

**Capacity for the management of kidney failure in the International Society of Nephrology Oceania and South East Asia (OSEA) region: Report from the 2023 ISN Global Kidney Health Atlas (ISN-GKHA)**

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**Table S1.** Burden of CKD in the ISN OSEA region.<sup>27</sup>

Country/Territory	CKD Prevalence % (95% CI)	Death attributed to CKD % (95% CI)	DALYS attributed to CKD % (95% CI)
<b>Global (median [IQR])</b>	9.5 (5.9-11.7)	2.4 (1.6-3.9)	1.6 (1.5-1.8)
<b>OSEA region (median [IQR])</b>	10.4 (9.1-10.3)	3.4 (2.7-4.2)	2.4 (1.97-2.96)
<b>Australia</b>	10.83 (10.17 - 11.51)	3.05 (2.53 - 3.44)	1.38 (1.2 - 1.56)
<b>Brunei Darussalam</b>	8.42 (7.73 - 9.12)	4.16 (3.88 - 4.45)	2.44 (2.16 - 2.73)
<b>Cambodia</b>	8.20 (7.58 - 8.88)	1.98 (1.77 - 2.18)	1.55 (1.38 - 1.73)
<b>Fiji</b>	10.73 (9.91 - 11.54)	3.94 (3.61 - 4.3)	3.1 (2.79 - 3.39)
<b>Indonesia</b>	10.34 (9.54 - 11.18)	2.47 (2.35 - 2.6)	2.12 (1.93 - 2.32)
<b>Lao PDR</b>	8.55 (7.89 - 9.25)	3.85 (3.36 - 4.54)	2.54 (2.21 - 2.96)
<b>Malaysia</b>	10.54 (9.79 - 11.31)	3.47 (3.12 - 3.82)	2.5 (2.2 - 2.79)
<b>Myanmar</b>	10.12 (9.35 - 10.93)	2.74 (2.55 - 3.03)	2.25 (2.06 - 2.46)
<b>New Caledonia</b>	-	-	-
<b>New Zealand</b>	11.08 (10.28 - 11.87)	2.65 (2.31 - 2.91)	1.48 (1.29 - 1.65)
<b>Philippines</b>	9.54 (8.83 - 10.23)	5.22 (4.97 - 5.59)	3.52 (3.14 - 3.9)
<b>Samoa</b>	9.08 (8.41 - 9.78)	4.49 (3.93 - 5.15)	3.4 (2.93 - 3.88)
<b>Singapore</b>	13.86 (12.87 - 14.84)	3.26 (2.84 - 3.56)	1.93 (1.7 - 2.16)
<b>Thailand</b>	16.67 (15.51 - 17.85)	5.51 (4.9 - 6.01)	3.5 (3.05 - 3.95)
<b>Vietnam</b>	10.74 (9.89 - 11.59)	3.4 (2.79 - 3.81)	2.36 (1.99 - 2.68)

Abbreviations: ISN, International Society of Nephrology; OSEA, Oceania and South East Asia; CKD, chronic kidney disease; DALYs, disability-adjusted life years, CI, confidence interval; IQR, interquartile range  
‘ - ’ : data not reported/unavailable

**Table S2.** Funding for KRT in the ISN OSEA region.

Country/Territory	Publicly funded (free)				Publicly funded (some fees)				Mixed				Solely private (out-of-pocket)				Solely private (health insurance)				Multiple systems				N/A			
	AKI	HD	PD	TX	AKI	HD	PD	TX	AKI	HD	PD	TX	AKI	HD	PD	TX	AKI	HD	PD	TX	AKI	HD	PD	TX	AKI	HD	PD	TX
<b>American Samoa</b>																												
<b>Australia</b>	X	X		X							X																	
<b>Brunei Darussalam</b>	X	X	X	X																								
<b>Cambodia</b>															X	X					X	X						
<b>Fiji</b>															X					X	X	X						
<b>Indonesia</b>	X					X	X	X																				
<b>Lao PDR</b>					X	X																				X	X	
<b>Malaysia</b>									X	X	X	X																
<b>Myanmar</b>	X									X		X			X													
<b>New Caledonia</b>									X	X	X	X																
<b>New Zealand</b>	X	X	X	X																								
<b>Papua New Guinea</b>														X	X	X	X											
<b>Philippines</b>					X	X	X																			X		
<b>Samoa</b>						X			X																	X	X	
<b>Singapore</b>									X			X									X	X						
<b>Solomon Islands</b>																									X	X	X	X
<b>Thailand</b>					X	X	X	X																				
<b>Vanuatu</b>														X	X	X	X											
<b>Vietnam</b>					X	X	X	X																				

X: Yes

Abbreviations: KRT, kidney replacement therapy; ISN, International Society of Nephrology; OSEA, Oceania and South East Asia; AKI, acute kidney injury; HD, hemodialysis; PD, peritoneal dialysis; TX, transplant medications; PDR, People’s Democratic Republic

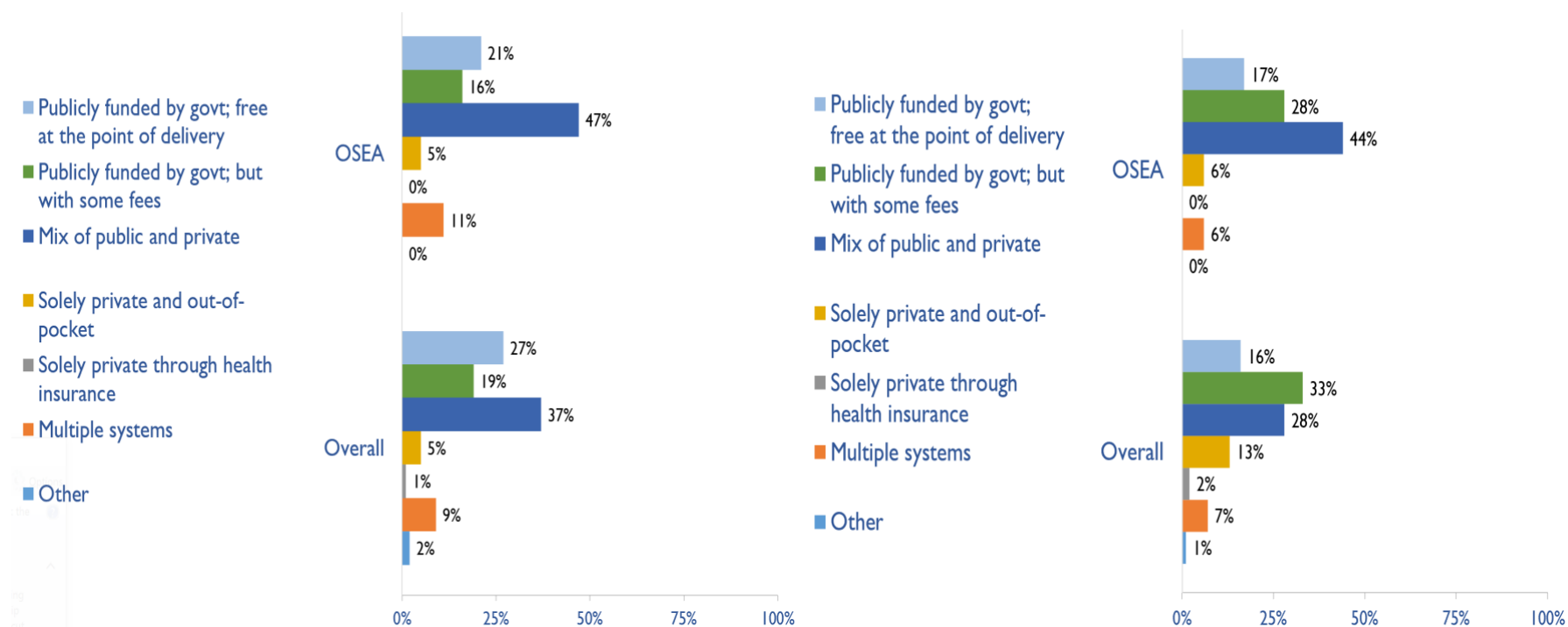
**Table S3.** Workforce and KRT centers per million population (pmp) for medical kidney care in the ISN OSEA region.

Country/ Territory	Dialysis & Transplant Centers (pmp 2023*)			Nephrology Workforce (pmp)				
	HD	PD	Tx	Nephrologists		Pediatric Nephrologists	Trainees	
				2019*	2023*	2023*	2019*	2023*
<b>Global (median [IQR])</b>	5.1 [1.6-11.1]	1.6 [0.45-3.1]	0.46[0.23-0.75]	10.0 [1.2-22.7]	11.8 [1.8-24.8]	0.69	1.4 [0.35-3.7]	1.2 [0.18-3.8]
<b>OSEA region (median [IQR])</b>	5.5 [1.7-13.2]	1.5 [0.45-3.2]	0.34 [0.17-0.59]	5.7 [1.1-16.6]	3.2 [0.61-12.9]	0.13	1.1 [0.3-4.5]	0.96 [0.2-3.9]
<b>American Samoa</b>	-	-	-	-	-	-	-	-
<b>Australia</b>	3.56	2.33	0.57	21.3	23.11	-	5.2	5.74
<b>Brunei Darussalam</b>	14.64	4.18	2.09	28.85	12.55	-	11.1	6.28
<b>Cambodia</b>	0.9	-	-	0.91	1.02	-	0.3	0.3
<b>Fiji</b>	8.48	1.06	-	1.08	3.18	-	1.08	1.06
<b>Indonesia</b>	3.75	0.14	0.03	0.49	0.8	-	0.23	0.2
<b>Lao PDR</b>	2.45	-	-	-	1.03	-	11.34	1.03
<b>Malaysia</b>	27.16	1.48	0.18	5.66	5.9	-	1.1	0.89
<b>Myanmar</b>	0.7	0.02	0.12	0.49	0.61	-	0.31	0.26
<b>New Caledonia</b>	40.38	3.37	3.37	40.67	33.65	-	0	6.73
<b>New Zealand</b>	3.17	3.17	0.59	15.4	12.86	-	4.51	3.96
<b>Papua New Guinea</b>	0.21	-	-	-	-	-	-	-
<b>Philippines</b>	7.31	0.45	0.28	-	-	-	-	-
<b>Samoa</b>	9.7	-	-	-	-	-	-	-
<b>Singapore</b>	13.51	1.35	0.34	-	-	-	-	-
<b>Solomon Islands</b>	-	-	-	-	-	-	-	-
<b>Thailand</b>	12.92	1.72	0.43	-	-	-	-	-
<b>Vanuatu</b>	-	3.25	-	-	-	-	-	-
<b>Vietnam</b>	0.96	0.29	0.17	-	-	-	-	-

Abbreviations: KRT, kidney replacement therapy; ISN, International Society of Nephrology; OSEA, Oceania and South East Asia; HD, hemodialysis; PD, peritoneal dialysis; Tx, kidney transplant; PDR, People's Democratic Republic; IQR, interquartile range.

\*ISN-GKHA report year

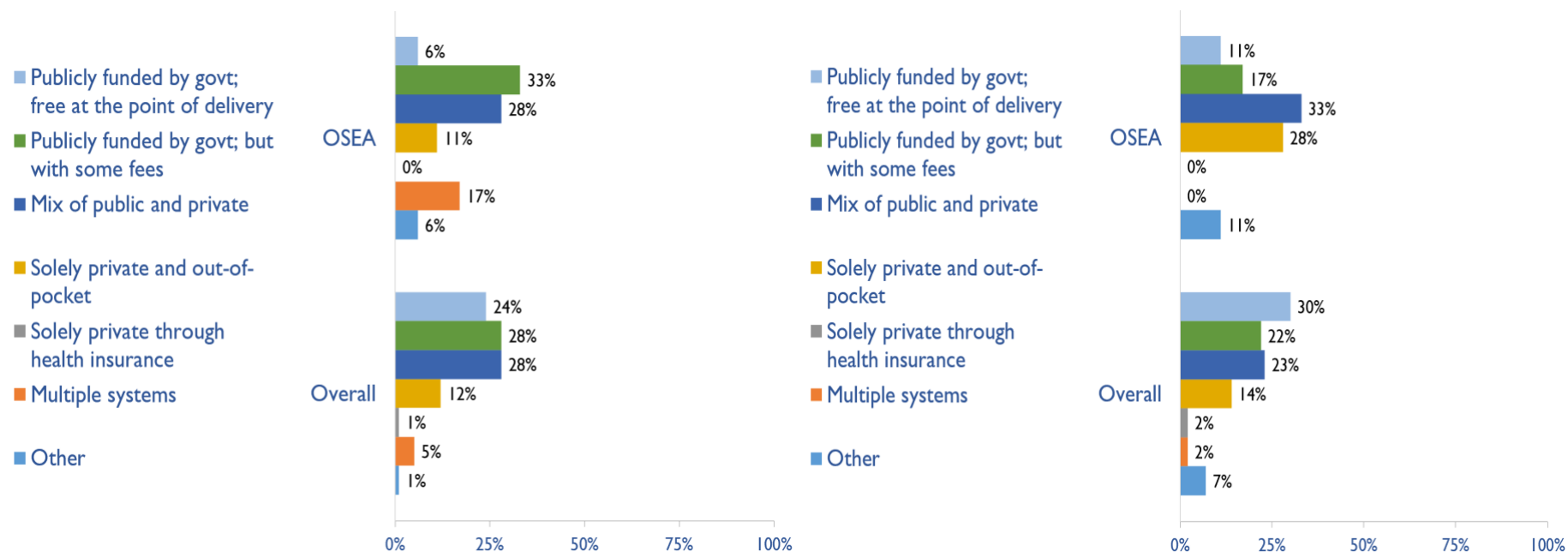
**Figure S1.** Funding for non-dialysis CKD (left) care and (right) medications in the ISN OSEA region.\*



\*Values represent absolute number of countries in each category expressed as a percentage of total number of countries.

Abbreviations: CKD, chronic kidney disease; ISN, International Society of Nephrology; OSEA, Oceania and South East Asia; gov't, government

**Supplementary Figure S2.** Funding for dialysis (left) and transplant (right) medications in the ISN OSEA region.\*



\*Values represent absolute number of countries in each category expressed as a percentage of total number of countries.

Abbreviations: ISN, International Society of Nephrology; OSEA, Oceania and South East Asia; gov't, government

**Figure S3.** Workforce shortages for medical kidney care in the ISN OSEA region.

Country/Territory	Nephrologists	Pediatric nephrologists	Transplant surgeons	Surgeons (HD access)	Surgeons (PD access)	Dietitians	Laboratory technicians	Radiologists (ultrasound)	Vascular access coordinators	Counsellors/psychologists	Transplant coordinators	Dialysis nurses	Renal nurses	Dialysis technicians	Social workers	Palliative care physicians	Kidney supportive care nurses
Australia	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage
Brunei Darussalam	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage
Cambodia	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	Shortage	Shortage	Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage
Fiji	No Shortage	No Shortage	No Shortage	Shortage	Shortage	No Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage
Indonesia	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage
Lao PDR	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage
Malaysia	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage
Myanmar	Shortage	No Shortage	No Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage
New Caledonia	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	Shortage	Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage
New Zealand	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage
Philippines	No Shortage	No Shortage	Shortage	Shortage	Shortage	No Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage
Samoa	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage
Singapore	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage
Thailand	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage	No Shortage
Vietnam	No Shortage	No Shortage	No Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage

Abbreviations: ISN, International Society of Nephrology; OSEA, Oceania and South East Asia; HD, hemodialysis; PD, peritoneal dialysis; PDR, People’s Democratic Republic

**Legend:**

No Shortage



Shortage

