

Variation in Peritoneal Dialysis Time on Therapy by Country: Results from The Peritoneal Dialysis Outcomes and Practice Patterns Study

Supplemental Figure 1A. Cumulative incident curve of death, HD transfer, and transplant, in A/NZ, including all temporary transfer as HD transfer event.

Supplemental Figure 1B. Cumulative incident curve of death, HD transfer, and transplant, in Canada, including all temporary transfer as HD transfer event.

Supplemental Figure 1C. Cumulative incident curve of death, HD transfer, and transplant, in Japan, including all temporary transfer as HD transfer event.

Supplemental Figure 1D. Cumulative incident curve of death, HD transfer, and transplant, in Thailand, including all temporary transfer as HD transfer event.

Supplemental Figure 1E. Cumulative incident curve of death, HD transfer, and transplant, in UK, including all temporary transfer as HD transfer event.

Supplemental Figure 1F. Cumulative incident curve of death, HD transfer, and transplant, in US, including all temporary transfer as HD transfer event.

Supplemental Figure 2. Hazard ratio of PD discontinuation by country, compare to US, not counting hybrid transfers as transfer to HD events. Hazard ratio was estimated using left truncated Cox model based on PD vintage. Model adjusted for patient age, sex, BMI, black race, heart disease, diabetes, psychiatric disorder, prior HD experience, urine volume, albumin, care giver involvement, transplant waitlist referred, and accounting for facility clustering. Separate models for each outcome.

Supplemental Table 1. Distribution of time on therapy in years by country, based on cumulative incidence curve in Figure 1.

Supplemental Table 2. Hazard ratios for mortality with 95% confidence interval in comparison to the US, showing effects of sequential levels of adjustment.

Supplemental Table 3. Detailed reason among 111 patients with solute clearance as reason for HD transfer.

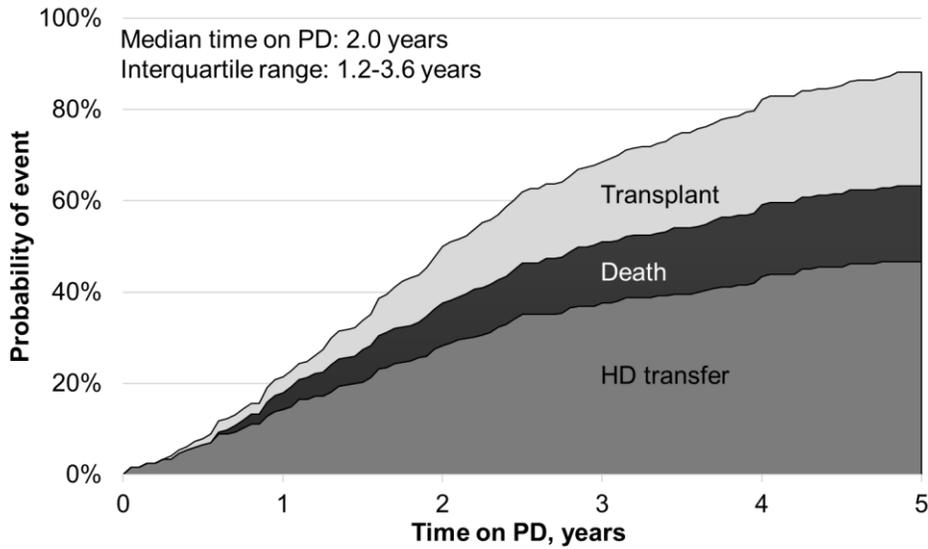
Supplemental Table 4A. Hazard ratio for patient characteristics.

Supplemental Table 4B. Adjusted hazard ratio of facility factors.

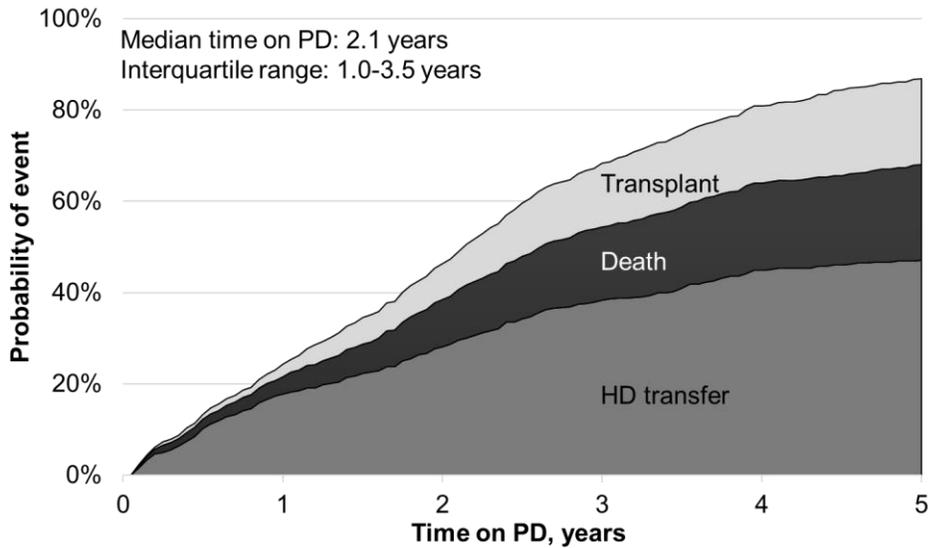
Supplemental Table 5. Adjusted hazard ratio for other facility factors, overall and by country, for outcomes of: A) death or HD transfer, B) HD transfer, C) for death. Models were left truncated based on PD vintage, and accounting for facility clustering. Facility factors were evaluated one at a time, adjusted for patient factors including: age, sex, BMI, Black race, heart disease, diabetes, psychiatric disorder, prior HD experience, urine volume, albumin, care giver involvement, transplant waitlist referred.

Supplemental Figure 3. Crude event rates by country and by PD vintage, A) permanent transfer to HD or death, B) permanent transfer to HD, C) death. Number of patients at risk for each PD vintage group see table below.

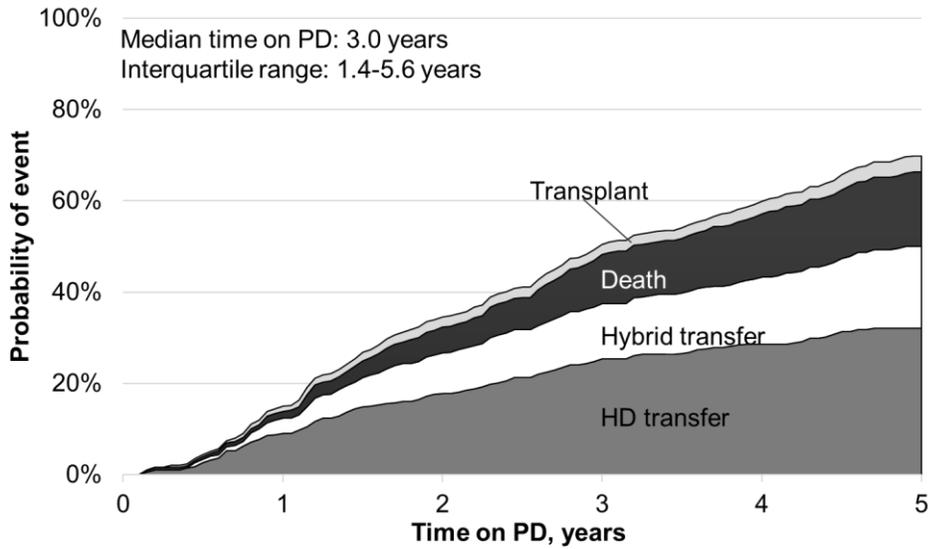
Supplemental Figure 1A. Cumulative incident curve of death, HD transfer, and transplant, in A/NZ, including all temporary transfer as HD transfer event.



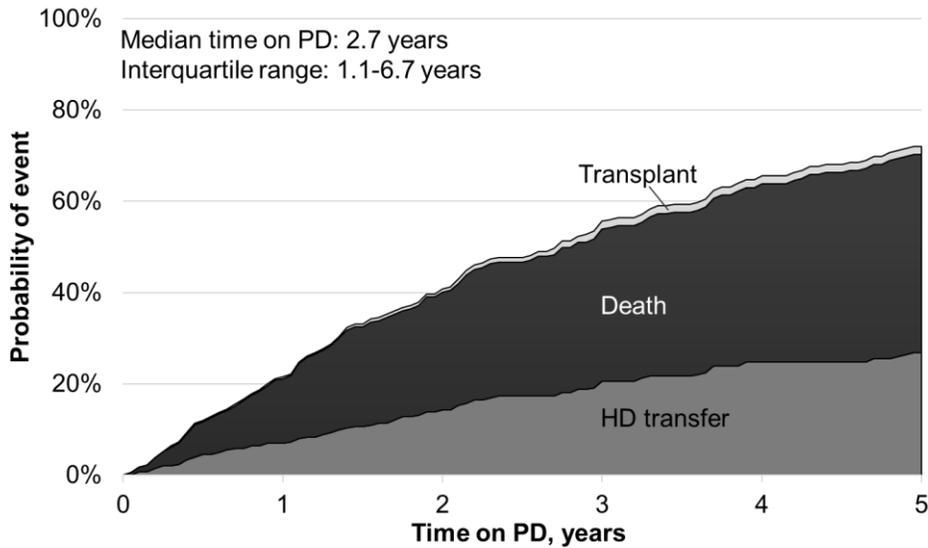
Supplemental Figure 1B. Cumulative incident curve of death, HD transfer, and transplant, in Canada, including all temporary transfer as HD transfer event.



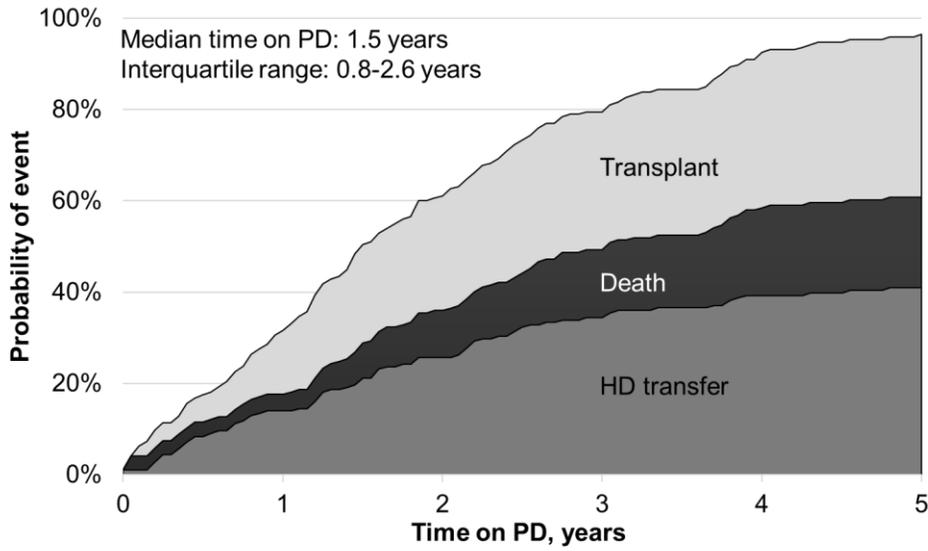
Supplemental Figure 1C. Cumulative incident curve of death, HD transfer, and transplant, in Japan, including all temporary transfer as HD transfer event.



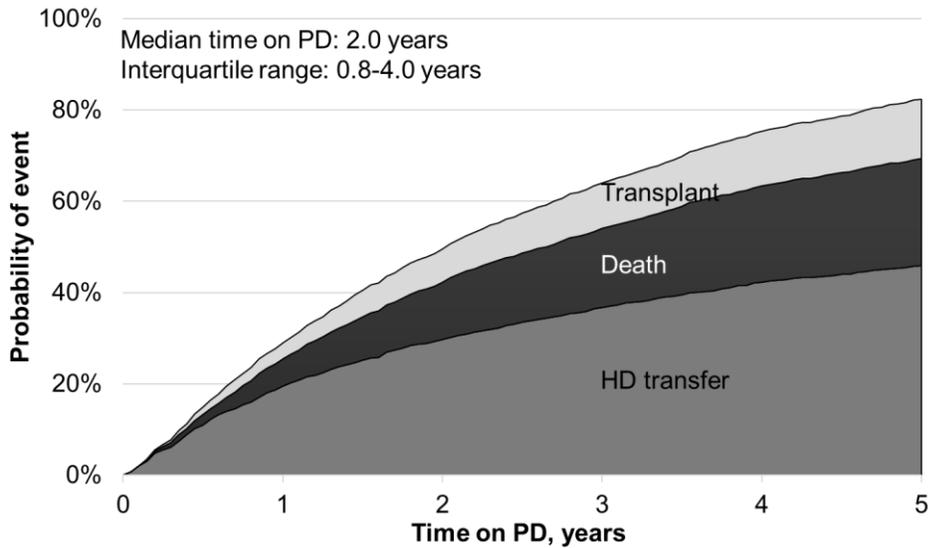
Supplemental Figure 1D. Cumulative incident curve of death, HD transfer, and transplant, in Thailand, including all temporary transfer as HD transfer event.



Supplemental Figure 1E. Cumulative incident curve of death, HD transfer, and transplant, in UK, including all temporary transfer as HD transfer event.

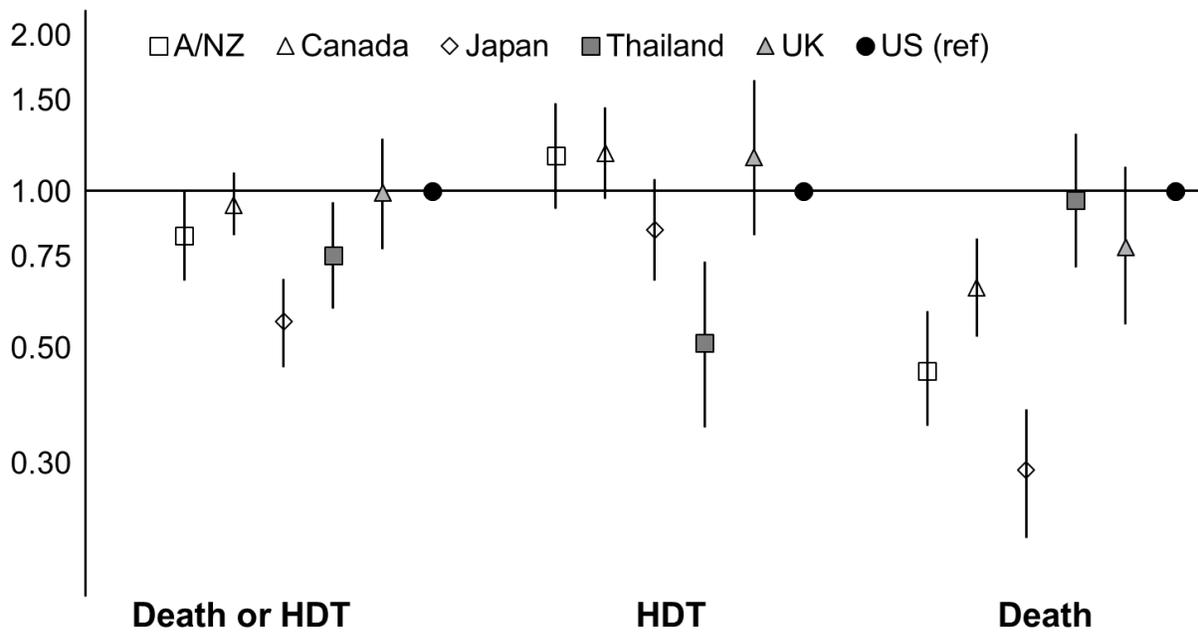


Supplemental Figure 1F. Cumulative incident curve of death, HD transfer, and transplant, in US, including all temporary transfer as HD transfer event.



Supplemental Figure 2. Hazard ratio of PD discontinuation by country, compare to US, not counting hybrid transfers as transfer to HD events. Hazard ratio was estimated using left truncated Cox model based on PD vintage. Model adjusted for patient age, sex, BMI, black race, heart disease, diabetes, psychiatric disorder, prior HD experience, urine volume, albumin, care giver involvement, transplant waitlist referred, and accounting for facility clustering. Separate models for each outcome.

Hazard Ratio (95% CI)



Supplemental Table 1. Distribution of time on therapy in years by country, based on cumulative incidence curve in Figure 1.

	Lower quartile	Median	Upper quartile
Overall	1.1	2.3	4.4
A/NZ	1.2	2.1	3.7
Can	1.1	2.2	3.7
Jpn	1.5	3.2	6.0
Thai	1.2	2.8	7.1
UK	0.8	1.7	2.9
US	1.0	2.3	4.6

Supplemental Table 2. Hazard ratios for mortality with 95% confidence interval in comparison to the US, showing effects of sequential levels of adjustment.

	No adjustment	+age, gender, black	+comorbidities	+urine volume	+caregiver	+albumin	+BMI
A/NZ	0.91 (0.70-1.19)	0.63 (0.47-0.84)	0.61 (0.47-0.80)	0.61 (0.48-0.79)	0.63 (0.50-0.80)	0.45 (0.35-0.58)	0.45 (0.35-0.58)
Canada	0.93 (0.76-1.16)	0.77 (0.62-0.95)	0.75 (0.61-0.91)	0.77 (0.63-0.94)	0.76 (0.62-0.94)	0.66 (0.53-0.82)	0.66 (0.53-0.82)
Japan	0.49 (0.37-0.65)	0.36 (0.28-0.47)	0.37 (0.27-0.49)	0.37 (0.28-0.49)	0.38 (0.29-0.51)	0.29 (0.22-0.39)	0.29 (0.21-0.38)
Thailand	1.64 (1.32-2.04)	1.72 (1.36-2.18)	1.79 (1.35-2.36)	1.62 (1.22-2.15)	1.27 (0.94-1.73)	0.99 (0.73-1.33)	0.96 (0.71-1.30)
UK	1.05 (0.81-1.37)	0.79 (0.61-1.02)	0.93 (0.71-1.23)	0.99 (0.76-1.30)	0.93 (0.71-1.22)	0.78 (0.55-1.10)	0.78 (0.55-1.11)

Supplemental Table 3. Detailed reason among 111 patients with solute clearance as reason for HD transfer.

Detailed reason	percent
Inadequate clearance – defined by either Kt/V or creatinine clearance	59%
Inadequate clearance – phosphate clearance	6%
Uraemic symptoms/poor nutrition	23%
Clinical signs of poor nutrition	4%
TN: Hypoalbuminemia	1%
Patient size	1%
UF failure- PET defined	4%
Unwillingness to prescribe more dialysate glucose to achieve sufficient UF	3%

Supplemental Table 4A. Hazard ratio for patient characteristics.

	Death or HD transfer	HD transfer	Death
Patient age, per 10 years	1.05 (1.01-1.09)	0.93 (0.89-0.97)	1.32 (1.24-1.39)
Male sex	1.21 (1.11-1.32)	1.23 (1.10-1.38)	1.20 (1.04-1.39)
Cardiovascular disease	1.29 (1.17-1.42)	1.10 (0.97-1.24)	1.73 (1.48-2.03)
Diabetes	1.20 (1.09-1.31)	1.17 (1.02-1.34)	1.29 (1.12-1.48)
Prior HD	1.09 (0.95-1.26)	0.97 (0.80-1.18)	1.31 (1.10-1.56)
Urine volume, per 1 L	0.86 (0.80-0.93)	0.85 (0.77-0.94)	0.86 (0.75-0.99)
Caregiver(s) involved in PD exchanges	1.18 (1.04-1.34)	0.86 (0.70-1.06)	1.57 (1.30-1.91)
Albumin, per 1 g/dL	0.50 (0.45-0.56)	0.59 (0.51-0.67)	0.39 (0.34-0.46)
Transplant waitlist referred	0.94 (0.83-1.06)	1.13 (0.97-1.32)	0.62 (0.49-0.78)
Psychiatric disorder	1.21 (1.09-1.35)	1.21 (1.07-1.38)	1.23 (1.02-1.49)
BMI < 20 kg/m ²	1.03 (0.86-1.23)	0.81 (0.65-1.03)	1.38 (1.06-1.78)
BMI 30+ kg/m ²	1.21 (1.08-1.35)	1.28 (1.11-1.47)	1.12 (0.93-1.36)
Black race	0.88 (0.77-1.00)	0.97 (0.81-1.16)	0.75 (0.59-0.94)

Models were left truncated based on PD vintage, and accounting for facility clustering. Model adjusted for all patient level factors in the table.

Supplemental Table 4B. Adjusted hazard ratio of facility factors.

	Death or HD transfer	HD transfer	Death
Facility size type within country	1.00 (0.99-1.01)	0.99 (0.98-1.00)	1.01 (1.00-1.02)
Small	0.88 (0.78-1.00)	0.91 (0.77-1.08)	0.81 (0.68-0.97)
Medium	1 (ref)	1 (ref)	1 (ref)
Large	0.94 (0.83-1.05)	0.91 (0.79-1.06)	0.97 (0.82-1.14)
Facility age			
<5 years	0.96 (0.73-1.27)	0.91 (0.63-1.30)	1.10 (0.80-1.52)
5-9 years	1.05 (0.90-1.21)	1.07 (0.88-1.28)	1.07 (0.85-1.33)
10+ years	1 (ref)	1 (ref)	1 (ref)
Patient nurse ratio within country			
Small	0.94 (0.84-1.06)	0.91 (0.79-1.04)	0.99 (0.83-1.18)
Medium	1 (ref)	1 (ref)	1 (ref)
Large	0.95 (0.83-1.09)	0.89 (0.75-1.07)	1.02 (0.85-1.21)
Routine multidisciplinary review	0.92 (0.83-1.03)	0.88 (0.77-1.01)	0.98 (0.83-1.15)
Facility % of patients with total Kt/V urea < 1.7			
<10%	1.02 (0.88-1.18)	1.03 (0.85-1.25)	0.98 (0.80-1.19)
10-19%	1 (ref)	1 (ref)	1 (ref)
20%+	1.07 (0.90-1.27)	1.01 (0.82-1.25)	1.18 (0.89-1.56)
Facility % of patients use 3.86% solution			
0%	1 (ref)	1 (ref)	1 (ref)
1-19%	0.96 (0.82-1.13)	0.87 (0.68-1.10)	1.15 (0.92-1.43)
20%+	1.00 (0.83-1.20)	0.83 (0.67-1.04)	1.24 (0.93-1.65)

Models were left truncated based on PD vintage, and accounting for facility clustering. Model adjusted for all patient level factors in Figure 4A.

Supplemental Table 5. Adjusted hazard ratio for other facility factors, overall and by country, for outcomes of: A) death or HD transfer, B) HD transfer, C) for death. Models were left truncated based on PD vintage, and accounting for facility clustering. Facility factors were evaluated one at a time, adjusted for patient factors including: age, sex, BMI, Black race, heart disease, diabetes, psychiatric disorder, prior HD experience, urine volume, albumin, care giver involvement, transplant waitlist referred.

Supplemental Table 5a: Death or HD transfer

	A/NZ	Canada	Japan	Thailand	UK	US	p value for interaction with country
Facility size type within country	0.99 (0.96,1.02)	1.00 (0.98,1.02)	1.00 (0.95,1.05)	1.00 (0.99,1.01)	0.90 (0.80,1.00)	1.00 (0.98,1.03)	0.49
Small	1.12 (0.69,1.82)	0.76 (0.61,0.95)	0.94 (0.58,1.52)	0.82 (0.47,1.42)	1.43 (0.90,2.27)	0.87 (0.74,1.01)	0.31
Medium	1 (ref)						
Large	0.94 (0.63,1.40)	0.85 (0.64,1.13)	0.96 (0.68,1.35)	--	0.70 (0.44,1.11)	0.97 (0.82,1.14)	
Facility age, per 5 years	1.01 (0.91,1.13)	0.99 (0.95,1.04)	1.05 (0.94,1.17)	0.97 (0.85,1.11)	0.91 (0.77,1.07)	1.04 (0.99,1.09)	0.51
Facility % of patients use 3.86% solution							0.00
0%	1 (ref)						
1-19%	0.92 (0.64,1.32)	0.82 (0.64,1.04)	--	1.21 (0.85,1.72)	--	1.45 (1.07,1.96)	
20%+	0.79 (0.64,0.99)	0.91 (0.71,1.18)	--	0.97 (0.61,1.53)	--	1.50 (1.21,1.87)	
Patient nurse ratio within country							0.15
Small	0.65 (0.42,1.02)	1.08 (0.87,1.34)	0.71 (0.47,1.09)	1.21 (0.68,2.14)	0.85 (0.55,1.31)	1.00 (0.87,1.14)	
Medium	1 (ref)						
Large	0.88 (0.60,1.29)	1.03 (0.73,1.43)	0.79 (0.56,1.12)	1.18 (0.82,1.71)	0.54 (0.34,0.86)	1.02 (0.82,1.27)	
Routine multidisciplinary review	1.00 (0.72,1.39)	1.04 (0.82,1.31)	1.10 (0.83,1.47)	0.76 (0.51,1.11)	0.56 (0.35,0.91)	0.88 (0.77,1.01)	0.16
Facility % of patients with total Kt/V urea < 1.7							0.98

<10%	0.96 (0.53,1.76)	--	--	1.08 (0.46,2.56)	1.22 (0.56,2.68)	1.02 (0.87,1.21)
10-19%	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)	1 (ref)
20%+	0.82 (0.50,1.35)	--	--	1.00 (0.55,1.83)	1.52 (0.65,3.55)	1.14 (0.87,1.49)

*For facility size and patient nurse ratio, small \leq q1, large \geq q3, medium q1-q3, within country. Median IQR were listed in table 1B.

Supplemental Table 5B :HD transfer

	A/NZ	Canada	Japan	Thailand	UK	US	p value for interaction with country
Facility size type within country	0.97 (0.94,1.00)	0.99 (0.97,1.02)	1.00 (0.95,1.04)	1.00 (0.97,1.02)	0.83 (0.71,0.96)	1.00 (0.97,1.03)	0.18
Small	1.14 (0.66,1.97)	0.86 (0.59,1.24)	0.99 (0.62,1.59)	0.95 (0.38,2.37)	1.78 (0.94,3.38)	0.81 (0.66,1.01)	0.29
Medium	1 (ref)						
Large	0.83 (0.53,1.30)	0.83 (0.55,1.25)	0.98 (0.70,1.39)	--	0.59 (0.29,1.21)	0.97 (0.79,1.19)	
Facility age, per 5 years	1.00 (0.89,1.13)	0.97 (0.92,1.02)	1.07 (0.95,1.21)	0.96 (0.79,1.17)	0.83 (0.66,1.04)	1.05 (0.99,1.11)	0.13
Facility % of patients use 3.86% solution							0.19
0%	1 (ref)						
1-19%	0.90 (0.60,1.36)	0.70 (0.48,1.03)	--	1.03 (0.60,1.77)	--	1.34 (0.96,1.86)	
20%+	0.78 (0.59,1.03)	0.70 (0.50,0.98)	--	0.71 (0.40,1.25)	--	1.26 (0.91,1.72)	
Patient nurse ratio within country							0.22
Small	0.74 (0.42,1.31)	0.82 (0.62,1.07)	0.70 (0.46,1.07)	1.00 (0.43,2.36)	1.42 (0.79,2.55)	1.02 (0.84,1.22)	
Medium	1 (ref)						
Large	0.86 (0.54,1.35)	0.89 (0.53,1.49)	0.73 (0.49,1.10)	0.83 (0.46,1.50)	0.61 (0.26,1.44)	1.07 (0.83,1.38)	
Routine multidisciplinary review	1.03 (0.70,1.49)	0.95 (0.68,1.34)	1.04 (0.77,1.41)	0.56 (0.33,0.93)	0.55 (0.26,1.19)	0.83 (0.69,0.99)	0.24
Facility % of patients with total Kt/V urea < 1.7							0.99
<10%	0.99 (0.48,2.05)	--	--	1.16 (0.24,5.49)	1.26 (0.38,4.15)	1.03 (0.84,1.26)	
10-19%	1 (ref)						
20%+	0.80 (0.48,1.33)	--	--	1.13 (0.43,2.93)	1.61 (0.52,4.96)	0.95 (0.71,1.27)	

*For facility size and patient nurse ratio, small \leq q1, large \geq q3, medium q1-q3, within country. Median IQR were listed in table 1B.

Supplemental Table 5C: Death

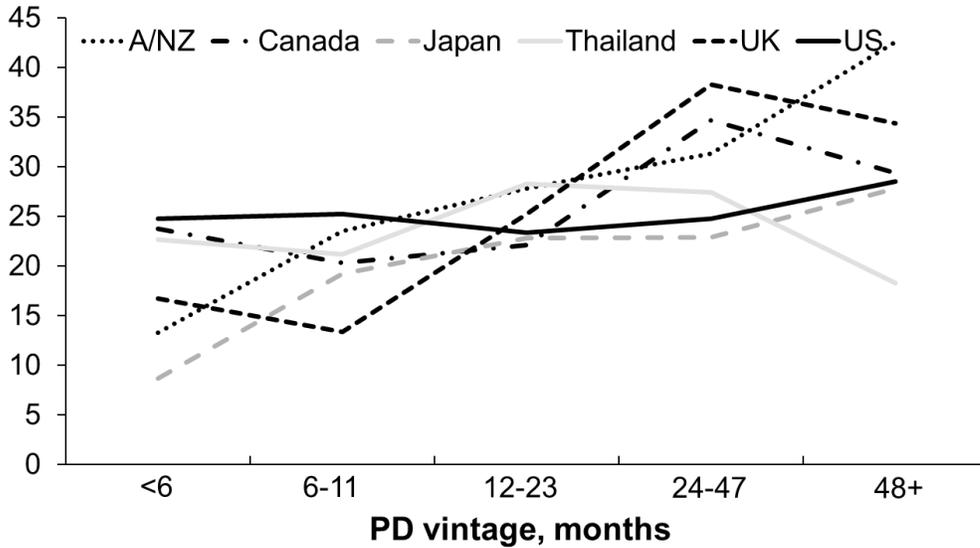
	A/NZ	Canada	Japan	Thailand	UK	US	p value for interaction with country
Facility size type within country	1.03 (1.00,1.06)	1.01 (0.98,1.05)	1.02 (0.95,1.09)	1.00 (0.99,1.01)	1.03 (0.85,1.23)	1.02 (0.98,1.05)	0.59
Small	0.99 (0.61,1.62)	0.55 (0.37,0.81)	0.77 (0.38,1.56)	0.68 (0.41,1.14)	0.98 (0.32,2.98)	0.95 (0.78,1.17)	0.52
Medium	1 (ref)						
Large	1.10 (0.69,1.76)	0.92 (0.61,1.39)	0.84 (0.52,1.37)	--	0.90 (0.44,1.84)	0.98 (0.76,1.27)	
Facility age, per 5 years	1.04 (0.90,1.20)	1.05 (0.96,1.13)	0.97 (0.84,1.12)	0.93 (0.80,1.08)	1.04 (0.77,1.40)	1.02 (0.95,1.11)	0.84
Facility % of patients use 3.86% solution							0.09
0%	1 (ref)						
1-19%	1.00 (0.64,1.57)	1.06 (0.71,1.58)	--	1.40 (0.89,2.18)	--	1.66 (0.88,3.13)	
20%+	0.79 (0.53,1.18)	1.45 (0.91,2.31)	--	1.12 (0.66,1.88)	--	1.90 (1.25,2.89)	
Patient nurse ratio within country							<.0001
Small	0.47 (0.30,0.72)	1.71 (1.23,2.37)	0.95 (0.52,1.76)	1.09 (0.59,2.03)	0.28 (0.09,0.84)	0.97 (0.79,1.19)	
Medium	1 (ref)						
Large	0.89 (0.59,1.36)	1.35 (0.91,2.01)	1.15 (0.78,1.69)	1.22 (0.79,1.88)	0.40 (0.22,0.71)	0.93 (0.69,1.25)	
Routine multidisciplinary review	0.98 (0.62,1.55)	1.22 (0.85,1.74)	1.19 (0.74,1.90)	0.80 (0.51,1.25)	0.53 (0.25,1.12)	0.98 (0.76,1.26)	0.39
Facility % of patients with total Kt/V urea < 1.7							0.87
<10%	0.86 (0.34,2.20)	--	--	0.99 (0.46,2.14)	1.20 (0.36,3.98)	1.01 (0.80,1.27)	
10-19%	1 (ref)						
20%+	0.87 (0.44,1.72)	--	--	0.97 (0.50,1.90)	1.46 (0.41,5.13)	1.53 (0.97,2.41)	

*For facility size and patient nurse ratio, small \leq q1, large \geq q3, medium q1-q3, within country. Median IQR were listed in table 1B.

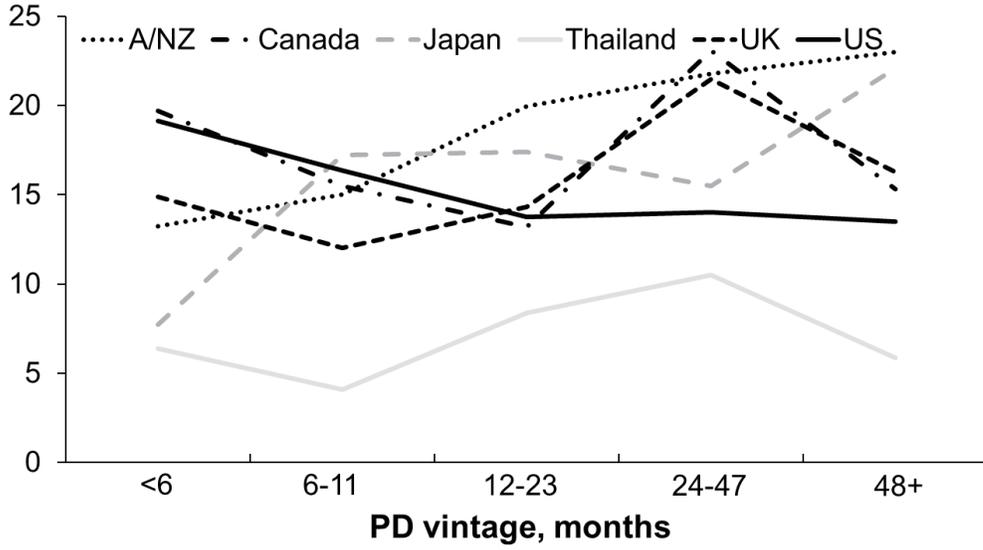
Supplemental Figure 3. Crude event rates by country and by PD vintage, A) permanent transfer to HD or death, B) permanent transfer to HD, C) death. Number of patients at risk for each PD vintage group see table below.

	PD vintage, months				
	<6	6-11	12-23	24-47	48+
A/NZ	186	322	349	237	81
Canada	404	559	626	511	180
Japan	283	405	472	443	274
Thailand	360	423	351	300	166
UK	166	200	208	142	55
US	1185	1885	2048	1599	732

Rate of death or HDT, per 100 patient years



**Rate of HDT,
per 100 patient years**



**Rate of death,
per 100 patient years**

