

ISN-GKHA: Structures, organization, and services for the management of kidney failure in the Middle East

Supplementary Tables, Figures, and Appendix

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Table S1: Burden of chronic kidney disease and its risk factors in countries of the ISN Middle East region that participated in the ISN-GKHA survey.^{S1, S2}

Country	CKD prevalence % (95% CI)	Death attributed to CKD % (95% CI)	DALYs attributed to CKD % (95% CI)	Obesity % (95% CI)	Increased BP % (95% CI)
Bahrain	9.28 (8.4 - 10.12)	4.00 (3.59 - 4.32)	1.88 (1.64 - 2.13)	28.7 (23.5 - 34.2)	21.4 (15.7 - 27.8)
Iran, Islamic Republic	10.57 (9.78 - 11.48)	2.67 (2.47 - 2.78)	1.50 (1.38 - 1.63)	25.5 (22.2 - 28.9)	19.7 (15.2 - 24.6)
Iraq	7.38 (6.85 - 7.99)	3.09 (2.82 - 3.31)	1.55 (1.41 - 1.69)	27.4 (22.7 - 32.4)	25.2 (19.1 - 31.6)
Jordan	7.37 (6.84 - 7.99)	4.66 (4.22 - 5.05)	2.00 (1.76 - 2.24)	33.4 (29.0 - 37.9)	21.0 (15.8 - 26.9)
Kuwait	8.39 (7.74 - 9.12)	2.29 (2.1 - 2.6)	1.27 (1.12 - 1.43)	37.0 (32.2 - 42.0)	23.6 (17.9 - 30.0)
Lebanon	8.31 (7.7 - 9.07)	1.77 (1.59 - 1.99)	1.14 (1.02 - 1.27)	31.3 (26.2 - 36.6)	20.7 (15.4 - 26.8)
Oman	7.42 (6.82 - 8.07)	2.26 (1.84 - 2.5)	1.29 (1.14 - 1.45)	22.9 (18.3 - 27.9)	24.8 (18.9 - 31.5)
Qatar	7.13 (6.46 - 7.79)	3.07 (2.6 - 3.33)	1.3 (1.13 - 1.48)	33.9 (27.7 - 40.5)	22.4 (16.1 - 29.8)
Saudi Arabia	7.20 (6.64 - 7.82)	4.04 (3.31 - 4.46)	2.02 (1.73 - 2.28)	35.0 (30.5 - 39.5)	23.3 (18.0 - 29.2)
Syrian Arab Republic	8.02 (7.34 - 8.73)	1.97 (1.8 - 2.36)	1.16 (1.05 - 1.29)	25.8 (20.7 - 31.3)	24.5 (18.7 - 30.8)
United Arab Emirates	7.67 (6.94 - 8.42)	3.14 (2.69 - 3.55)	1.80 (1.54 - 2.08)	29.9 (24.0 - 36.0)	21.1 (15.2 - 28.0)
West Bank and Gaza	-	-	-	-	-
Yemen	5.24 (4.85 - 5.71)	1.19 (1.08 - 1.35)	0.75 (0.68 - 0.84)	14.1 (10.8 - 17.8)	30.7 (23.3 - 38.7)

Abbreviations: ISN: International Society of Nephrology; GKHA: Global Kidney Health Atlas; CKD: chronic kidney disease; DALYs: disability-adjusted life years; BP: blood pressure; CI: confidence interval

‘-’: Data not reported/unavailable.

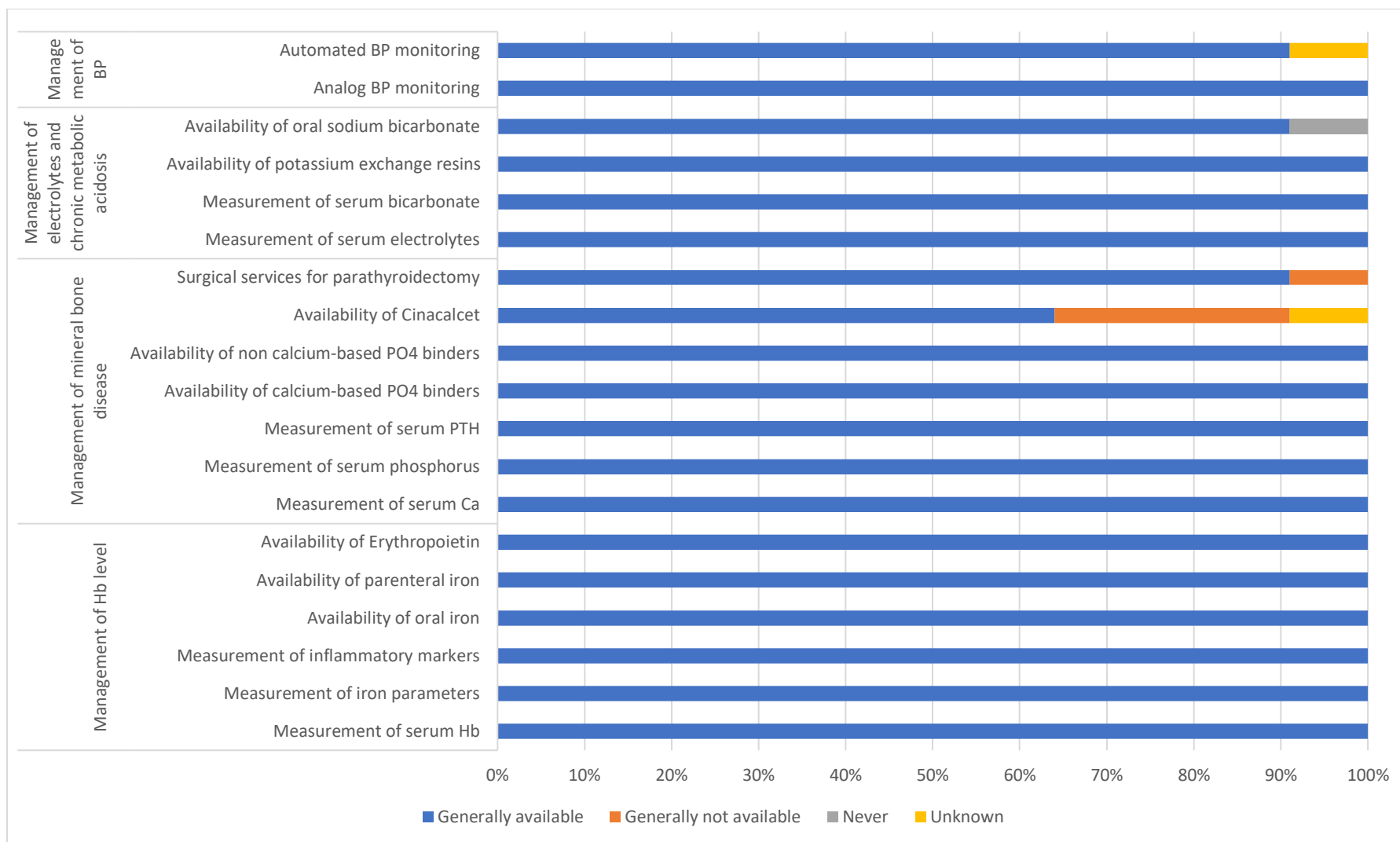
Figure S1: Shortages of kidney failure care providers in the ISN Middle East region.

Country	Nephrologists	Transplant surgeons	Surgeons (HD access)	Surgeons (PD access)	Interventional radiologists (HD access)	Interventional radiologists (PD access)	Laboratory technicians	Dietitians	Radiologists (ultrasound)	Vascular access coordinators	Counsellors/psychologists	Transplant coordinators	Dialysis nurses	Dialysis technicians	TOTAL SHORTAGE
Total shortage	8	7	3	2	9	9	5	1	1	8	9	7	5	5	
Iran, Islamic Republic															9
Iraq															1
Jordan															7
Kuwait															5
Lebanon															3
Oman															8
Qatar															5
Saudi Arabia															10
Syrian Arab Republic															12
United Arab Emirates															10
West Bank and Gaza															9

Abbreviations: ISN: International Society of Nephrology; HD: hemodialysis; PD: peritoneal dialysis;

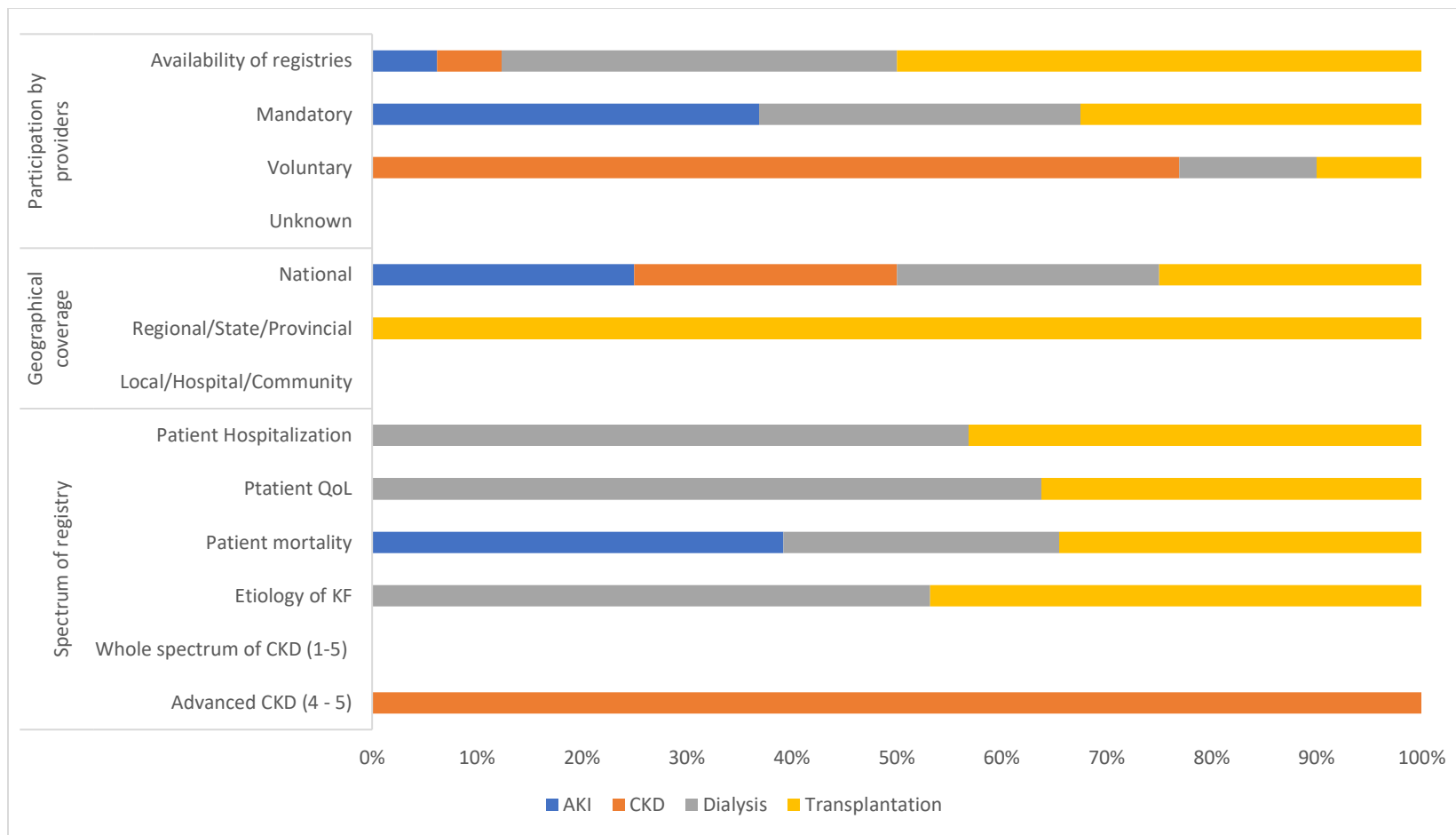
No shortage
Shortage

Figure S2: Availability of services to treat complications of kidney failure.



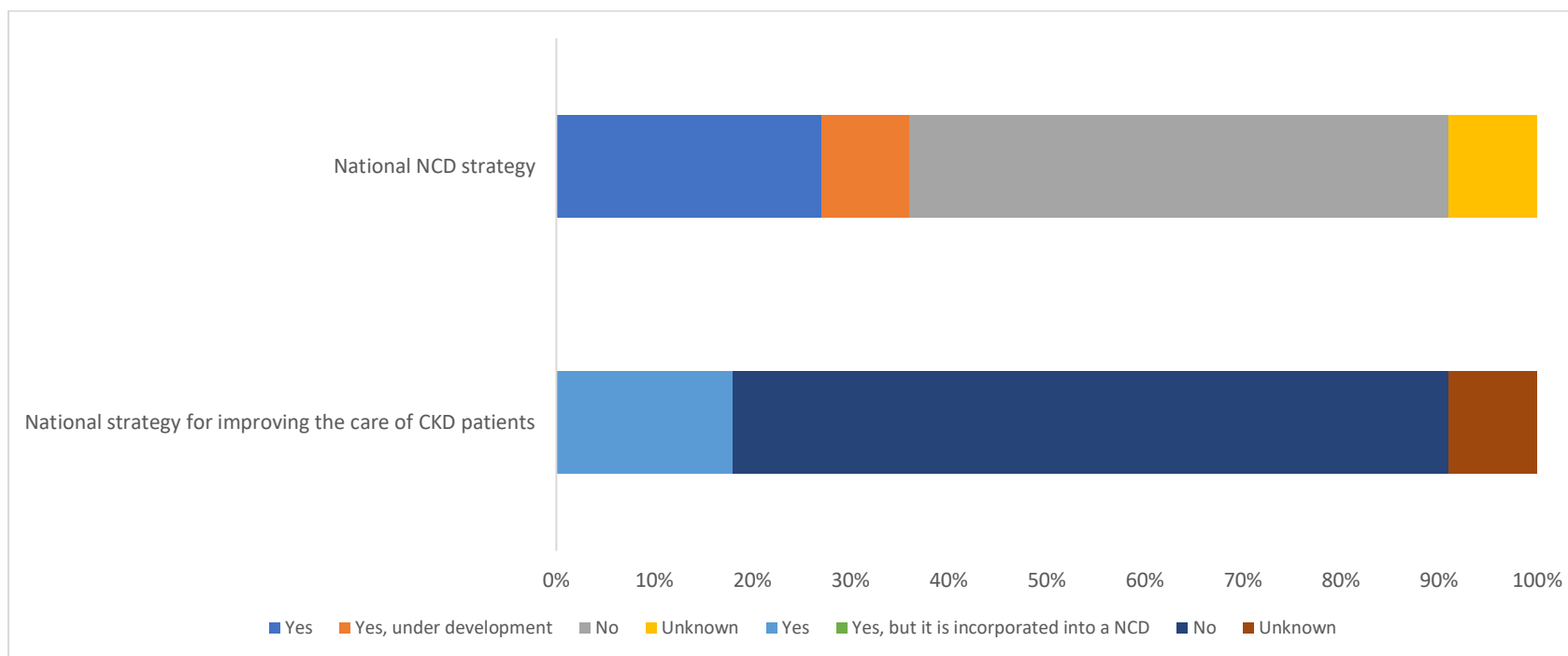
Abbreviations: BP: blood pressure; PO4: phosphate; PTH: parathyroid hormone; Ca: calcium; Hb: hemoglobin

Figure S3: Registry characteristics for countries that reported having one or more registries in the ISN-GKHA survey.



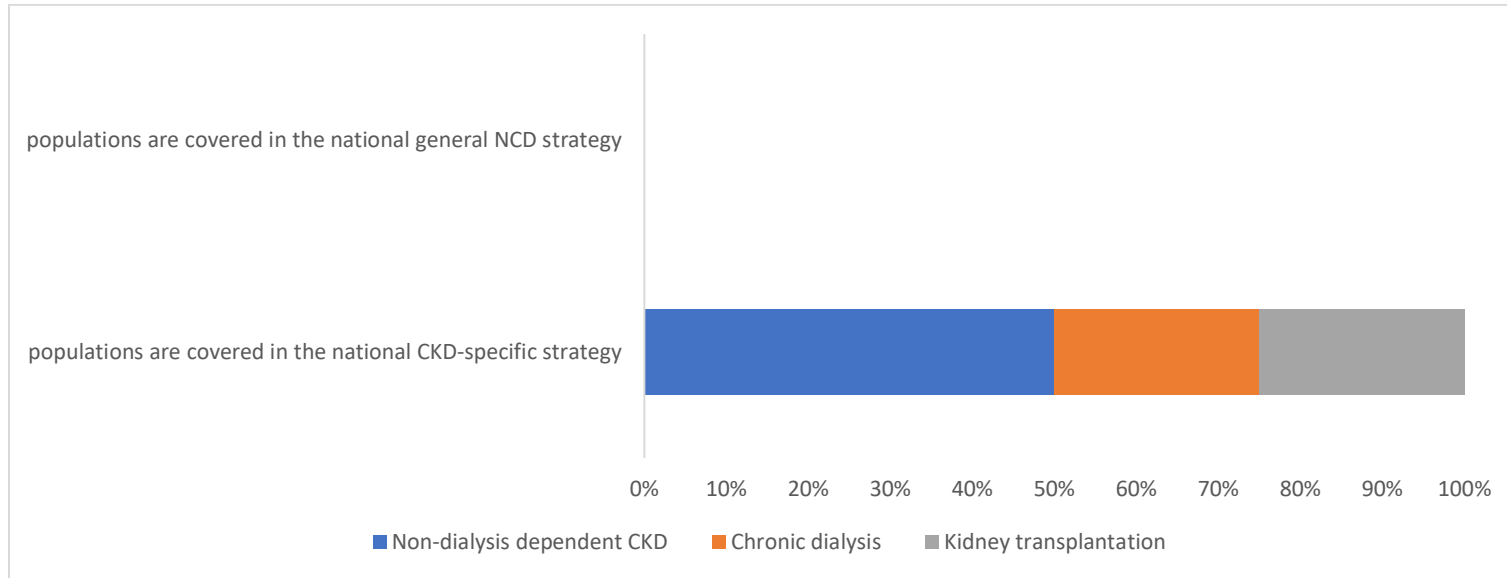
Abbreviations: ISN: International Society of Nephrology; GKHA: Global Kidney Health Atlas; QoL: quality of life; KF: kidney failure; CKD: chronic kidney failure

Figure S4: National strategies available in countries.



Abbreviations: NCD: non-communicable disease; CKD: chronic kidney failure

Figure S5: Population covered under national non-communicable disease and chronic kidney disease strategies.



Abbreviations: NCD: non-communicable disease; CKD: chronic kidney failure

Supplementary References:

- S1. Institute for Health Metrics and Evaluation. Global Burden of Disease Study 2017 (GBD 2017) Data Resources. Available at: <http://ghdx.healthdata.org/gbd-2017>. Accessed August 6, 2020.
- S2. World Health Organization. The Global Health Observatory. Available at: <https://www.who.int/gho/en/>. Published 2019. Accessed: August 6, 2020.

Appendix: Reference list for annual cost of kidney replacement therapy (for Table 1).

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