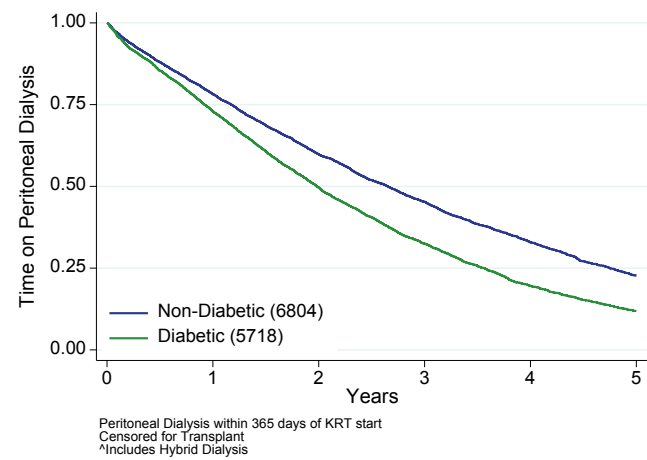


Figure 5.17.2
Time on Peritoneal Dialysis^ by Diabetic Status - New Zealand 2013-2024

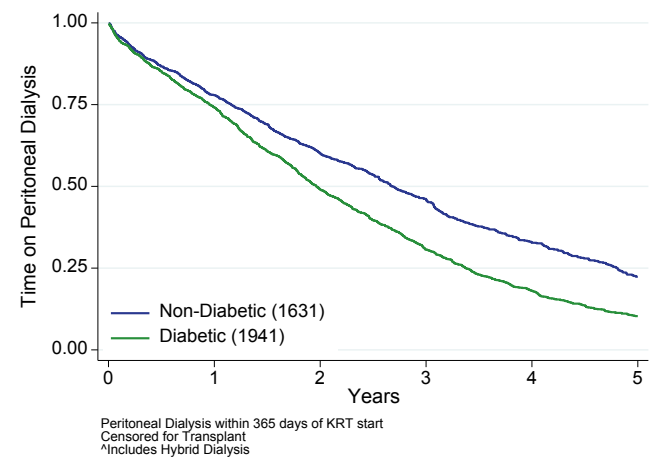


Table 5.16 and Figure 5.18 show transfer to haemodialysis (previously known at death-censored technique failure) by era. Survival time is also censored for withdrawal from dialysis and transplantation.

Table 5.16
Transfer to Haemodialysis by Era - 2013-2024; % [95% Confidence Interval]

Country	Era	Number of Patients	Survival			
			6 months	1 year	3 years	5 years
Australia	2013 - 2015	2976	90 [89, 91]	83 [82, 84]	53 [51, 56]	34 [31, 36]
	2016 - 2018	3075	88 [87, 89]	79 [78, 81]	50 [48, 52]	34 [32, 37]
	2019 - 2021	3246	89 [88, 90]	80 [78, 81]	52 [50, 54]	33 [30, 36]
	2022 - 2024	3278	89 [88, 90]	80 [79, 82]	-	-
New Zealand	2013 - 2015	815	90 [88, 92]	83 [80, 85]	60 [56, 64]	43 [38, 48]
	2016 - 2018	925	90 [88, 92]	85 [82, 87]	56 [52, 60]	36 [31, 41]
	2019 - 2021	966	87 [85, 89]	81 [78, 83]	53 [49, 57]	34 [28, 40]
	2022 - 2024	872	88 [86, 90]	80 [76, 83]	-	-

Peritoneal Dialysis within 365 days of KRT start
Censored for Transplant
*Includes Hybrid Dialysis

Figure 5.18.1
Transfer to Haemodialysis by Era - Australia 2013-2024

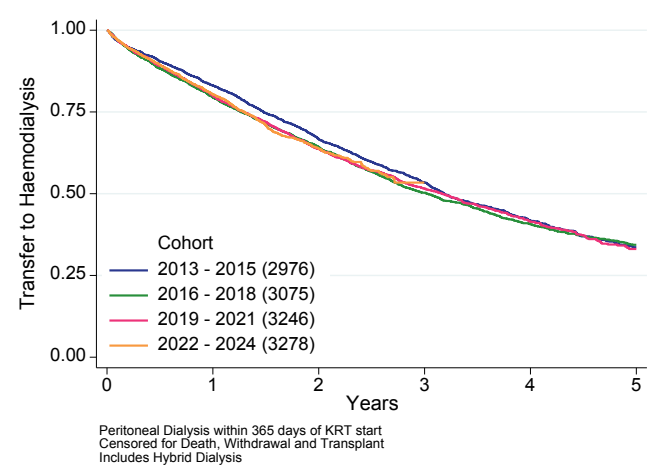


Figure 5.18.2
Transfer to Haemodialysis by Era - New Zealand 2013-2024

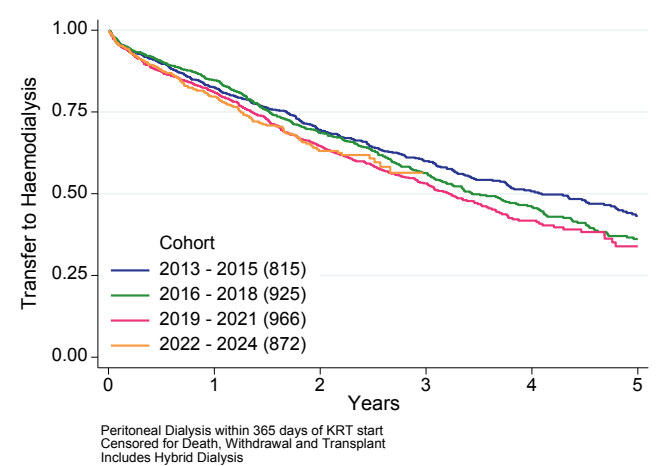


Table 5.17 and Figure 5.19 show the association between patient age and transfer to haemodialysis.

Table 5.17
Transfer to Haemodialysis by Age Group - 2013-2024; % [95% Confidence Interval]

Country	Age Group	Number of Patients	Survival			
			6 months	1 year	3 years	5 years
Australia	<40	1886	89 [88, 91]	78 [75, 80]	46 [43, 49]	30 [25, 34]
	40-59	4000	89 [88, 90]	81 [80, 82]	48 [46, 50]	28 [25, 30]
	60-74	4774	90 [89, 91]	81 [80, 82]	53 [52, 55]	36 [34, 38]
	≥75	1915	88 [87, 90]	81 [79, 83]	58 [55, 61]	44 [40, 47]
New Zealand	<40	544	89 [86, 91]	80 [76, 83]	50 [44, 56]	27 [20, 36]
	40-59	1337	90 [88, 91]	82 [79, 84]	53 [49, 56]	31 [27, 36]
	60-74	1344	88 [86, 90]	83 [81, 85]	59 [55, 62]	43 [38, 47]
	≥75	353	88 [84, 91]	83 [79, 87]	66 [60, 72]	56 [48, 64]

Peritoneal Dialysis within 365 days of KRT start

Censored for Transplant

*Includes Hybrid Dialysis

Figure 5.19.1
Transfer to Haemodialysis by Age Group - Australia 2013-2024

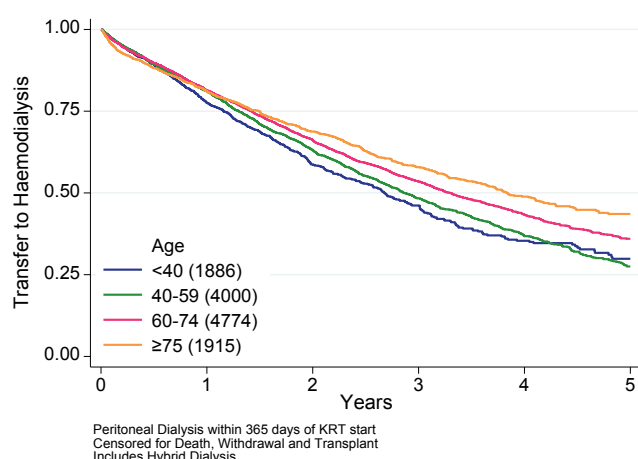


Figure 5.19.2
Transfer to Haemodialysis by Age Group - New Zealand 2013-2024

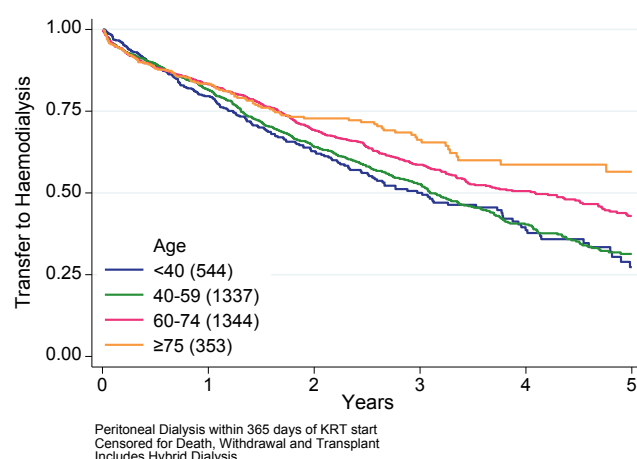


Table 5.18 and Figure 5.20 present these data by diabetic status.

Table 5.18
Transfer to Haemodialysis by Diabetic Status - 2013-2024; % [95% Confidence Interval]

Country	Diabetic Status	Number of Patients	Survival			
			6 months	1 year	3 years	5 years
Australia	Non-diabetic	6804	90 [89, 90]	82 [81, 83]	55 [53, 56]	36 [34, 39]
	Diabetic	5718	89 [88, 89]	80 [78, 81]	48 [47, 50]	31 [29, 33]
New Zealand	Non-diabetic	1631	89 [87, 90]	83 [81, 85]	61 [58, 64]	42 [38, 46]
	Diabetic	1941	89 [87, 90]	81 [80, 83]	52 [49, 54]	34 [30, 38]

Peritoneal Dialysis within 365 days of KRT start

Censored for Transplant

*Includes Hybrid Dialysis

Figure 5.20.1
Transfer to Haemodialysis by Diabetic Status - Australia 2013-2024

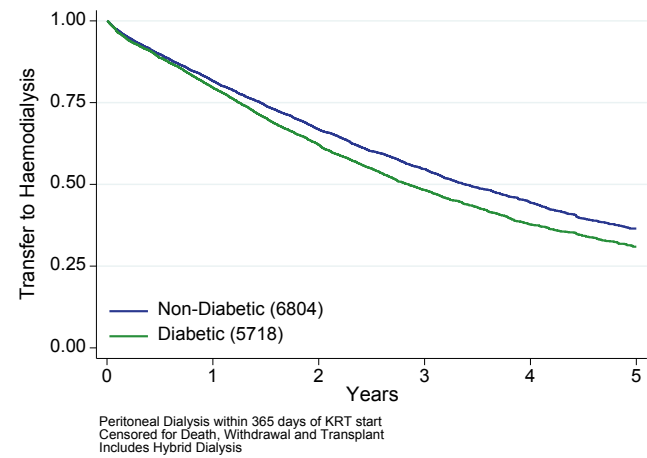
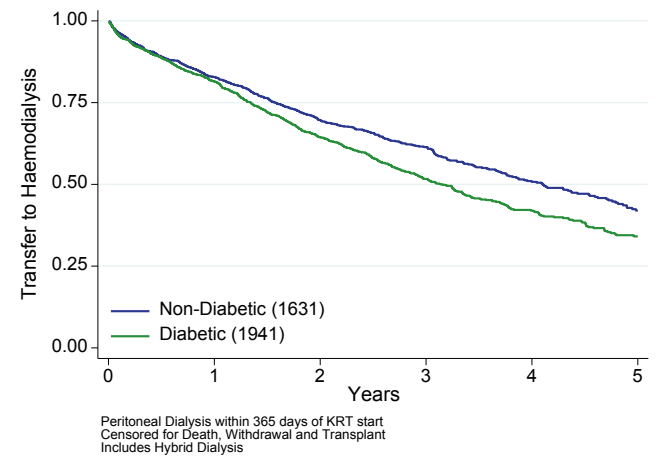


Figure 5.20.2
Transfer to Haemodialysis by Diabetic Status - New Zealand 2013-2024



The causes of PD discontinuation in 2023 are shown in Table 5.19.

Table 5.19
Reason for PD^a Discontinuation 2024

Category	Cause of PD Discontinuation	Australia	New Zealand
Infection	Recurrent/Persistent Peritonitis	61	36
	Acute Peritonitis	87	21
	Tunnel/Exit Site Infection	24	15
	Diverticulitis	2	1
	Abdominal Abscess	2	1
	Total	176 (20%)	74 (29%)
Inadequate dialysis	Inadequate Solute Clearance	116	19
	Inadequate Fluid Ultrafiltration	50	10
	Excessive Fluid Ultrafiltration	1	0
	Poor Nutrition	2	0
	Total	169 (19%)	29 (11%)
Mechanical	Dialysate Leak	19	9
	Catheter Block	19	7
	Catheter Fell Out	1	1
	Hernia	28	6
	Abdominal Pain	5	0
	Abdominal Surgery	19	1
	Multiple Adhesions	3	0
	Pleural Effusion	8	3
	Other Surgery	10	1
	Scrotal Oedema	1	1
	Total	113 (13%)	29 (11%)
Social	Patient Preference	31	7
	Unable to Manage Self-Care	44	7
	Total	75 (8%)	14 (6%)
Other	Pregnancy	1	0
	Cardiovascular	6	0
	Vascular Access	1	0
	Planned Transfer After Acute HD Start	1	0
	Other (Specify)	63	14
	Total	72 (8%)	14 (6%)
Death	Total	169 (19%)	59 (23%)
Withdrawal from dialysis	Total	93 (10%)	33 (13%)
Not reported	Total	21 (2%)	1 (0%)

^aIncludes Hybrid Dialysis

Figure 5.21 and Table 5.20 show the cumulative incidence of patients returning to PD after transfer to haemodialysis over 2020-2024. These data are censored at transplantation, and death is treated as a competing risk.

Figure 5.21.1
Time to Restarting PD[^] after Transfer to Haemodialysis - Australia 2020-2024

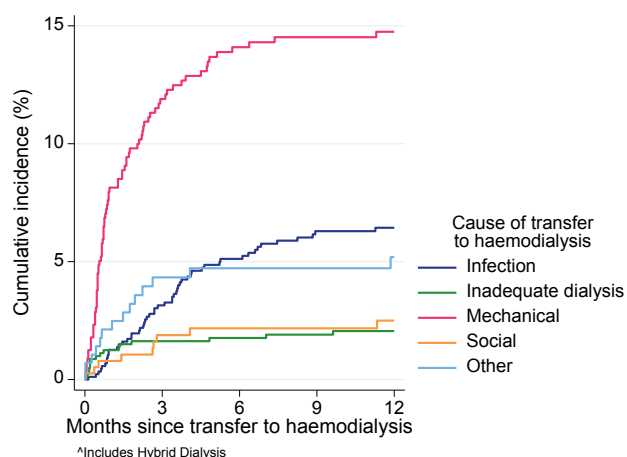


Figure 5.21.2
Time to Restarting PD[^] after Transfer to Haemodialysis - New Zealand 2020-2024

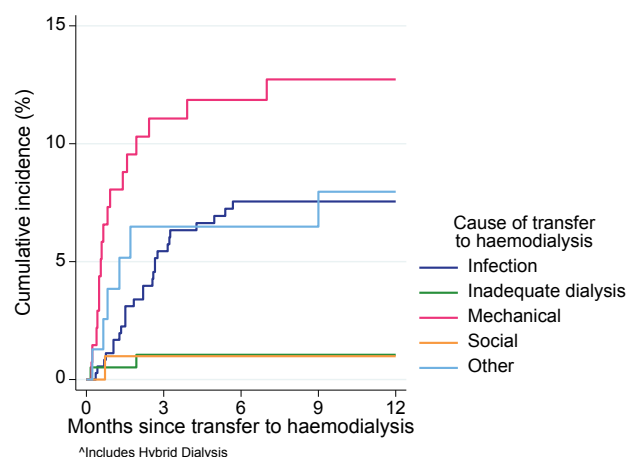


Table 5.20.1
Return to PD[^] (Cumulative Incidence and [95% CI]) by Cause of Transfer to Haemodialysis, Australia 2020-2024

Cause of transfer to haemodialysis	3 months	6 months	9 months	12 months
Infection	3.1 [2.1, 4.5]	5.1 [3.8, 6.8]	6.3 [4.8, 8.1]	6.4 [4.9, 8.3]
Inadequate dialysis	1.6 [0.9, 2.7]	1.8 [1.0, 2.9]	1.9 [1.1, 3.1]	2.1 [1.2, 3.2]
Mechanical	11.9 [9.3, 14.8]	14.1 [11.3, 17.2]	14.5 [11.7, 17.6]	14.7 [11.9, 17.9]
Social	1.9 [0.8, 3.7]	2.2 [1.0, 4.1]	2.2 [1.0, 4.1]	2.5 [1.2, 4.5]
Other	4.3 [2.4, 7.2]	4.7 [2.6, 7.7]	4.7 [2.6, 7.7]	5.2 [3.0, 8.3]

[^]Includes Hybrid Dialysis

Table 5.20.2
Return to PD[^] (Cumulative Incidence and [95% CI]) by Cause of Transfer to Haemodialysis, New Zealand 2020-2024

Cause of transfer to haemodialysis	3 months	6 months	9 months	12 months
Infection	5.4 [3.4, 8.2]	7.6 [5.1, 10.7]	7.6 [5.1, 10.7]	7.6 [5.1, 10.7]
Inadequate dialysis	1.1 [0.2, 3.5]	1.1 [0.2, 3.5]	1.1 [0.2, 3.5]	1.1 [0.2, 3.5]
Mechanical	11.1 [6.5, 17.0]	11.9 [7.1, 17.9]	12.7 [7.7, 19.0]	12.7 [7.7, 19.0]
Social	1.0 [0.1, 4.9]	1.0 [0.1, 4.9]	1.0 [0.1, 4.9]	1.0 [0.1, 4.9]
Other	6.5 [2.4, 13.4]	6.5 [2.4, 13.4]	6.5 [2.4, 13.4]	8.0 [3.2, 15.5]

[^]Includes Hybrid Dialysis

PERITONITIS

Table 5.21 and Figure 5.22 present the peritonitis-free survival over 2020-2024 by age at PD start.

Table 5.21
First PD Treatment to First Episode of Peritonitis By Age at Entry 01-Jan-2020 to 31-Dec-2024
% Survival [95% Confidence Interval]

Survival	Age Groups						All
	00-14	15-34	35-54	55-64	65-74	≥75	
Australia	(n=104)	(n=531)	(n=1512)	(n=1226)	(n=1486)	(n=866)	(n=5725)
3 months	88 [80, 93]	93 [91, 95]	94 [93, 95]	92 [90, 93]	94 [93, 95]	94 [92, 95]	94 [93, 94]
6 months	83 [73, 89]	88 [84, 90]	88 [87, 90]	87 [85, 89]	90 [89, 92]	88 [85, 90]	88 [87, 89]
9 months	73 [62, 81]	83 [79, 86]	84 [82, 86]	82 [79, 84]	85 [83, 87]	82 [79, 85]	83 [82, 84]
1 year	70 [59, 79]	78 [73, 81]	80 [77, 82]	79 [76, 81]	80 [78, 83]	79 [75, 82]	79 [78, 80]
2 years	63 [48, 74]	62 [55, 67]	67 [63, 70]	62 [58, 65]	66 [63, 70]	64 [60, 68]	65 [63, 66]
3 years	28 [6, 57]	56 [48, 63]	54 [49, 58]	49 [44, 54]	51 [47, 56]	53 [48, 59]	52 [50, 54]
New Zealand	(n=18)	(n=150)	(n=500)	(n=390)	(n=379)	(n=153)	(n=1590)
3 months	77 [49, 91]	97 [92, 99]	93 [90, 95]	91 [87, 93]	91 [88, 94]	94 [89, 97]	92 [91, 94]
6 months	65 [38, 82]	93 [87, 96]	89 [86, 92]	85 [81, 89]	84 [79, 87]	87 [80, 92]	87 [85, 89]
9 months	65 [38, 82]	85 [77, 91]	83 [79, 86]	81 [76, 85]	77 [72, 81]	81 [72, 87]	81 [79, 83]
1 year	65 [38, 82]	80 [70, 86]	79 [74, 82]	75 [69, 79]	72 [66, 76]	77 [68, 84]	76 [73, 78]
2 years	-	56 [43, 68]	61 [55, 67]	54 [47, 60]	50 [43, 56]	53 [41, 64]	55 [52, 58]
3 years	-	31 [13, 51]	49 [41, 56]	38 [30, 47]	34 [27, 42]	41 [28, 54]	40 [36, 44]

Figure 5.22.1
First PD Treatment to First Peritonitis -
By Age at First PD Australia 2020-2024

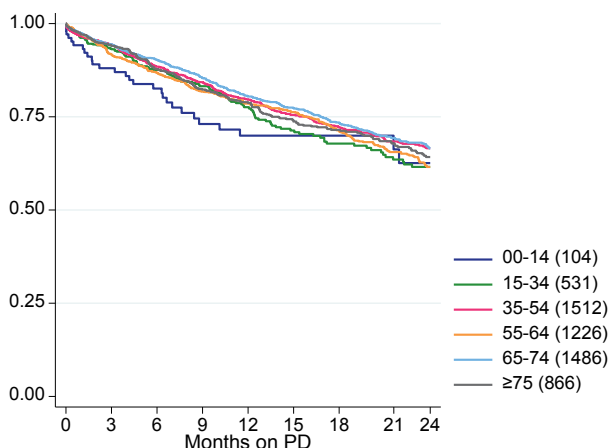
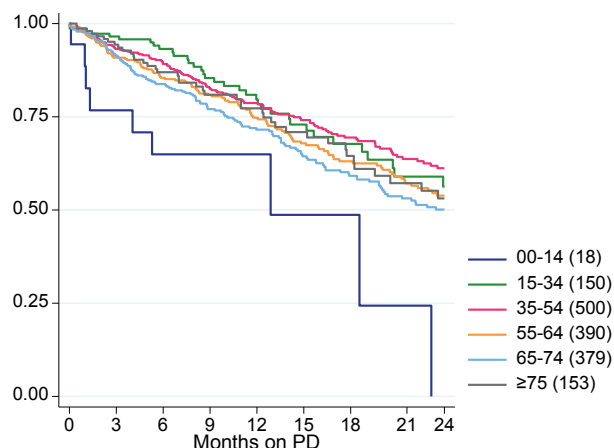


Figure 5.22.2
First PD Treatment to First Peritonitis -
By Age at First PD New Zealand 2020-2024



Diabetes is associated with a shorter time to first peritonitis in both countries, but this difference only appears several months into PD treatment (Figure 5.23).

Figure 5.23.1
First PD Treatment to First Peritonitis - By Diabetic Status at KRT entry Australia 2020-2024

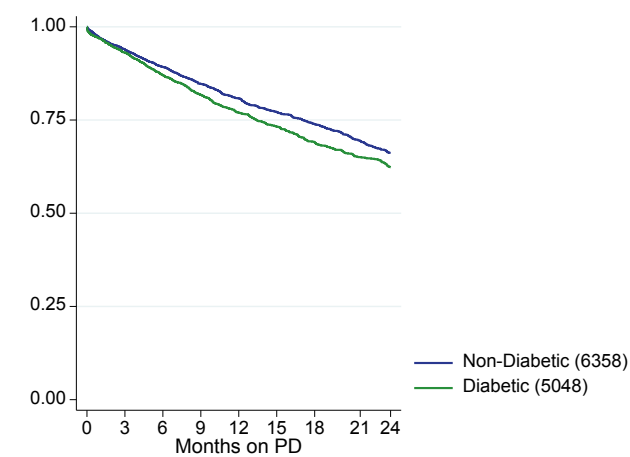
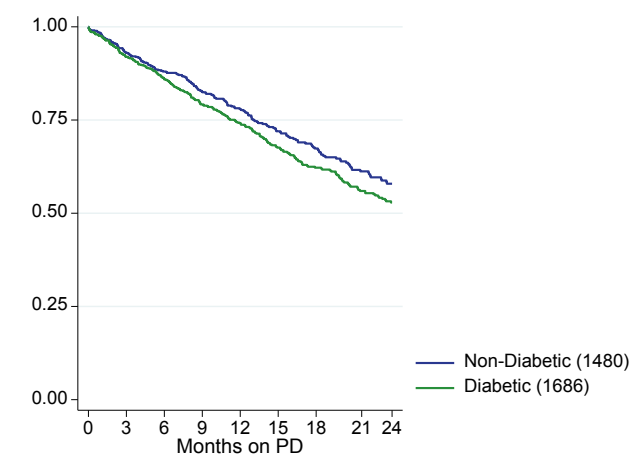


Figure 5.23.2
First PD Treatment to First Peritonitis - By Diabetic Status at KRT entry New Zealand 2020-2024



AUSTRALIAN PERITONITIS REGISTRY

Since October 2003, ANZDATA has collected detailed information on PD peritonitis episodes in Australian patients. A selection of those data are reported here. New Zealand has a separate PD registry which is not currently linked with ANZDATA.

Table 5.22 and Figures 5.24-5.28 report the peritonitis rate, expressed as episodes per patient-year in the table and on the left y axis of the figures and patient-months per episode on the right y axis of the figures, according to different categories.

Table 5.22
PD^a Peritonitis Episodes Per Year By State/Territory, Australia 2020-2024

State	2020	2021	2022	2023	2024	2020-2024
QLD	0.32	0.29	0.32	0.31	0.29	0.31
NSW	0.31	0.27	0.32	0.32	0.31	0.31
ACT	0.41	0.15	0.20	0.28	0.23	0.25
VIC	0.18	0.18	0.19	0.19	0.21	0.19
TAS	0.11	0.20	0.32	0.30	0.26	0.25
SA	0.21	0.26	0.24	0.17	0.06	0.18
NT	0.49	0.39	0.64	0.75	0.38	0.53
WA	0.40	0.34	0.34	0.40	0.33	0.36
Australia	0.29	0.25	0.29	0.29	0.27	0.28

^aIncludes Hybrid Dialysis

Figure 5.24
PD^a Peritonitis Rate - Australia 2004-2024

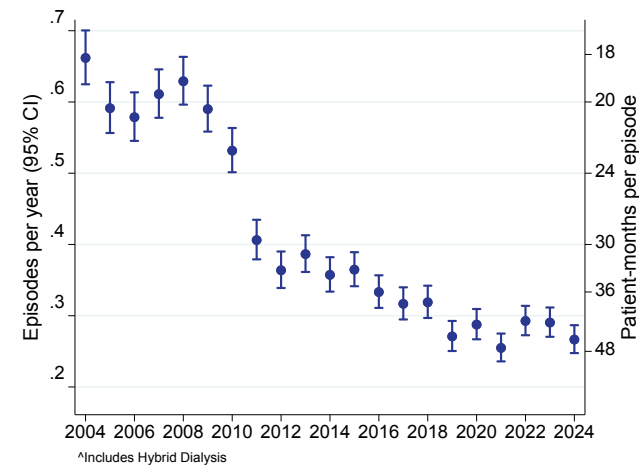


Figure 5.25
PD^a Peritonitis Rate - By State/Territory, Australia 2020-2024

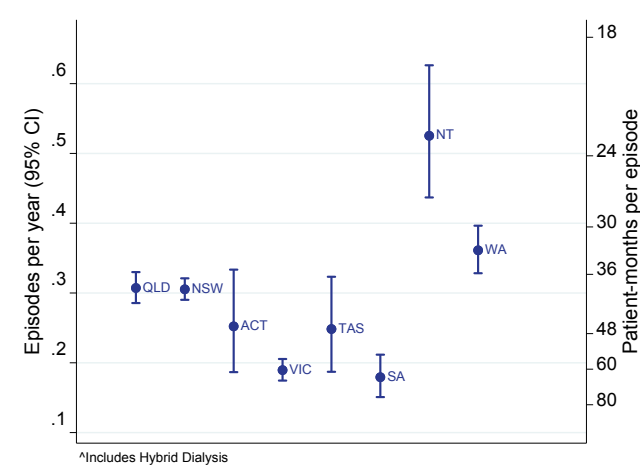


Figure 5.26
PD[^] Peritonitis Rate - By State/Territory, Australia 2015-2024

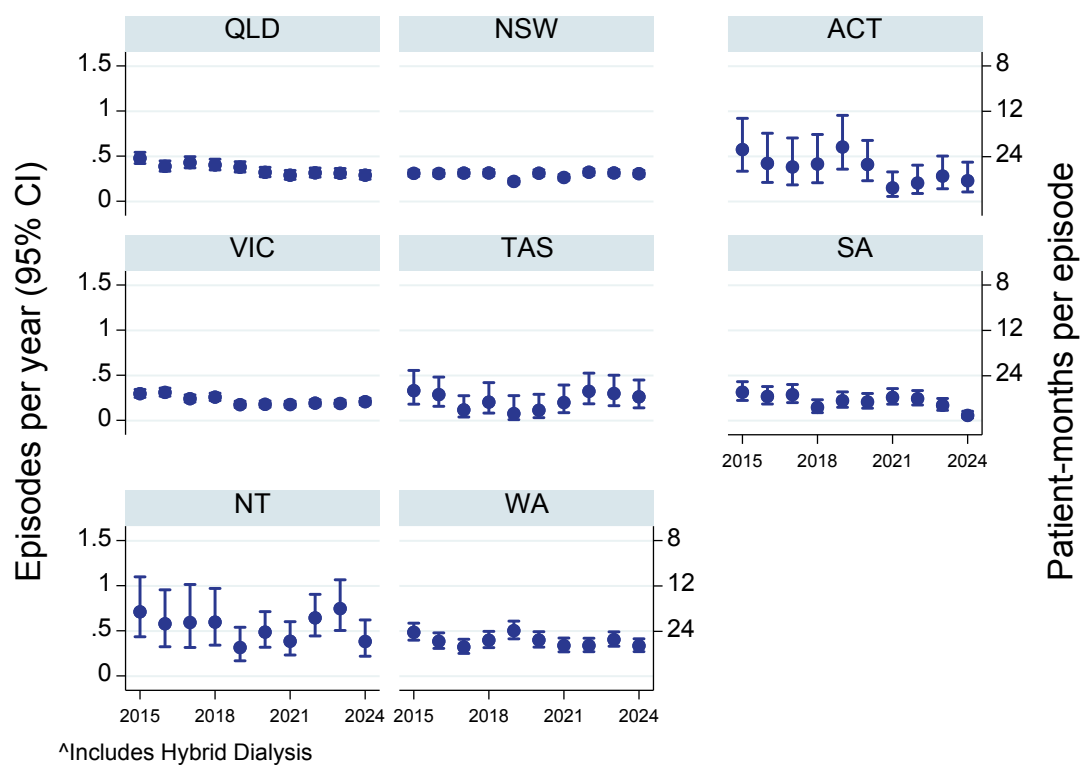


Figure 5.27
PD[^] Peritonitis Rate - By Treating Unit, Australia 2015-2024

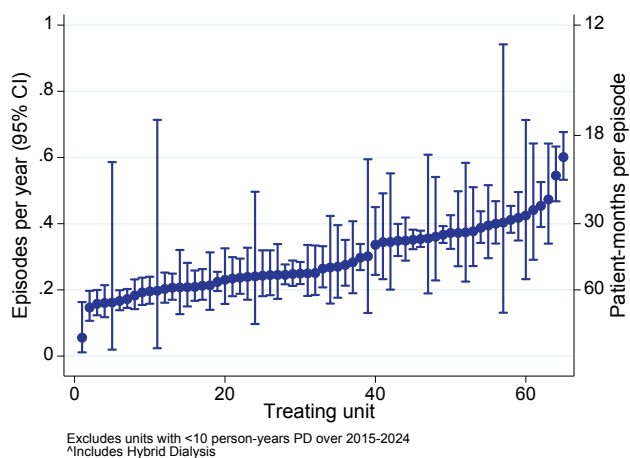
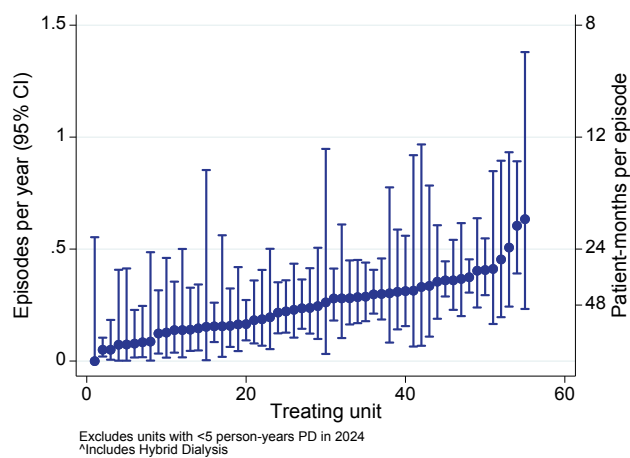


Figure 5.28
PD[^] Peritonitis Rate - By Treating Unit, Australia 2024



The organisms causing peritonitis are presented in Figure 5.29. Figure 5.30 shows these data for 2024 stratified by state/territory.

Figure 5.29
Distribution of Organisms Causing PD[^] Peritonitis - Australia 2019-2024

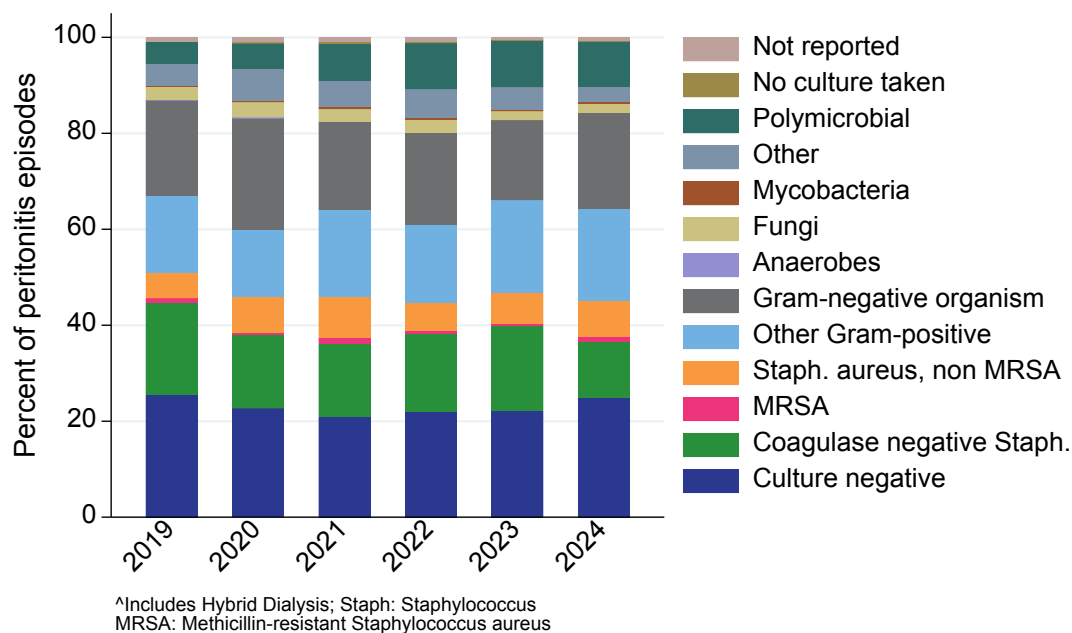
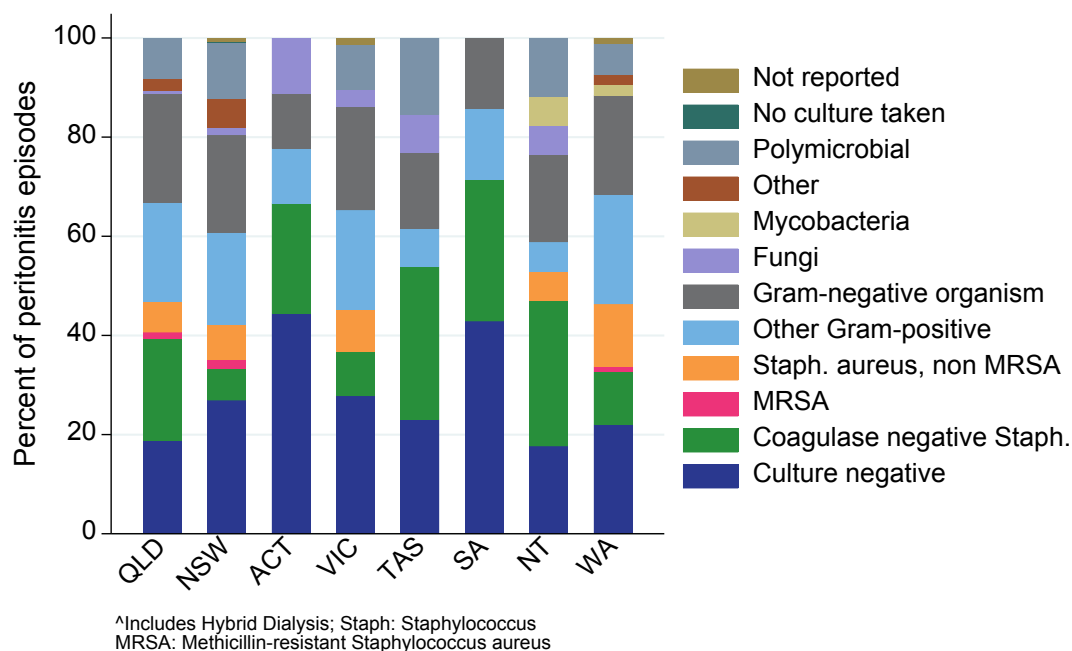


Figure 5.30
Distribution of Organisms Causing PD[^] Peritonitis - Australia 2024



Initial treatments for peritonitis episodes are shown in Figure 5.31 and 5.32. The medications used in the final regimen are shown in Figures 5.33 and 5.34.

Figure 5.31
Initial Antibiotic Regimen - Gram Positive Cover - Australia 2019-2024

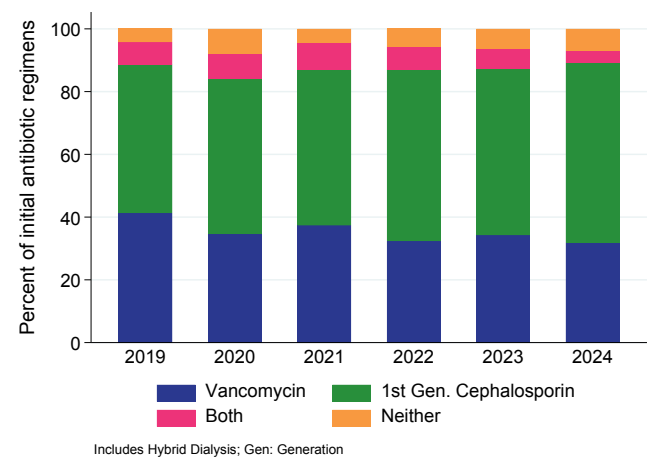


Figure 5.32
Initial Antibiotic Regimen - Gram Negative Cover - Australia 2019-2024

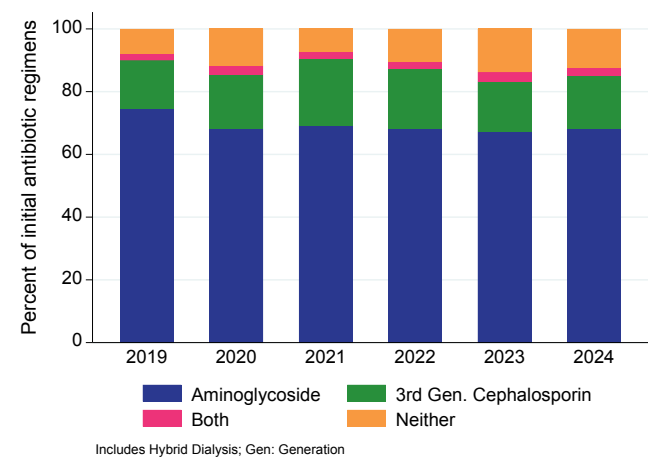


Figure 5.33
Final Antibiotic Regimen - Gram Positive Cover - Australia 2019-2024

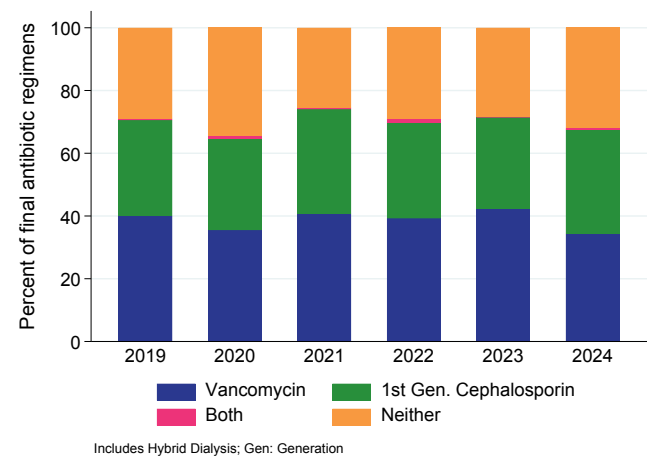
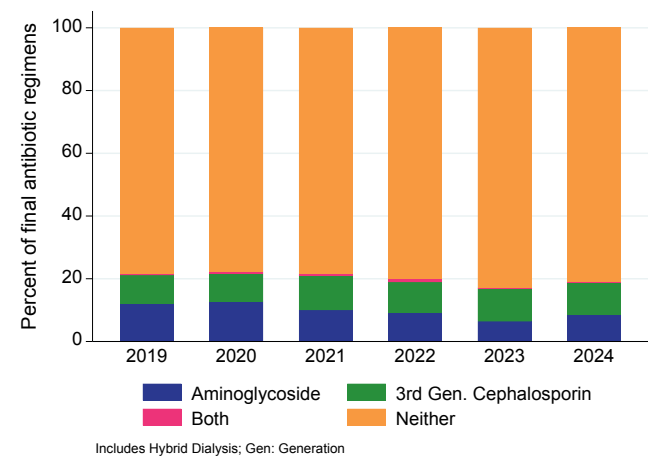
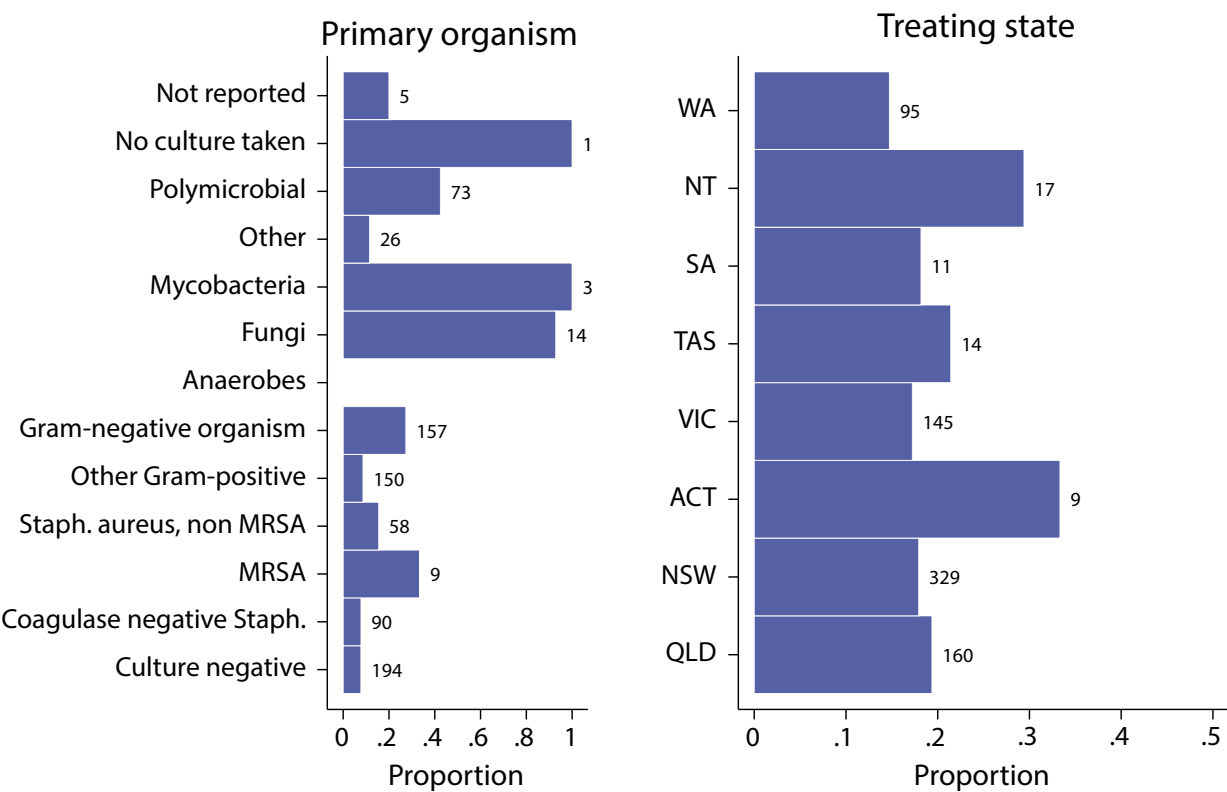


Figure 5.34
Final Antibiotic Regimen - Gram Negative Cover - Australia 2019-2024



The proportion of peritonitis episodes resulting in a permanent transfer to haemodialysis by organism and state/territory is shown in Figure 5.35.

Figure 5.35
Proportion of Episodes Resulting in Permanent HD Transfer - Australia 2024



Values are total number of peritonitis episodes reported in 2024
Includes Hybrid Dialysis; Staph: Staphylococcus
MRSA: Methicillin-resistant Staphylococcus aureus

LABORATORY BASED DATA AT THE TIME OF THE ANNUAL SURVEY

ANAEMIA MANAGEMENT

Figure 5.36 shows the variation in Hb between treating hospitals; median Hb ranged from 102 to 121g/L in Australia and 103-114g/L in New Zealand.

Figure 5.36.1
Haemoglobin in Peritoneal Dialysis[^] Patients - Australia 31 December 2024

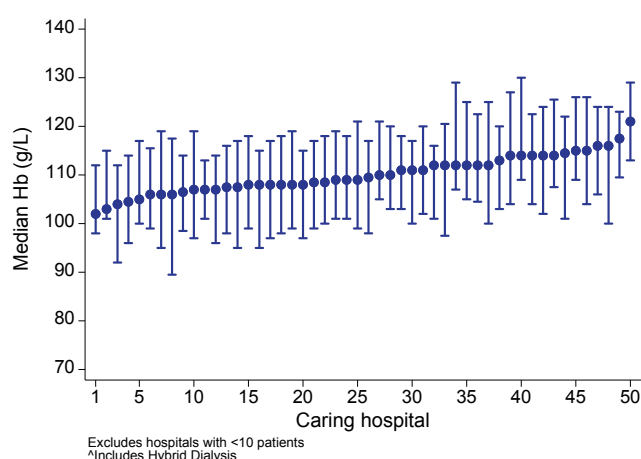


Figure 5.36.2
Haemoglobin in Peritoneal Dialysis[^] Patients - New Zealand 31 December 2024

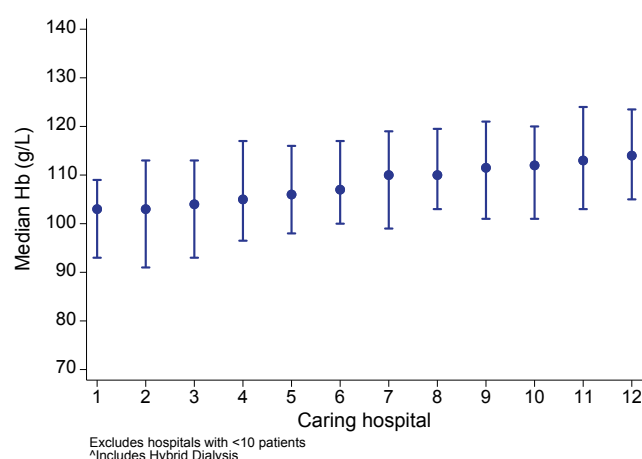


Figure 5.37 shows the proportion of peritoneal dialysis patients prescribed an erythropoiesis-stimulating agent (ESA) whose haemoglobin was between 100-115g/L; the proportion ranged from 29-75% in Australia and 30-67% in New Zealand.

Figure 5.37.1
% Peritoneal Dialysis[^] Patients receiving an ESA with Hb 100-115 g/L - Australia 31 December 2024

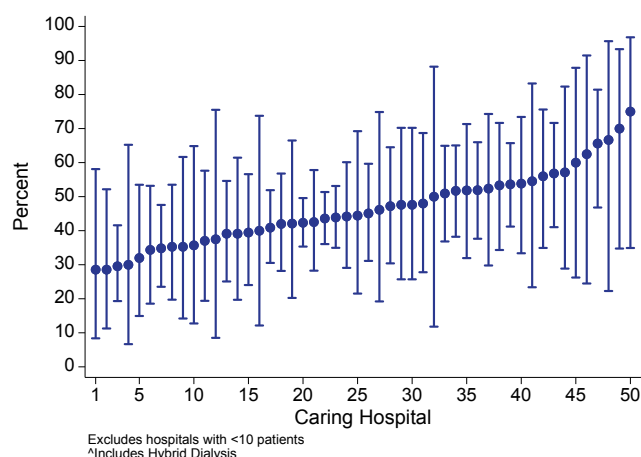
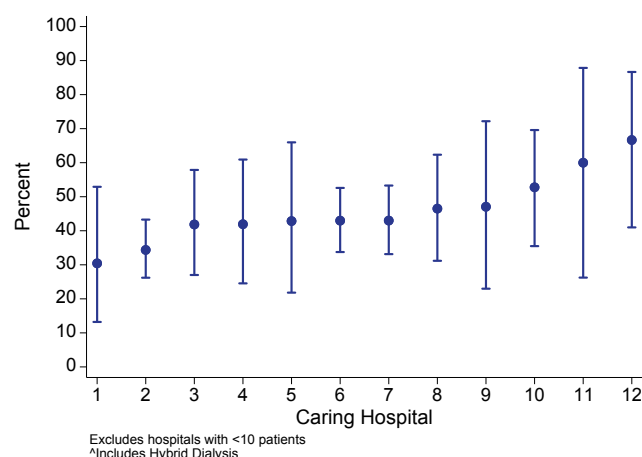


Figure 5.37.2
% Peritoneal Dialysis[^] Patients receiving an ESA with Hb 100-115 g/L - New Zealand 31 December 2024



BIOCHEMISTRY

Figures 5.38 and 5.39 show the proportions of peritoneal dialysis patients with serum calcium between 2.1-2.4mmol/L and phosphate between 0.8-1.6mmol/L respectively at the time of the annual survey. Note that the calcium is not corrected for albumin.

Figure 5.38.1

% PD[^] Patients with Calcium 2.1-2.4 mmol/L - Australia 31 December 2024

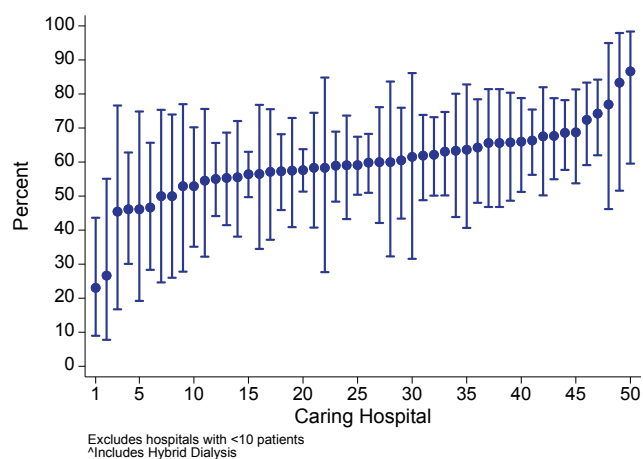


Figure 5.38.2

% PD[^] Patients with Calcium 2.1-2.4 mmol/L - New Zealand 31 December 2024

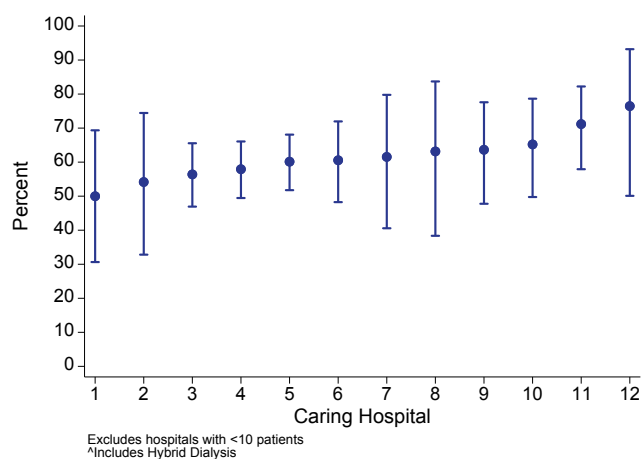


Figure 5.39.1

% PD[^] Patients with Phosphate 0.8-1.6 mmol/L - Australia 31 December 2024

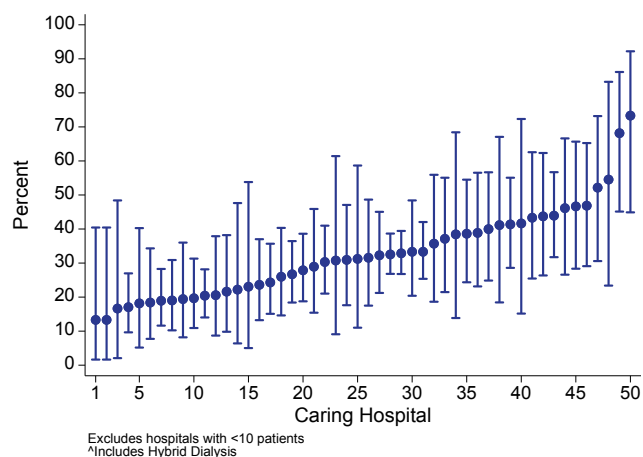
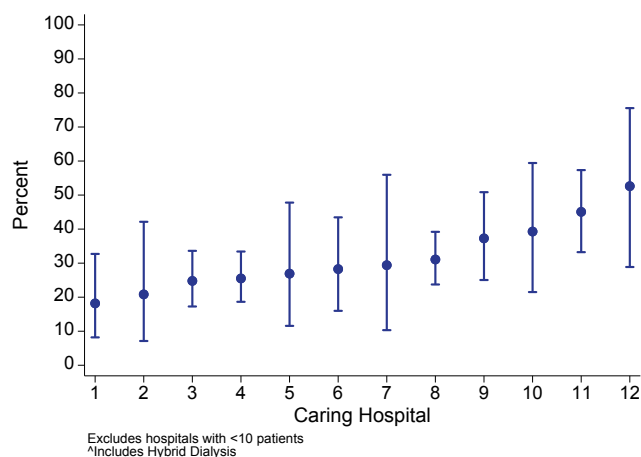


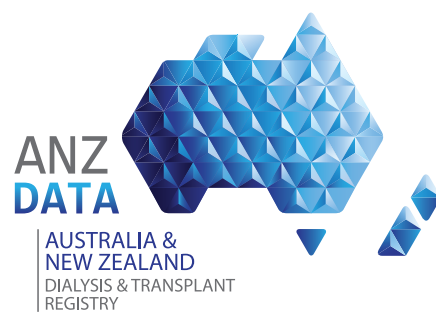
Figure 5.39.2

% PD[^] Patients with Phosphate 0.8-1.6 mmol/L - New Zealand 31 December 2024



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2. This work is based on/includes Stats NZ's data which are licensed by Stats NZ for re-use under the Creative Commons Attribution 4.0 International licence. Stats NZ, 2024, Estimated Resident Population by Age and Sex (1991+) (Annual-Jun), NZ Infoshare, viewed 12 Dec 2024, <http://infoshare.stats.govt.nz/>



CHAPTER 5

Peritoneal Dialysis