

## **ISN-GKHA: Structures, organization, and services for the management of kidney failure in Western Europe**

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

**Table S1.** Burden of chronic kidney disease and its risk factors in 21 countries in Western Europe 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)	Smoking % (95% CI)
Austria	10.23 (9.46–11.15)	3.38 (3.23–3.55)	1.52 (1.37–1.67)	21.9 (17.5–26.8)	21.0 (15.7–27.1)	25.2 (22.8–27.8)
Belgium	10.33 (9.53–11.27)	1.93 (1.81–2.05)	1.06 (0.97–1.15)	24.5 (20.7–28.5)	17.5 (12.9–23.0)	18.7 (17.0–20.4)
Denmark	10.14 (9.34–11.03)	1.79 (1.69–1.89)	1.10 (1.00–1.21)	21.3 (17.5–25.3)	20.6 (15.9–25.7)	17.5 (16.0–19.1)
Finland	10.75 (9.94–11.70)	1.03 (0.98–1.09)	0.74 (0.67–0.81)	24.9 (21.2–28.7)	19.4 (15.2–24.1)	16.8 (15.2–18.6)
France	9.88 (9.08–10.79)	1.60 (1.50–1.71)	0.95 (0.86–1.03)	23.2 (18.8–27.8)	22.0 (16.6–27.8)	21.4 (19.3–23.4)
Germany	11.46 (10.56–12.52)	2.82 (2.68–2.99)	1.48 (1.34–1.61)	25.7 (21.9–29.8)	19.9 (14.7–25.1)	21.2 (19.2–23.3)
Greece	11.01 (10.12–12.07)	2.98 (2.82–3.15)	1.75 (1.60–1.91)	27.4 (22.5–32.7)	19.1 (13.8–25.3)	31.2 (28.9–33.5)
Iceland	7.87 (7.28–8.55)	1.21 (1.14–1.30)	0.74 (0.67–0.82)	23.1 (19.1–27.4)	19.7 (14.1–25.9)	14.7 (12.9–16.5)
Ireland	8.68 (8.04–9.41)	1.88 (1.77–2.01)	0.95 (0.86–1.05)	26.9 (22.3–31.7)	19.7 (14.7–25.3)	21.6 (19.2–24.2)
Israel	7.84 (7.27–8.51)	4.91 (4.64–5.21)	2.13 (1.89–2.40)	26.7 (21.9–31.6)	16.6 (11.7–22.4)	17.8 (15.9–20.0)
Italy	10.60 (9.77–11.53)	10.60 (9.77–11.53)	1.27 (1.14–1.39)	22.9 (19.3–26.8)	21.2 (16.2–26.3)	19.4 (17.7–21.4)
Liechtenstein	–	–	–	–	–	–
Luxembourg	9.39 (8.65–10.21)	1.92 (1.77–2.08)	1.03 (0.92–1.14)	24.2 (19.4–29.4)	21.9 (16.3–27.9)	20.9 (18.4–23.6)
Malta	10.91 (10.08–11.87)	2.37 (2.22–2.52)	1.46 (1.31–1.61)	31.0 (25.1–37.0)	19.4 (13.8–25.5)	18.8 (16.6–20.9)
Netherlands	10.64 (9.86–11.56)	1.76 (1.67–1.87)	1.00 (0.91–1.09)	23.1 (19.3–27.0)	18.7 (14.4–23.7)	17.9 (16.2–19.5)
Norway	9.30 (8.65–10.05)	1.43 (1.38–1.48)	0.82 (0.75–0.90)	25.0 (20.9–29.2)	19.7 (14.7–25.0)	15.3 (13.6–17.2)
Portugal	11.44 (10.55–12.42)	2.73 (2.58–2.90)	1.63 (1.48–1.78)	23.2 (18.8–27.8)	24.4 (18.2–31.2)	17.8 (15.9–19.8)
Spain	9.60 (8.83–10.5)	2.55 (2.39–2.71)	1.29 (1.17–1.41)	27.1 (23.2–31.1)	19.2 (14.5–24.6)	21.8 (19.7–24.0)
Sweden	11.84 (11.0–12.85)	1.59 (1.51–1.68)	0.97 (0.88–1.06)	22.1 (18.3–26.0)	19.3 (14.7–24.3)	11.4 (10.7–12.2)
Switzerland	10.31 (9.52–11.2)	2.41 (2.27–2.57)	1.13 (1.02–1.25)	21.2 (17.3–25.3)	18.0 (13.5–23.2)	19.1 (17.1–21.3)
United Kingdom	8.96 (8.33–9.77)	1.11 (1.09–1.13)	0.77 (0.71–0.83)	29.5 (26.6–32.5)	15.2 (12.2–18.3)	18.7 (17.0–20.4)

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

\*: Results are expressed as percentage (%) of the population

–: Data not reported/unavailable.

**Figure S1.** Shortages of kidney failure care providers identified by the 21 Western European countries that participated in the ISN-GKHA survey.

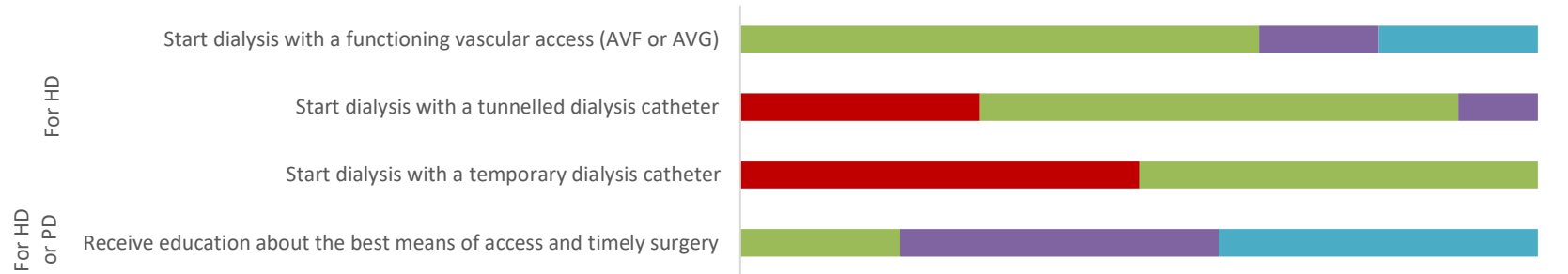
	Nephrologists	Transplant surgeons	Surgeons (HD access)	Surgeons (PD access)	Interventional radiologists (HD access)	Interventional radiologists (PD access)	Laboratory technicians	Dietitians	Radiologists (ultrasound)	Vascular access coordinators	Counsellors/psychologists	Transplant coordinators	Dialysis nurses	Dialysis technicians	TOTAL SHORTAGE
Total shortage →	9	4	8	4	4	1	5	0	0	6	5	1	9	2	
Austria															5
Belgium															1
Denmark															3
Finland															0
France															0
Germany															7
Greece															3
Iceland															2
Ireland															9
Israel															4
Italy															1
Liechtenstein															0
Luxembourg															2
Malta															9
Netherlands															1
Norway															5
Portugal															1
Spain															0
Sweden															3
Switzerland															2
United Kingdom															0

Abbreviations: ISN: International Society of Nephrology; GKHA: Global Kidney Health Atlas; HD: hemodialysis; PD: peritoneal dialysis

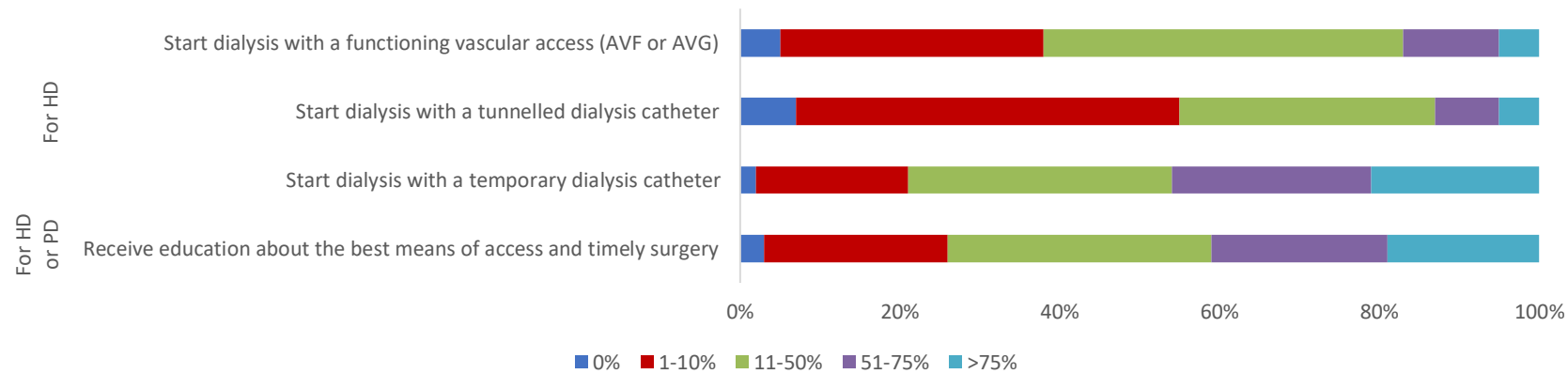
	No shortage
	Shortage

**Figure S2.** Proportion of patients starting dialysis with different forms of vascular access and adequate education.

**Western Europe**

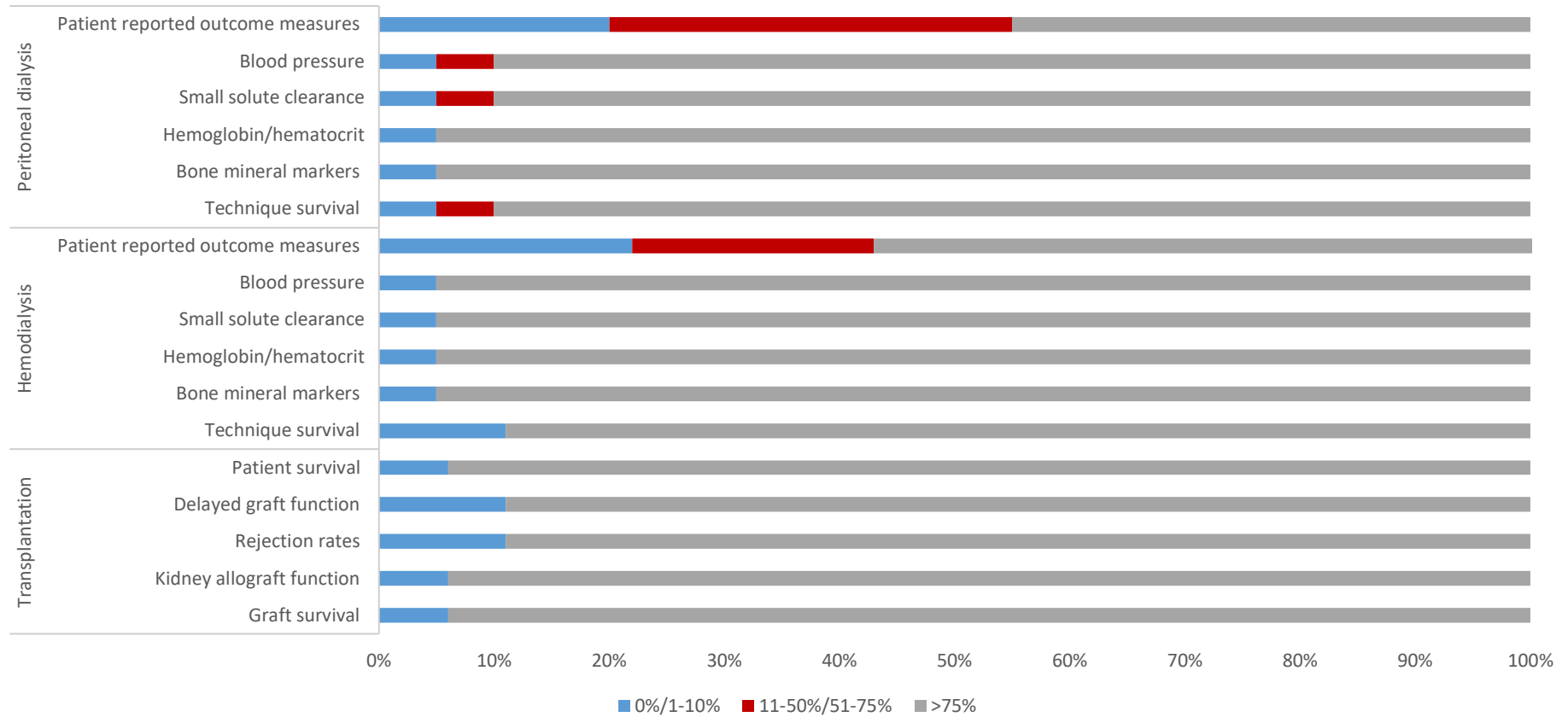


**Global**



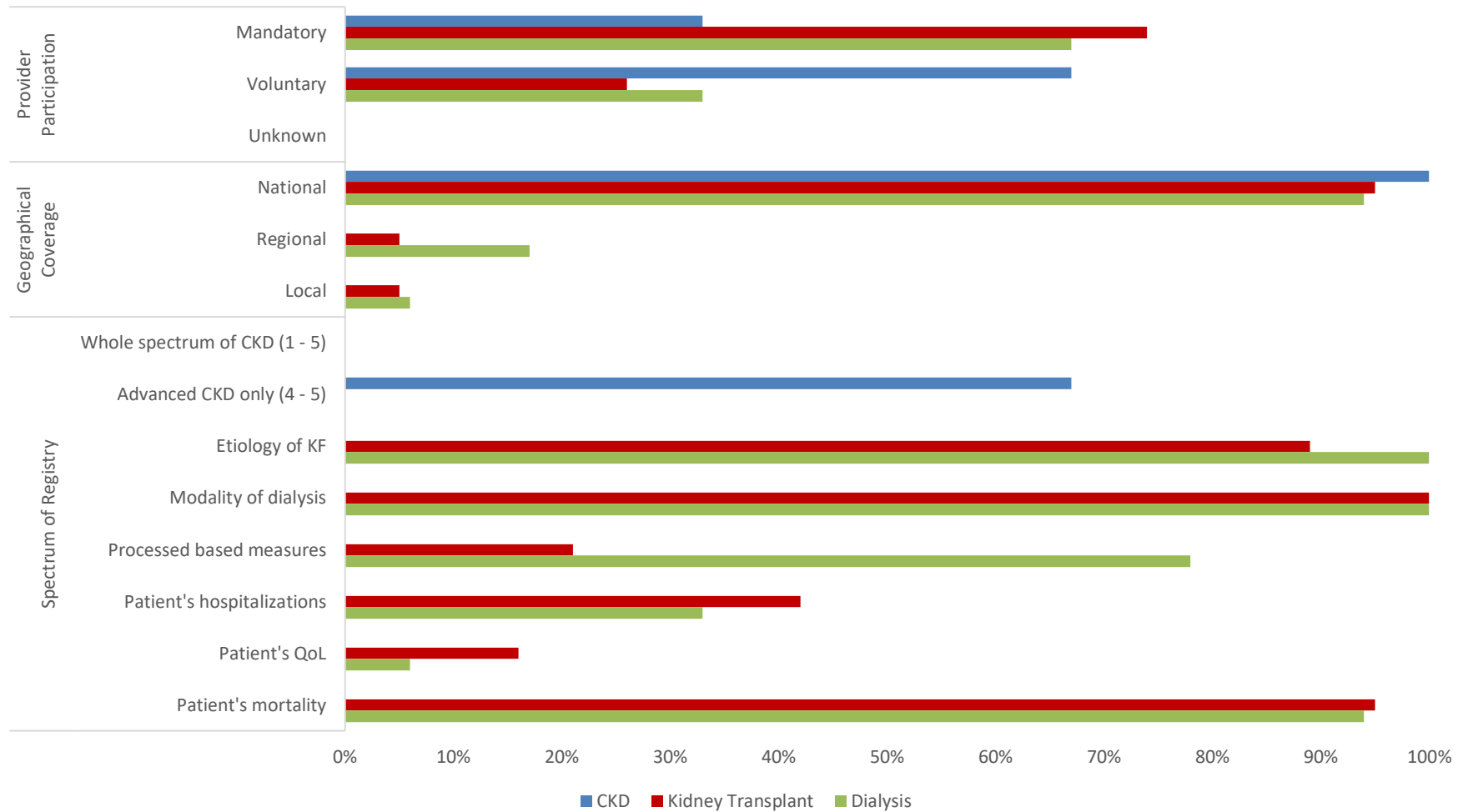
Abbreviations: HD: hemodialysis; PD: peritoneal dialysis; AVF: arteriovenous fistula; AVG: arteriovenous graft

**Figure S3.** Quality indicators monitored and reported by countries that participated in the ISN-GKHA survey.



Abbreviations: ISN: International Society of Nephrology; GKHA: Global Kidney Health Atlas

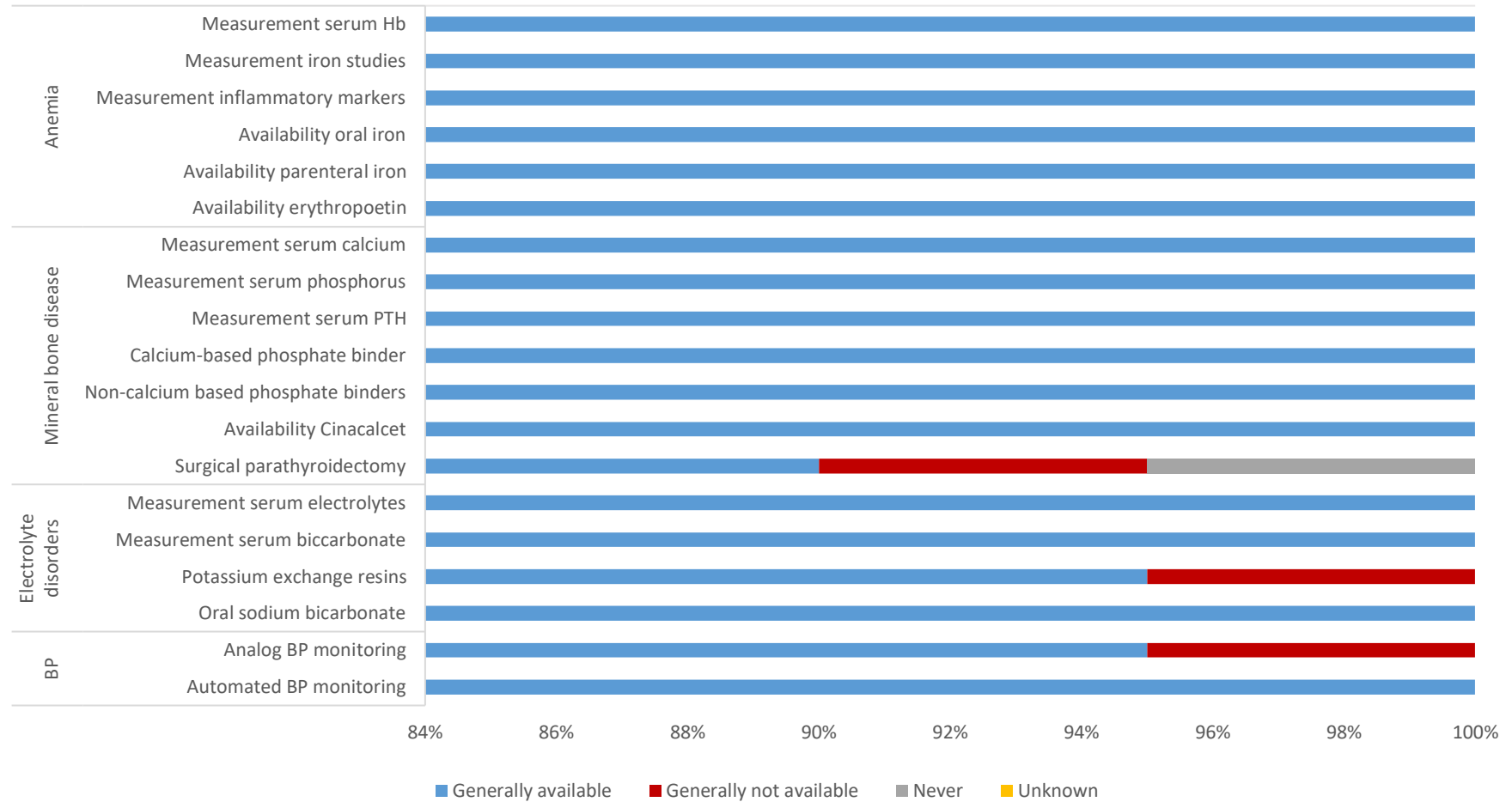
**Figure S4.** Registry characteristics for countries that reported having one or more registries in the ISN-GKHA survey (see also Figure 5).



Three countries reported having a chronic kidney disease registry, 18 reported having a dialysis registry, and 19 reported having a transplantation registry.

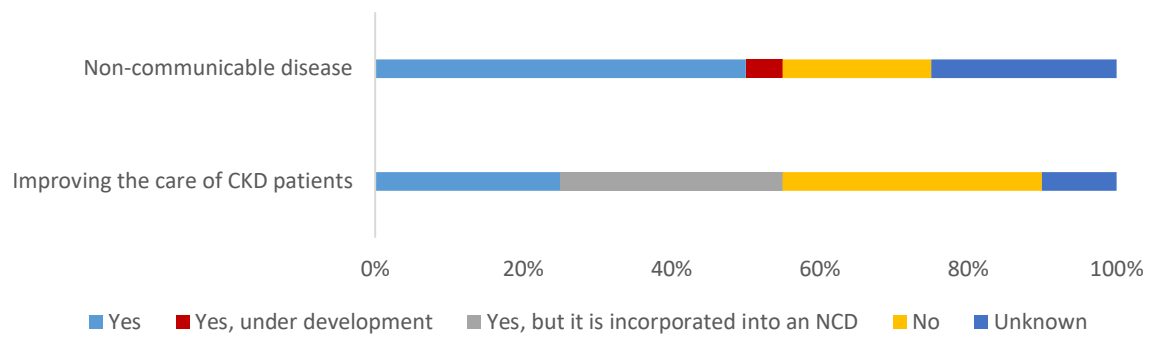
Abbreviations: KF: kidney failure; CKD: chronic kidney disease; QoL: quality of life

**Figure S5.** Availability of services to diagnose and treat complications of kidney failure.



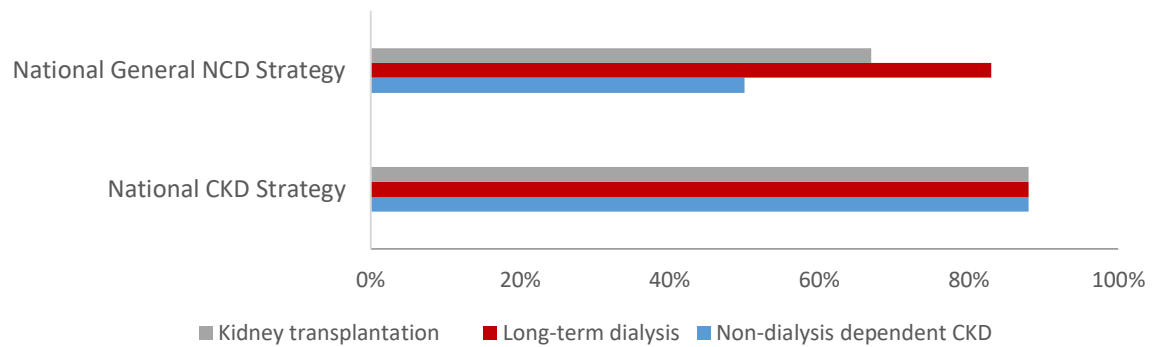
Abbreviations: Hb: hemoglobin; PTH: parathyroid hormone; BP: blood pressure

**Figure S6.** National strategies available in countries.



Abbreviation: CKD: chronic kidney disease; NCD: non-communicable disease

**Figure S7.** Population covered under national non-communicable disease and chronic kidney disease strategies.



Abbreviation: CKD: chronic kidney disease; NCD: non-communicable disease



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