



The Effect of Differing Kidney Disease Treatment Modalities and Organ Donation
and Transplantation Practices on Health Expenditure and Patient Outcomes

Treatment modality choices, outcomes and costs for end-stage kidney disease

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on behalf of Vianda Stel, Kitty Jager and Ziad Massy

ERA-EDTA Registry
Amsterdam UMC, The Netherlands

EDITH final meeting, 12 November 2020

Aims of work package 4

Amsterdam UMC is leading:

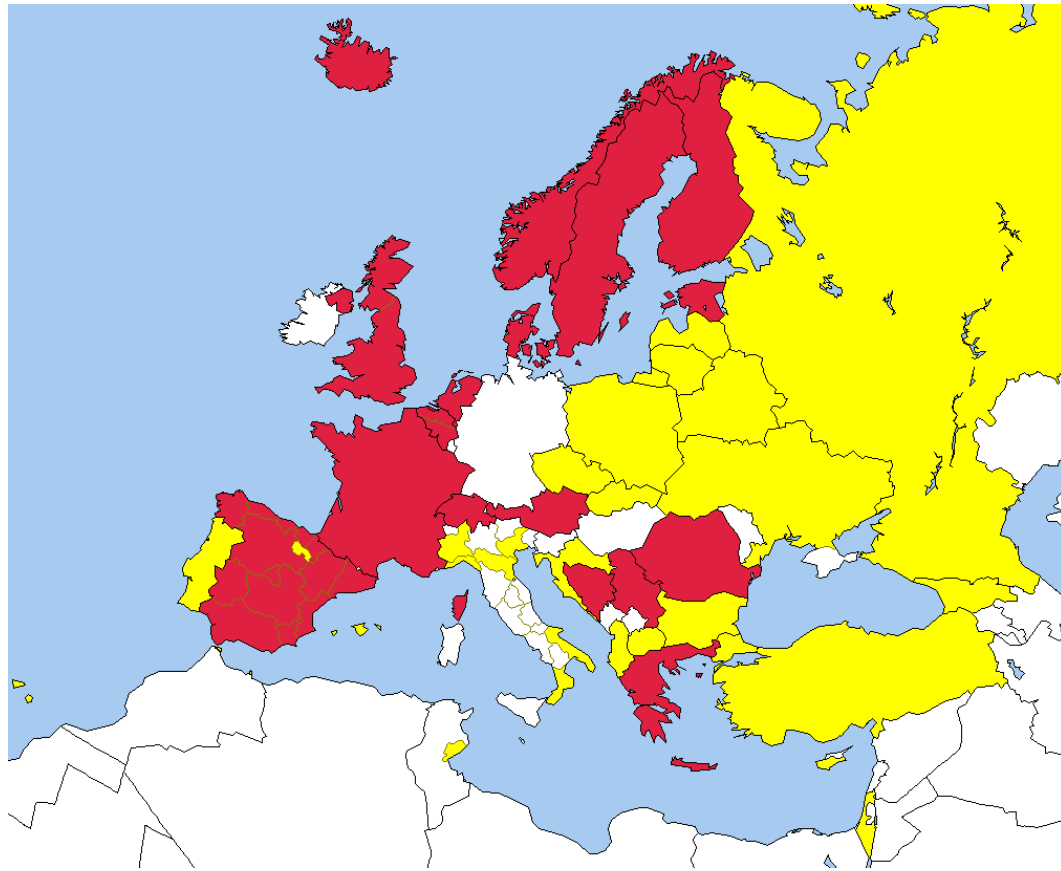
1. Assess **frequency** of different end-stage kidney disease treatment modalities
2. Investigate factors influencing the **choice** of treatment modalities **by patients and doctors**
EDITH kidney patient survey
EDITH nephrologist survey
3. Assess **patient survival and quality of life** on different treatment modalities

Centro Nazionale Trapianti (CNT) is leading:

4. Investigate **costs** of different treatment modalities

ERA-EDTA Registry

collecting data via national and regional registries on dialysis and kidney transplant patients



 Renal registries contributing with individual patient data

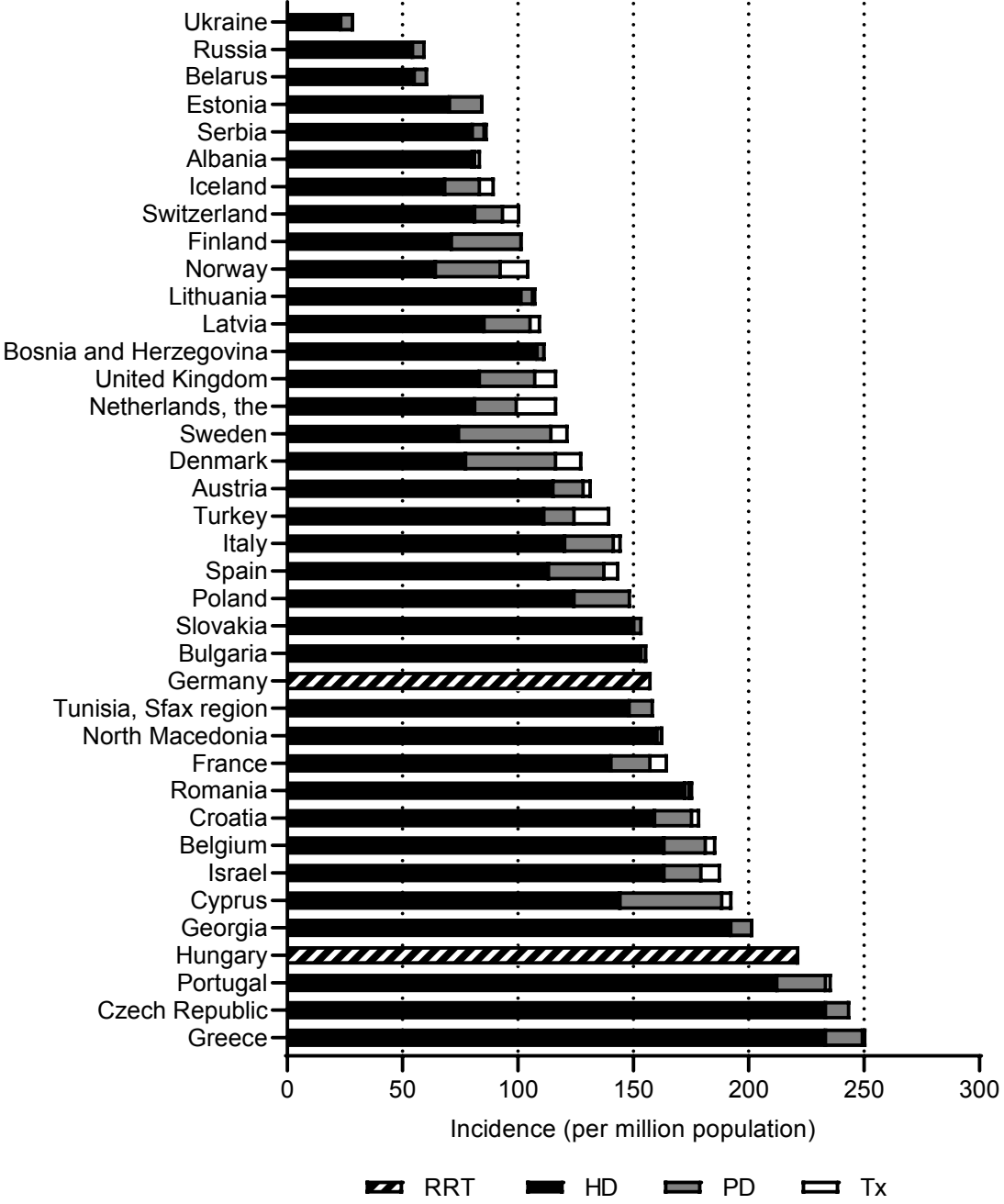
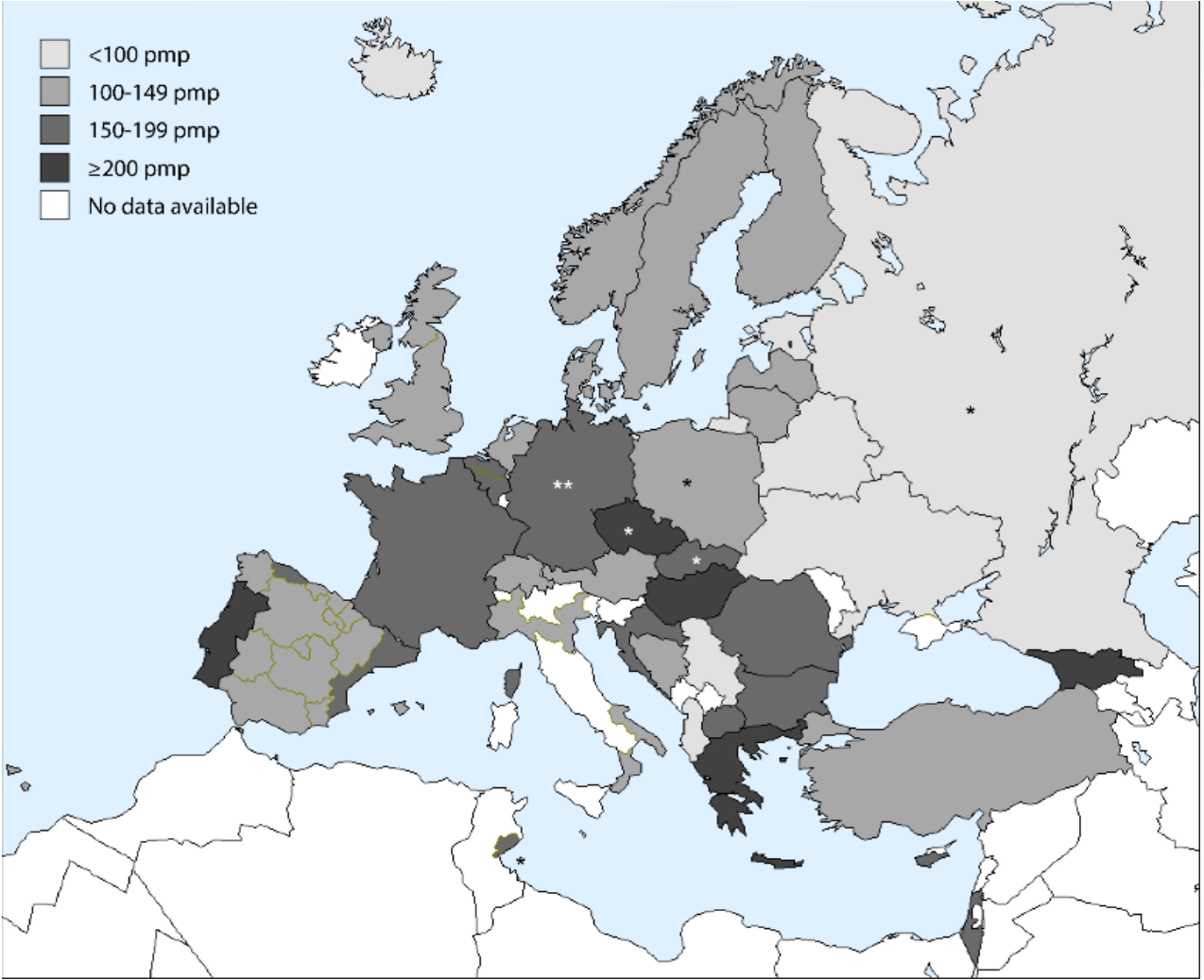
 Renal registries contributing with aggregated data

10 new countries	Sources
Germany	Insurance data ¹
Hungary, Israel	USRDS report
Ireland	Personal communication
Armenia, Malta, Moldova	Newsletter transplant
Germany, Luxembourg, Slovenia	Eurotransplant annual report
Kosovo, Montenegro, Slovenia	Scientific papers ^{2 3}

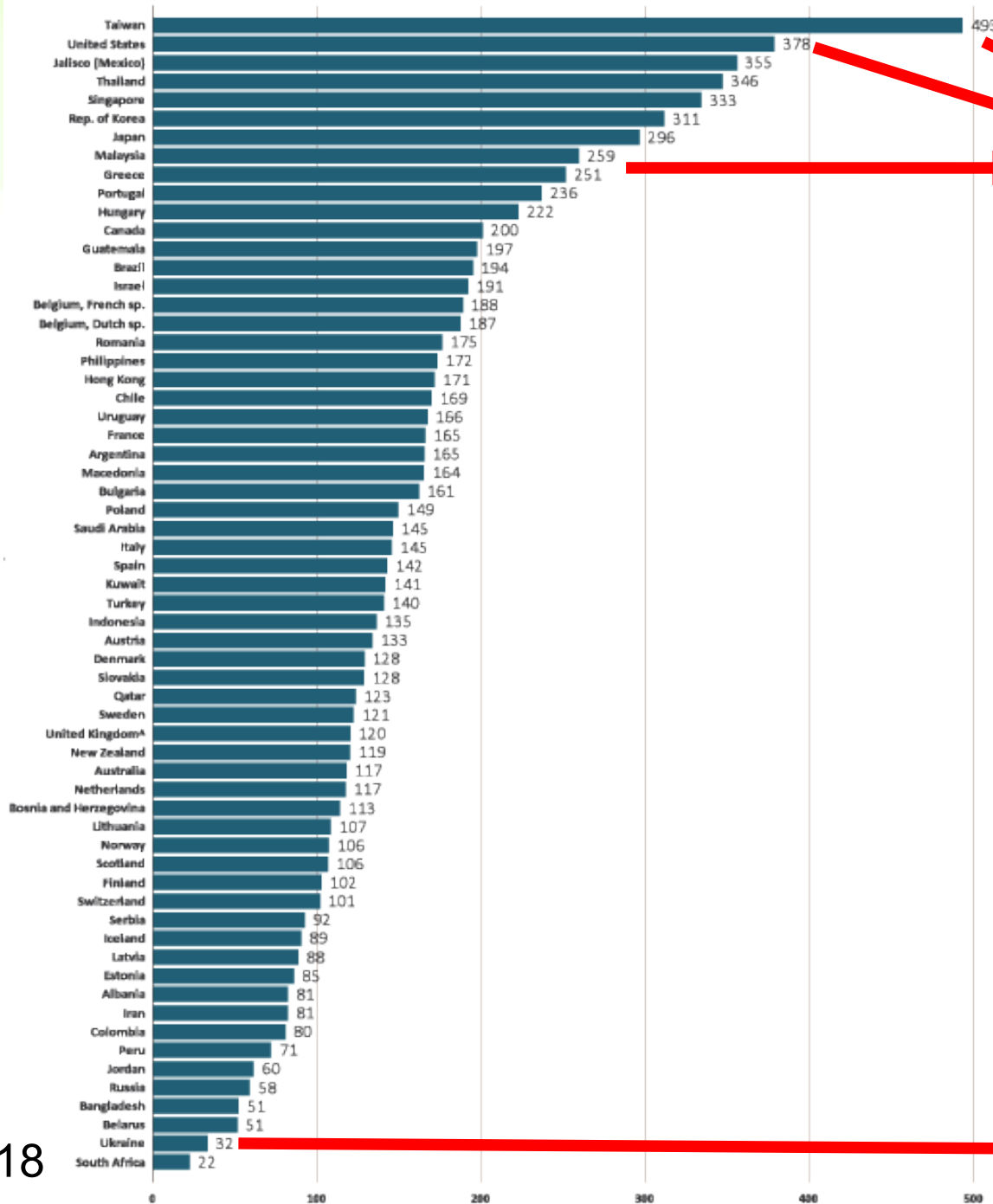
1. Potthoff, F., Münscher, C., Berendes, A., Weber, W. Jahresbericht 2016 zur Qualität in der Dialyse. 2017. Münster. Institution: MNC - Medical Netcare GmbH.
2. van der Tol A, Lameire N, Morton RL, Van Biesen W, Vanholder R. An International Analysis of Dialysis Services Reimbursement. Clin J Am Soc Nephrol. 2019;14(1):84-93.
3. Spasovski G, Rroji M, Vazellov E, et al. Nephrology in the Eastern and Central European region: challenges and opportunities. Kidney Int. 2019 Aug;96(2):287-290.

Incidence of RRT (pmp)

at day 1



Worldwide incidence of RRT (pmp)

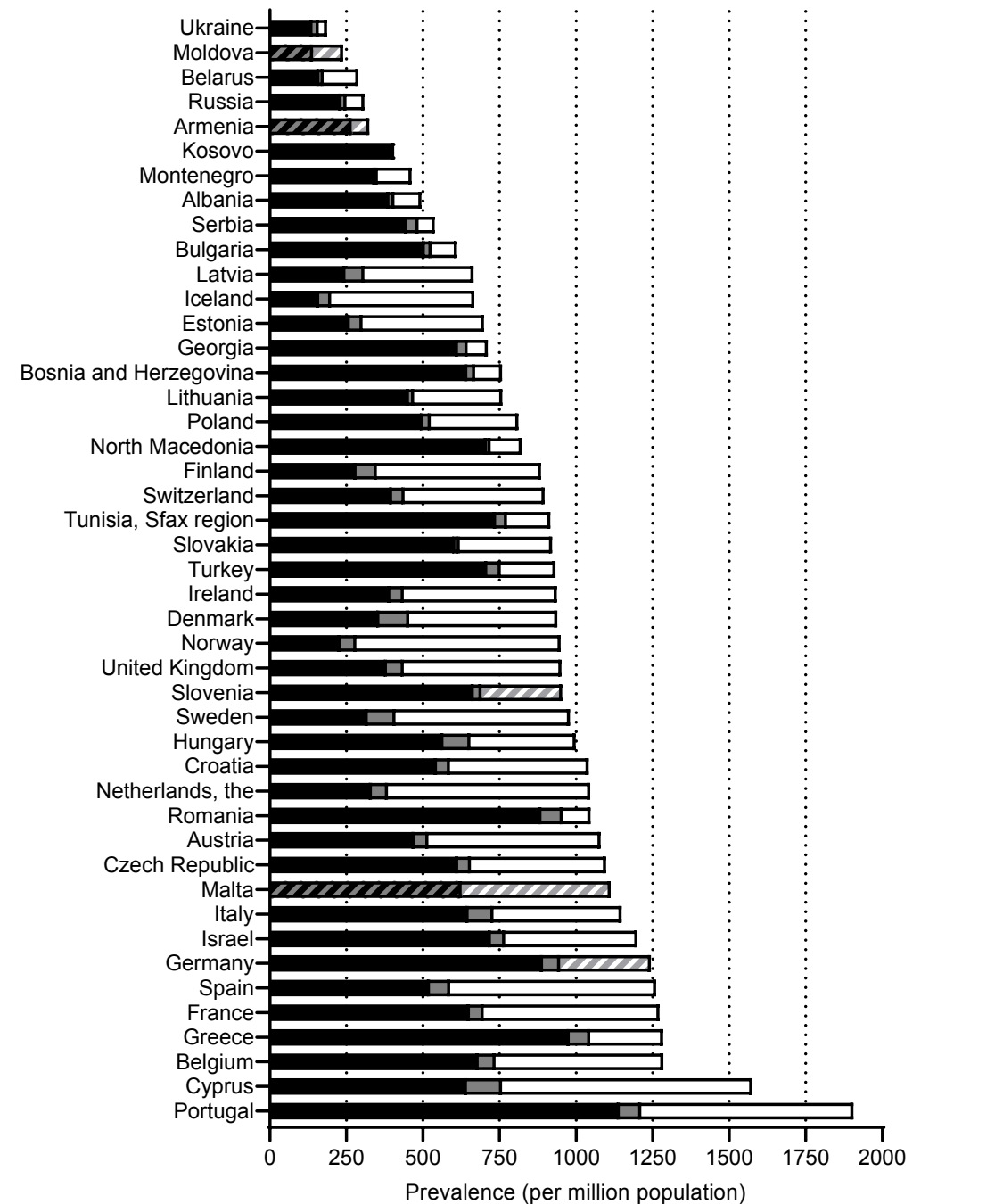
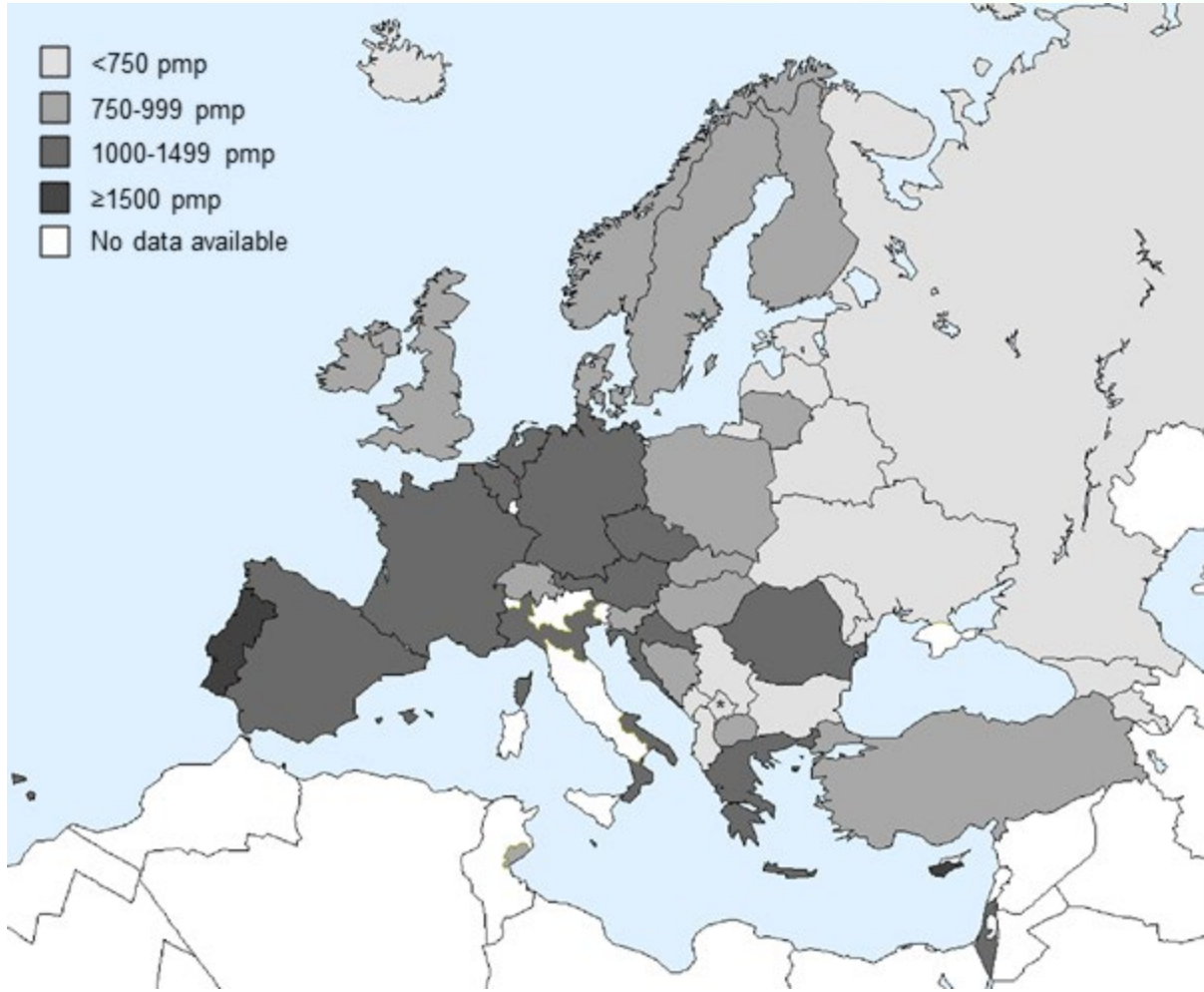


Taiwan 493 pmp
USA 378 pmp
Greece 251 pmp

Ukraine 32 pmp

Prevalence of RRT

31 Dec 2016

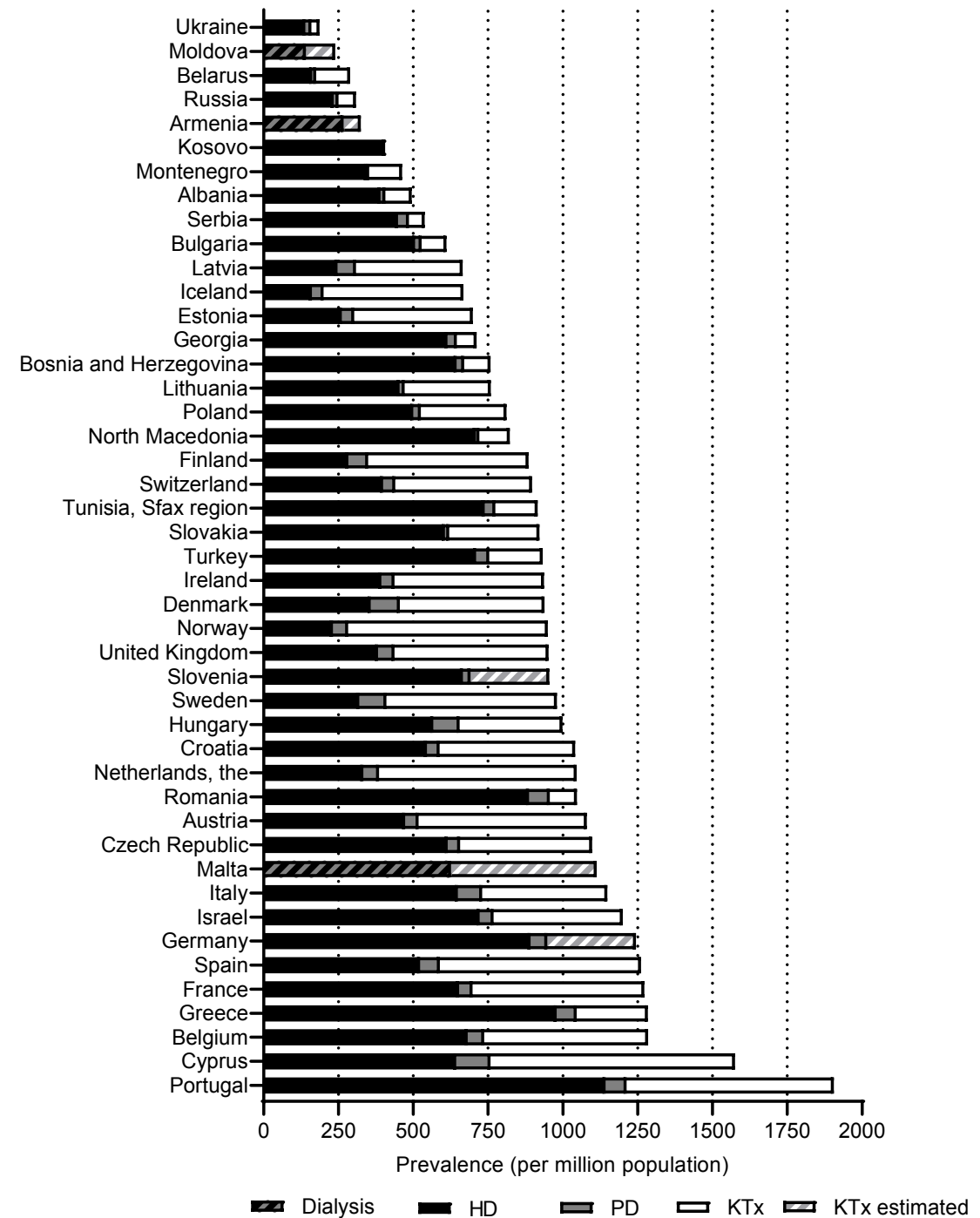
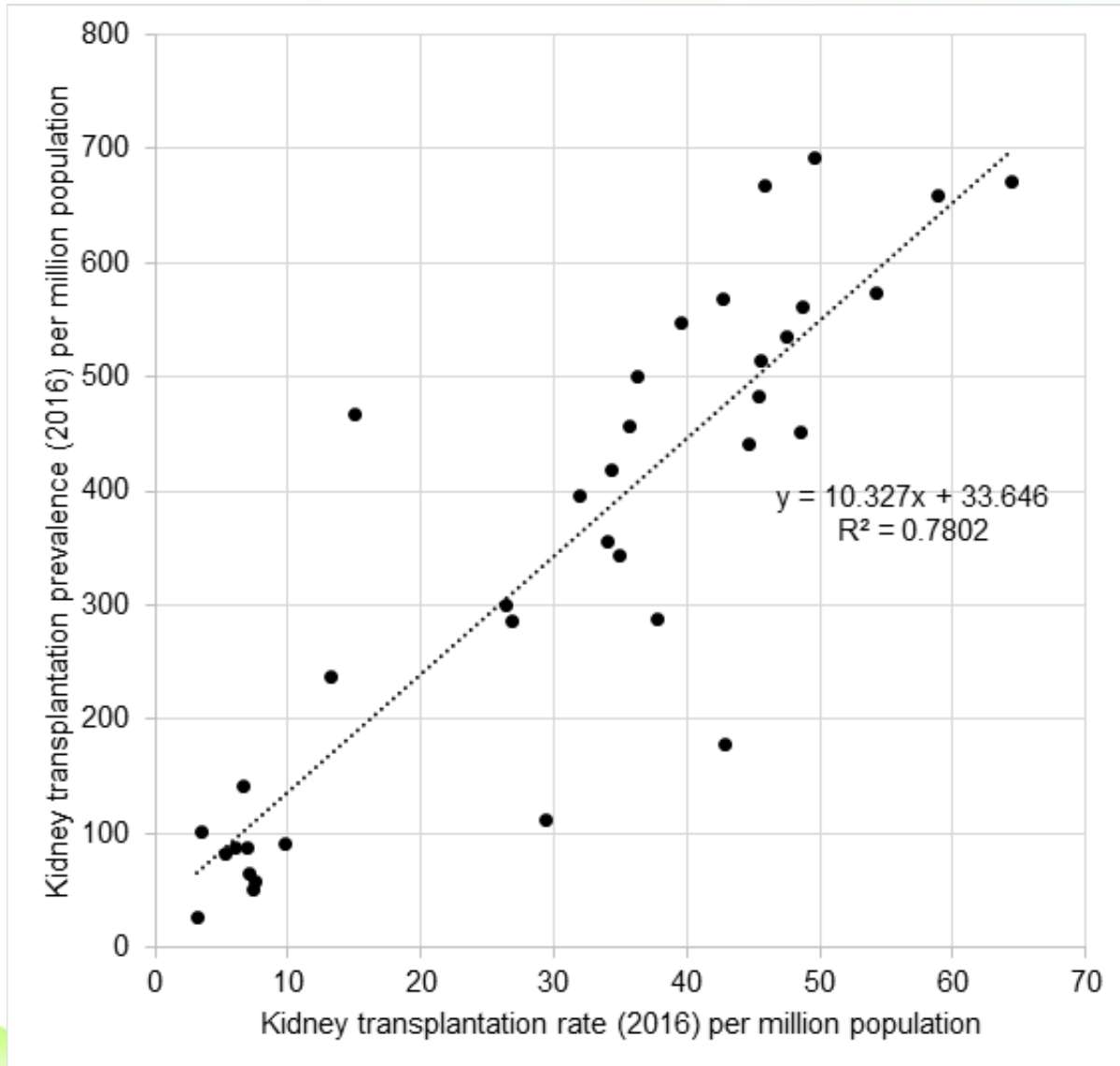


In Europe, about 55% of the patients uses dialysis

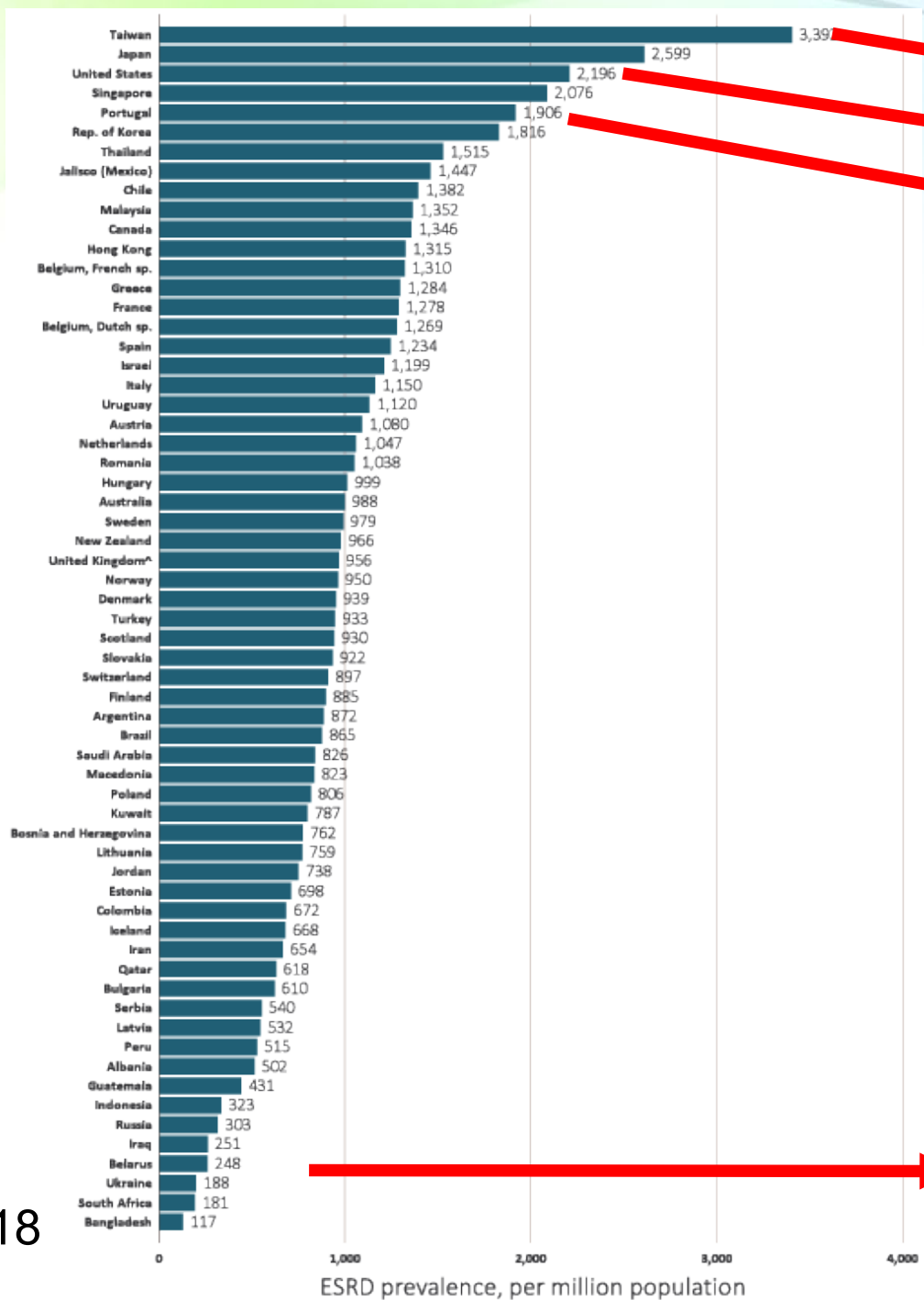
Legend for RRT modalities: Dialysis (hatched), HD (black), PD (dark grey), KTx (white), KTx estimated (light grey)

Prevalence of RRT

31 Dec 2016



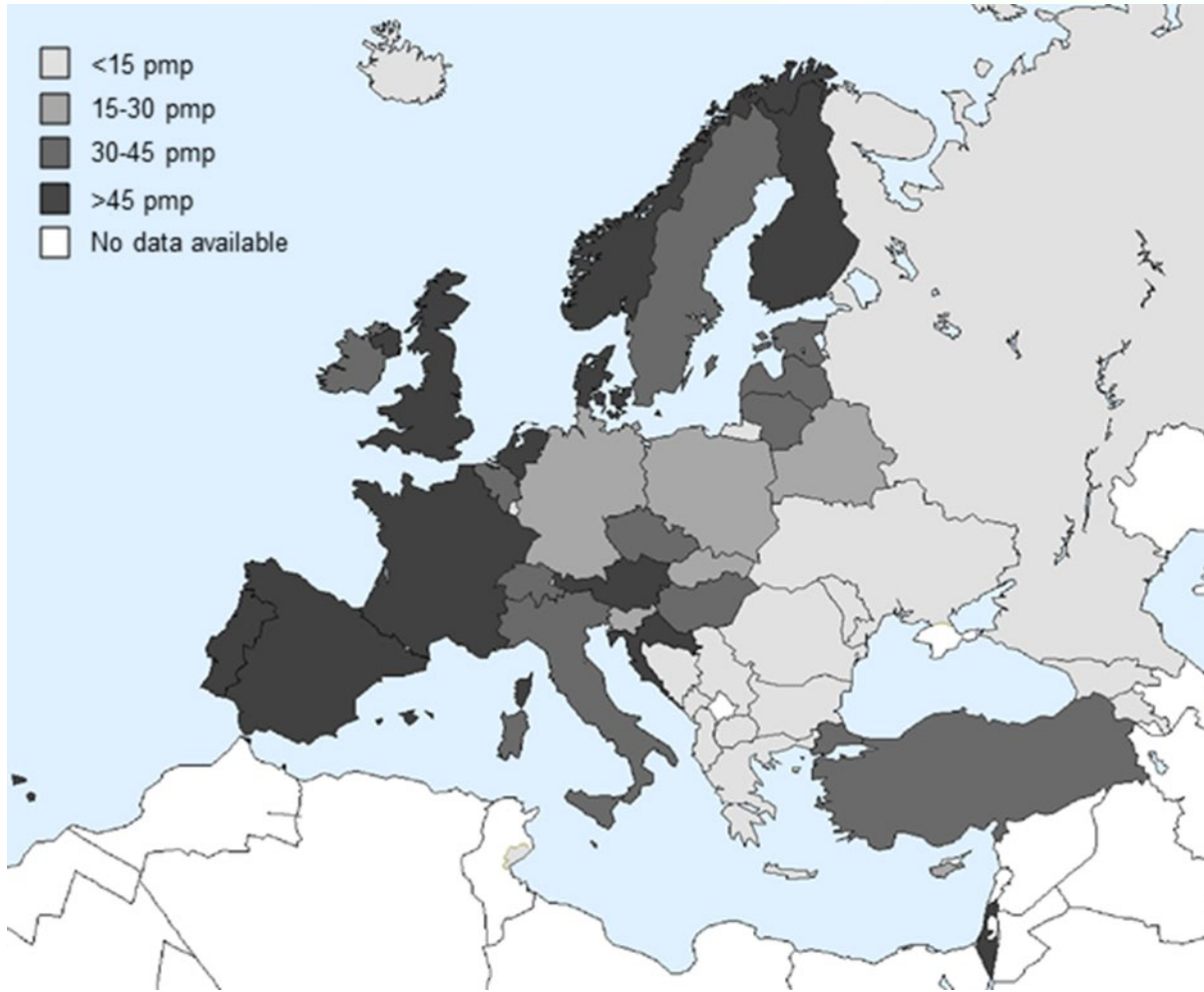
Worldwide prevalence of RRT (pmp)



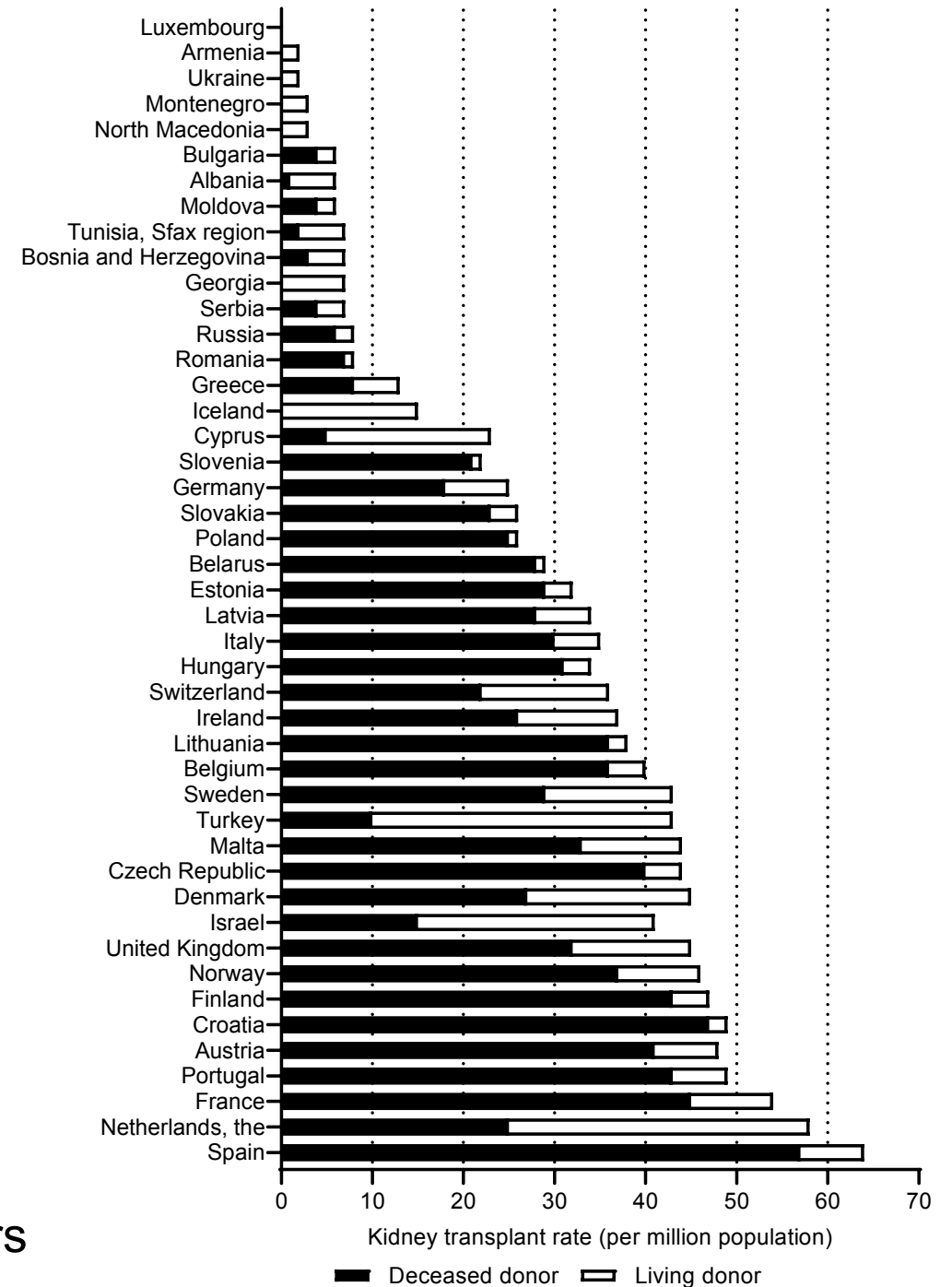
Taiwan 3392 pmp
USA 2196 pmp
Portugal 1906 pmp

Ukraine 188 pmp

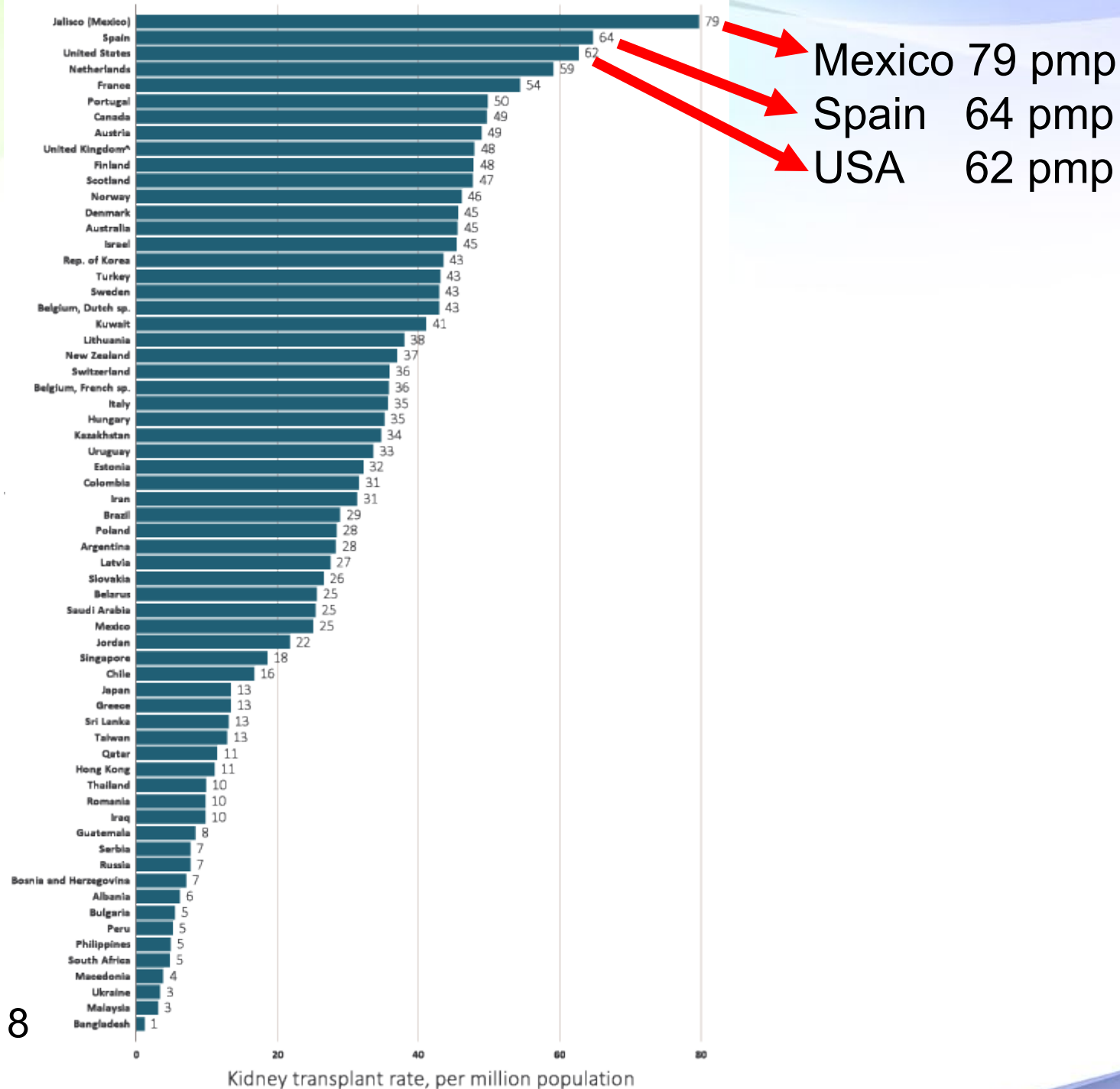
Kidney transplant rate in 2016



In Europe, about 80% of kidneys are from deceased donors

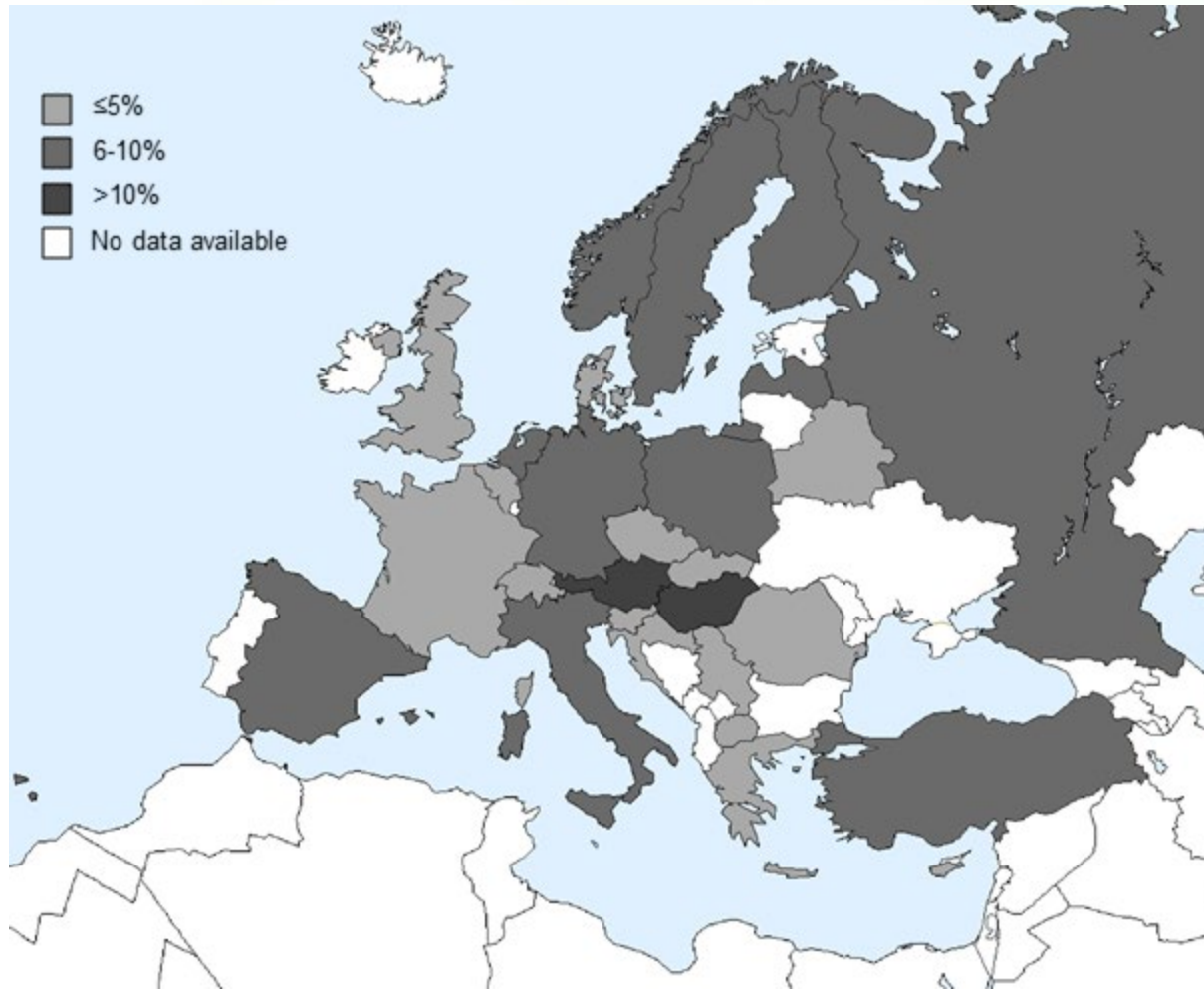


Worldwide kidney transplant rate (pmp)

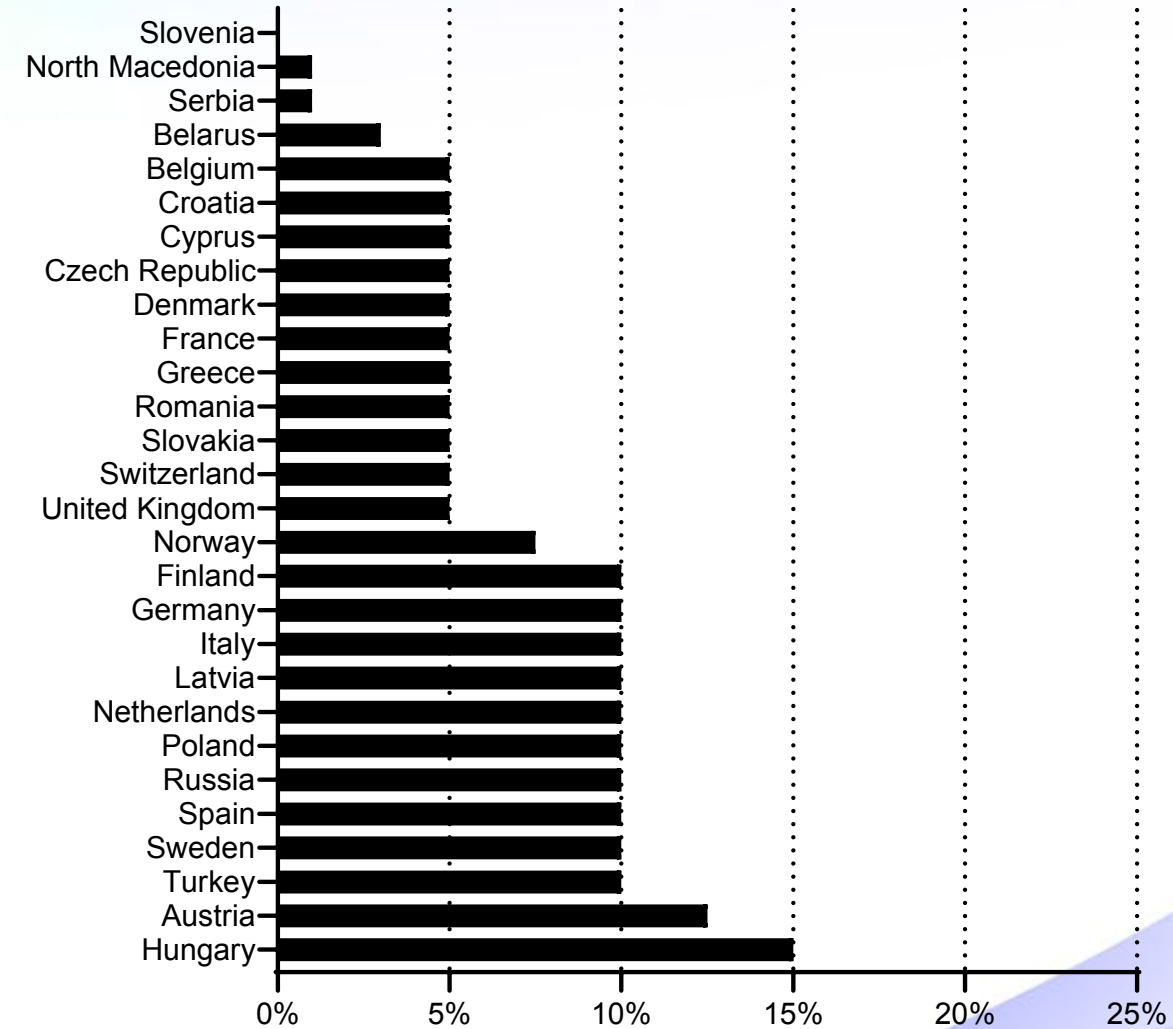


USRDS report 2018

Prevalence of comprehensive conservative management (CCM) in 2018



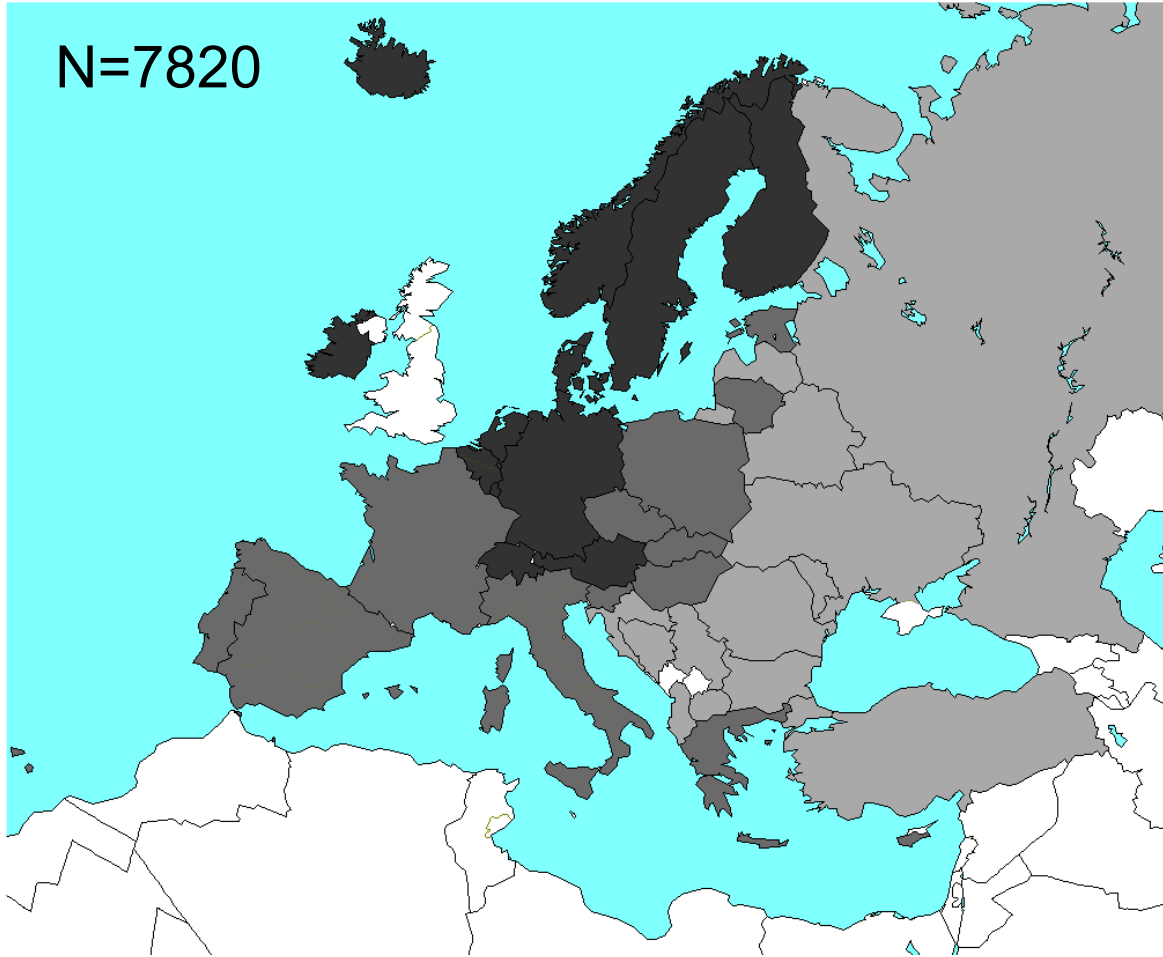
Data via EDITH Nephrologist survey (n=587)



Estimated median percentage

EDITH kidney patient survey

about treatment modality choice



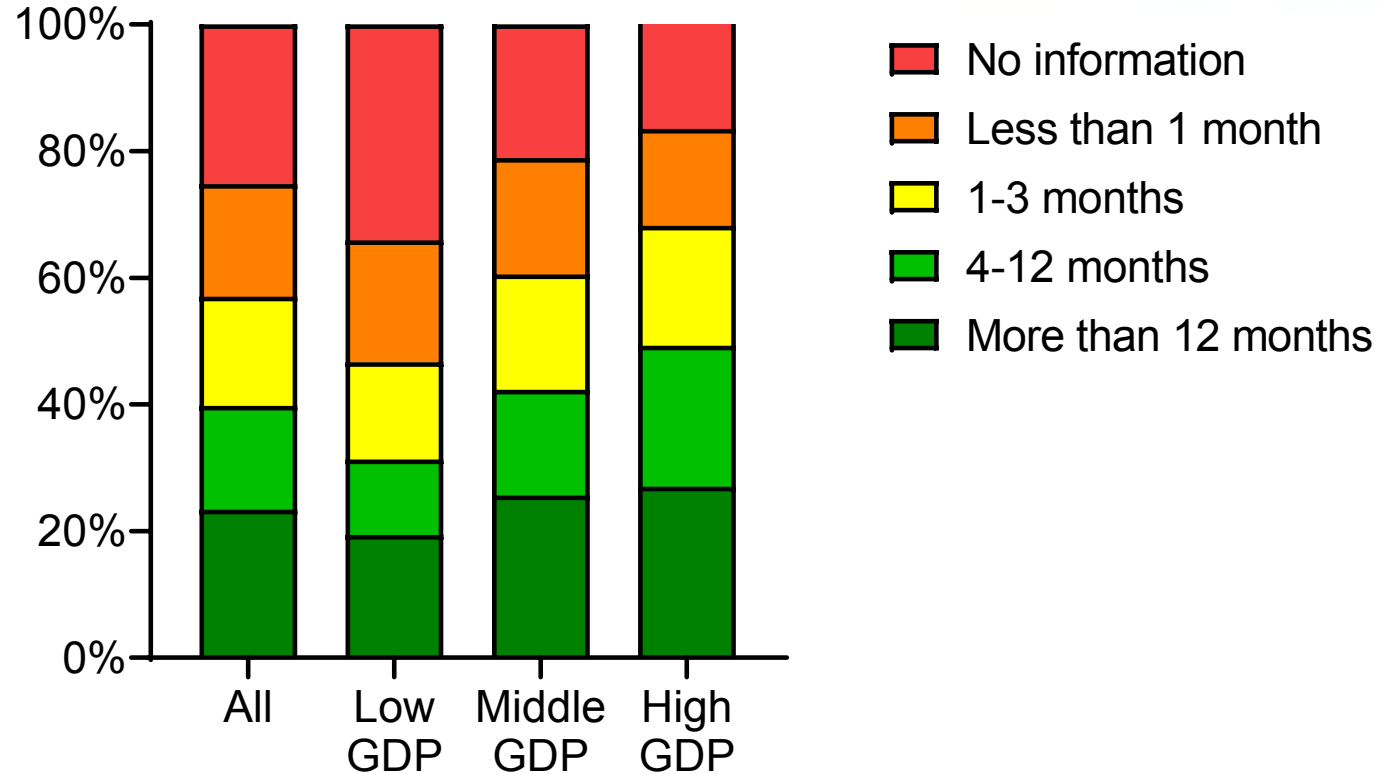
- Lower income countries
- Middle income countries
- Higher income countries

Groups based on GDP tertiles

- Survey on paper and online
- 31 languages
- Adult on dialysis / living with kidney transplant
- Topics:
 - Information provision
 - Decision making
 - Reasons for choice
 - Experience with treatment

Information provision

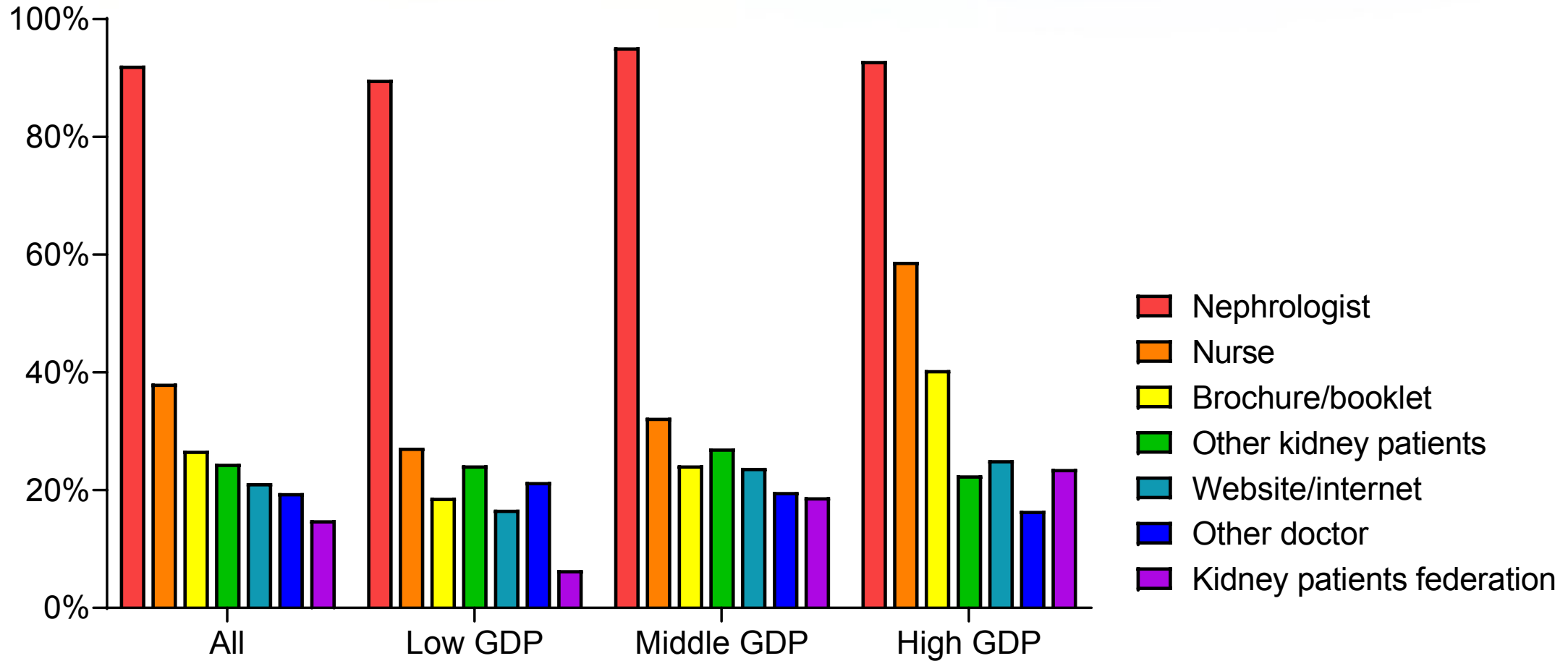
Timing of information provision before start of RRT



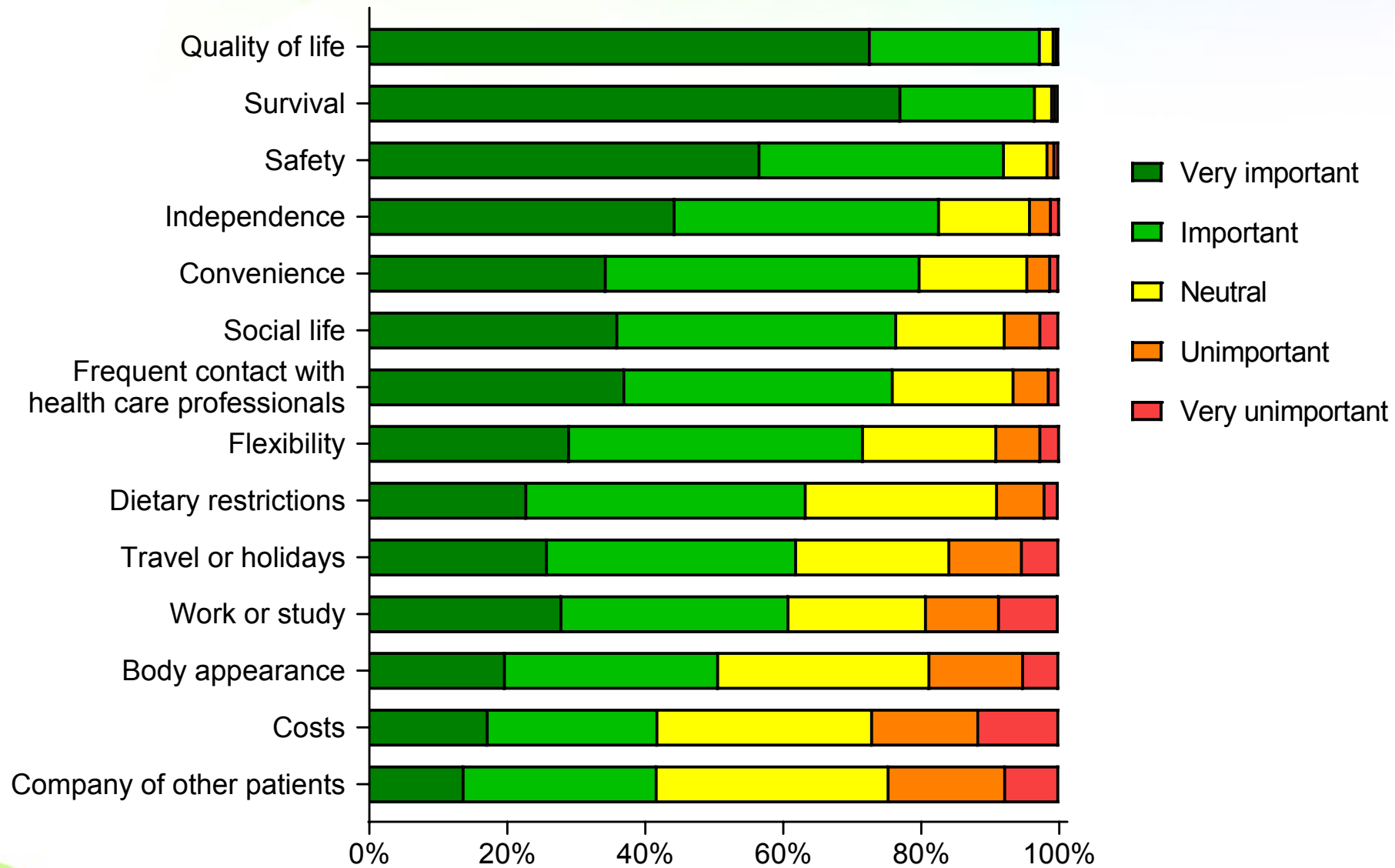
In general, patients were satisfied with information provision, but satisfaction was poorer in lower GDP countries

Information provision

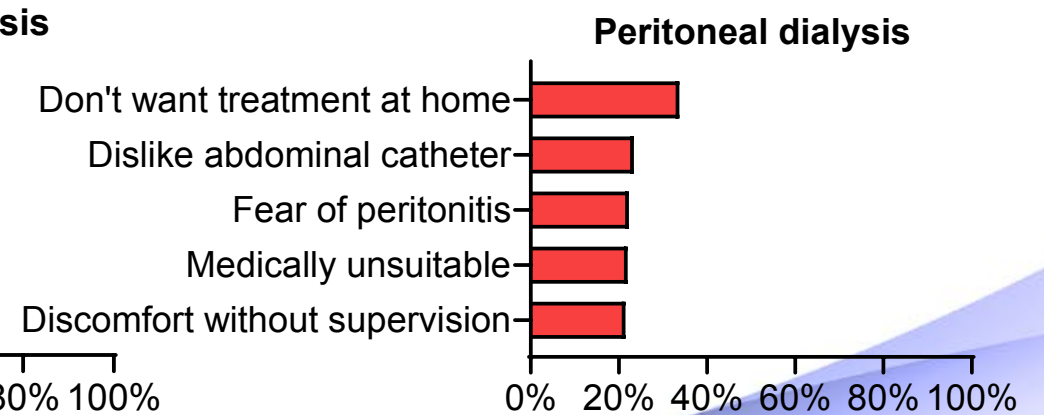
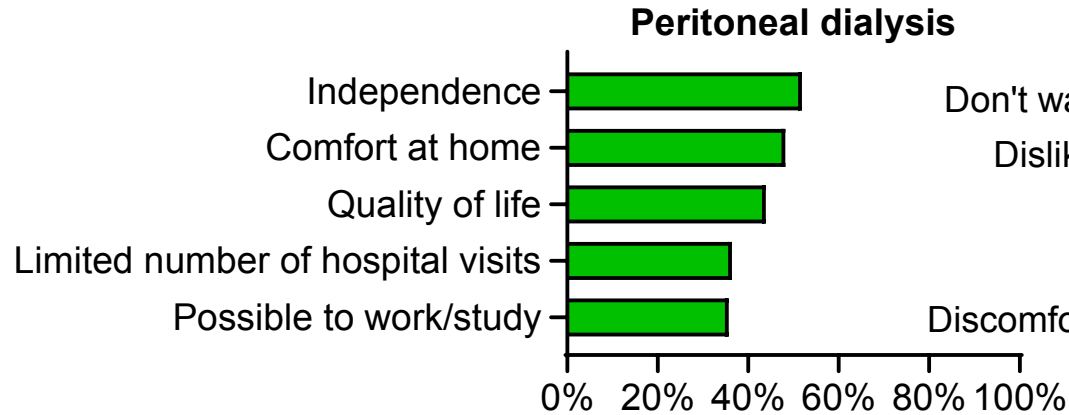
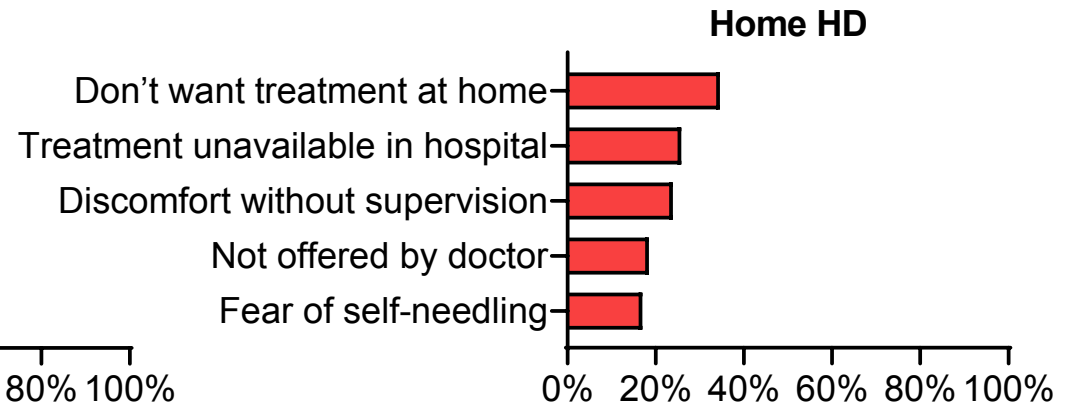
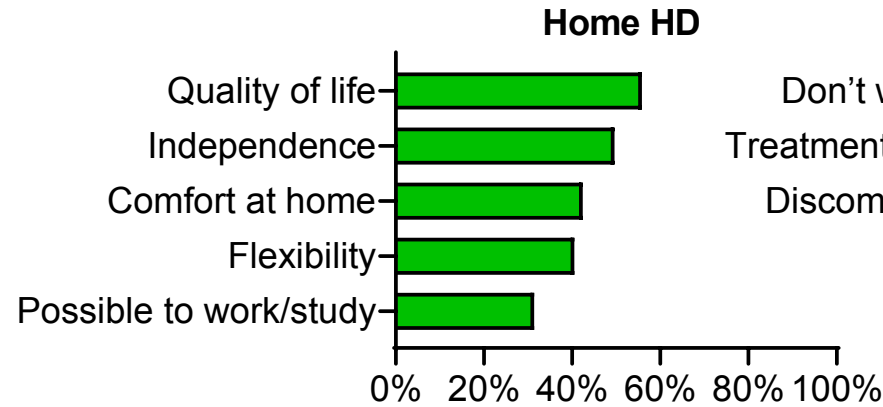
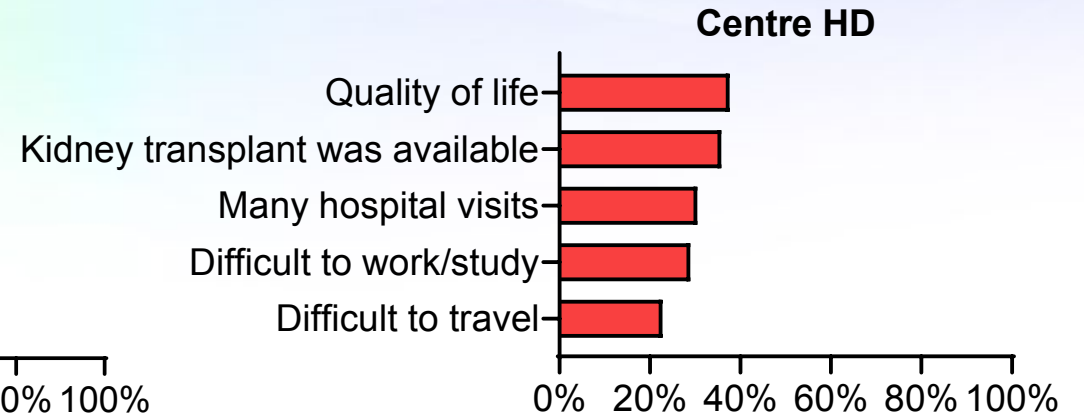
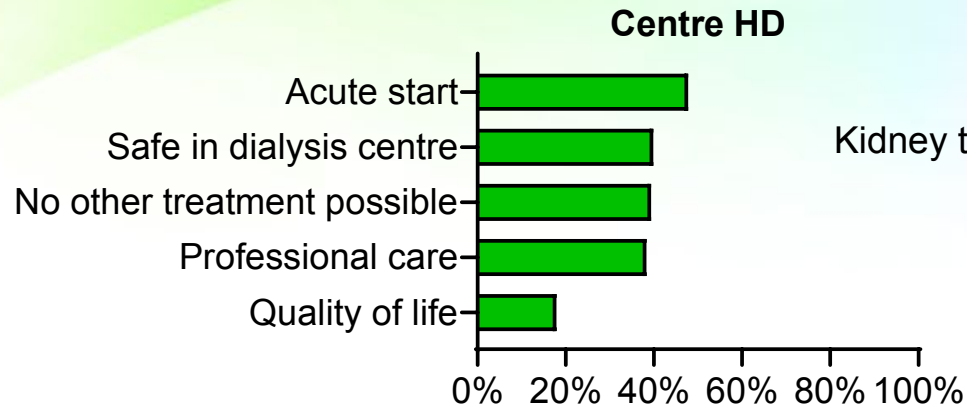
Sources of information



Factors influencing treatment modality choice

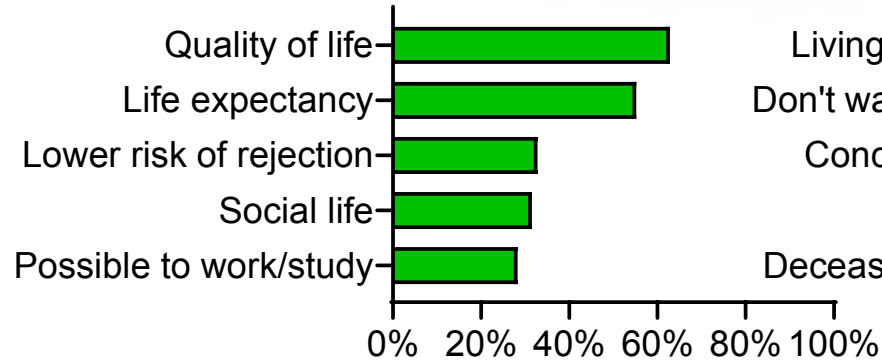


Treatment-specific reasons

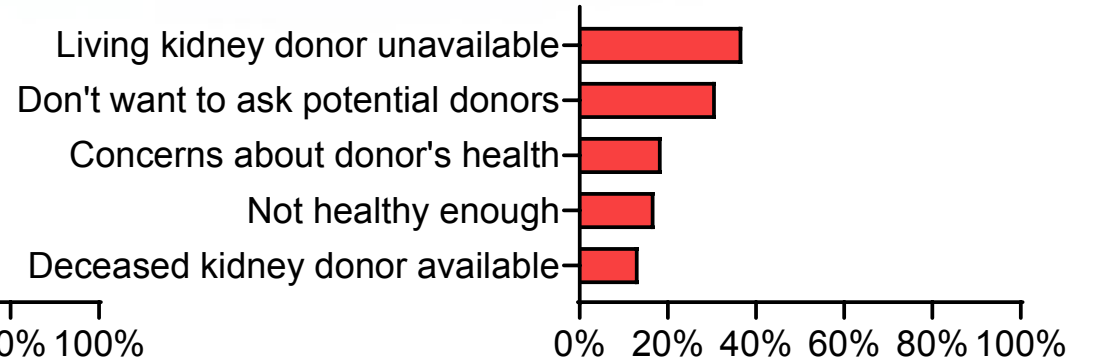


Treatment-specific reasons

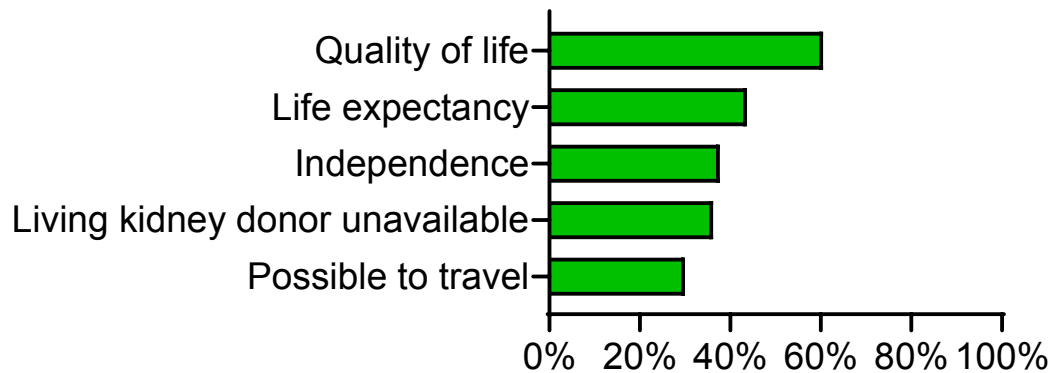
Living donor Tx



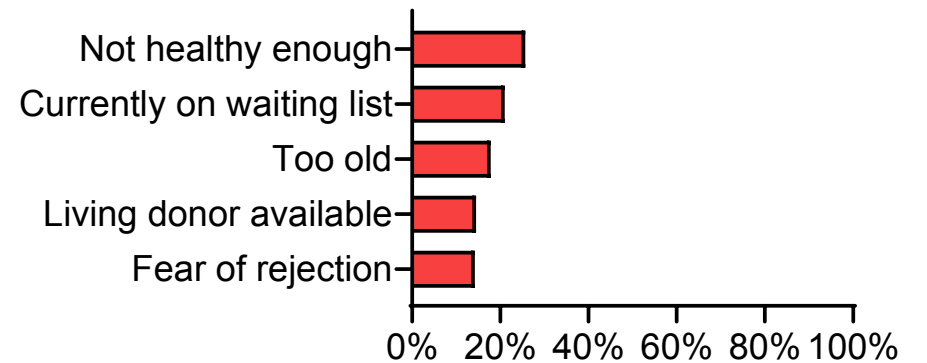
Living donor Tx



Deceased donor Tx

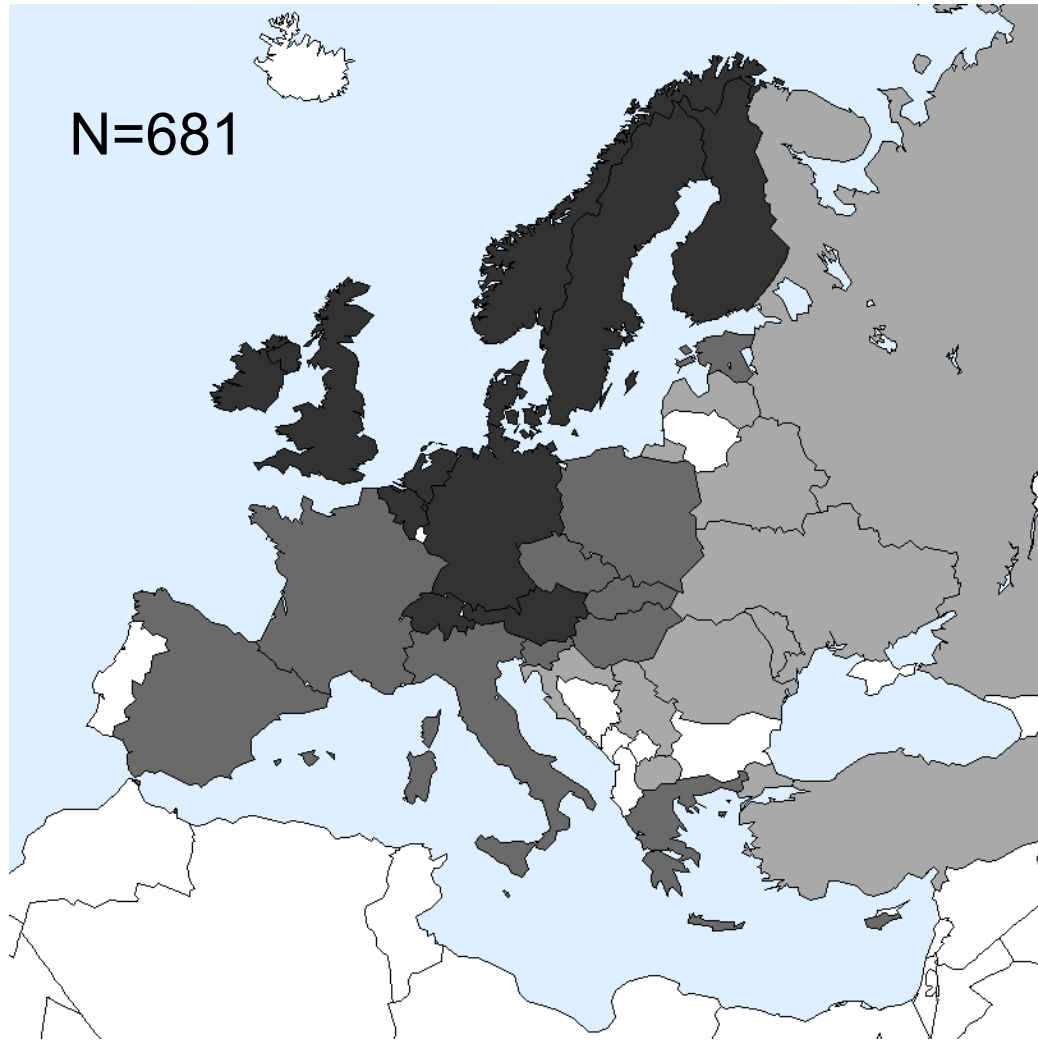


Deceased donor Tx



EDITH Nephrologist survey

about treatment modality choice

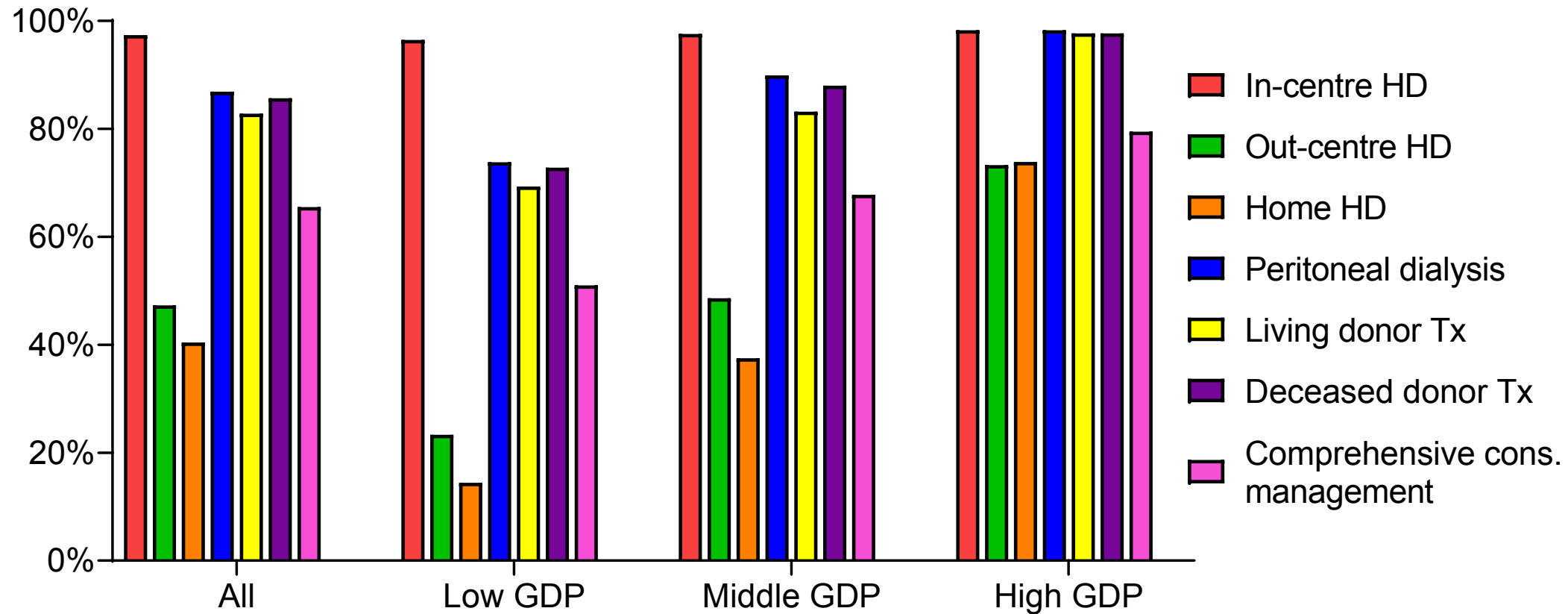


- Lower income countries
- Middle income countries
- Higher income countries

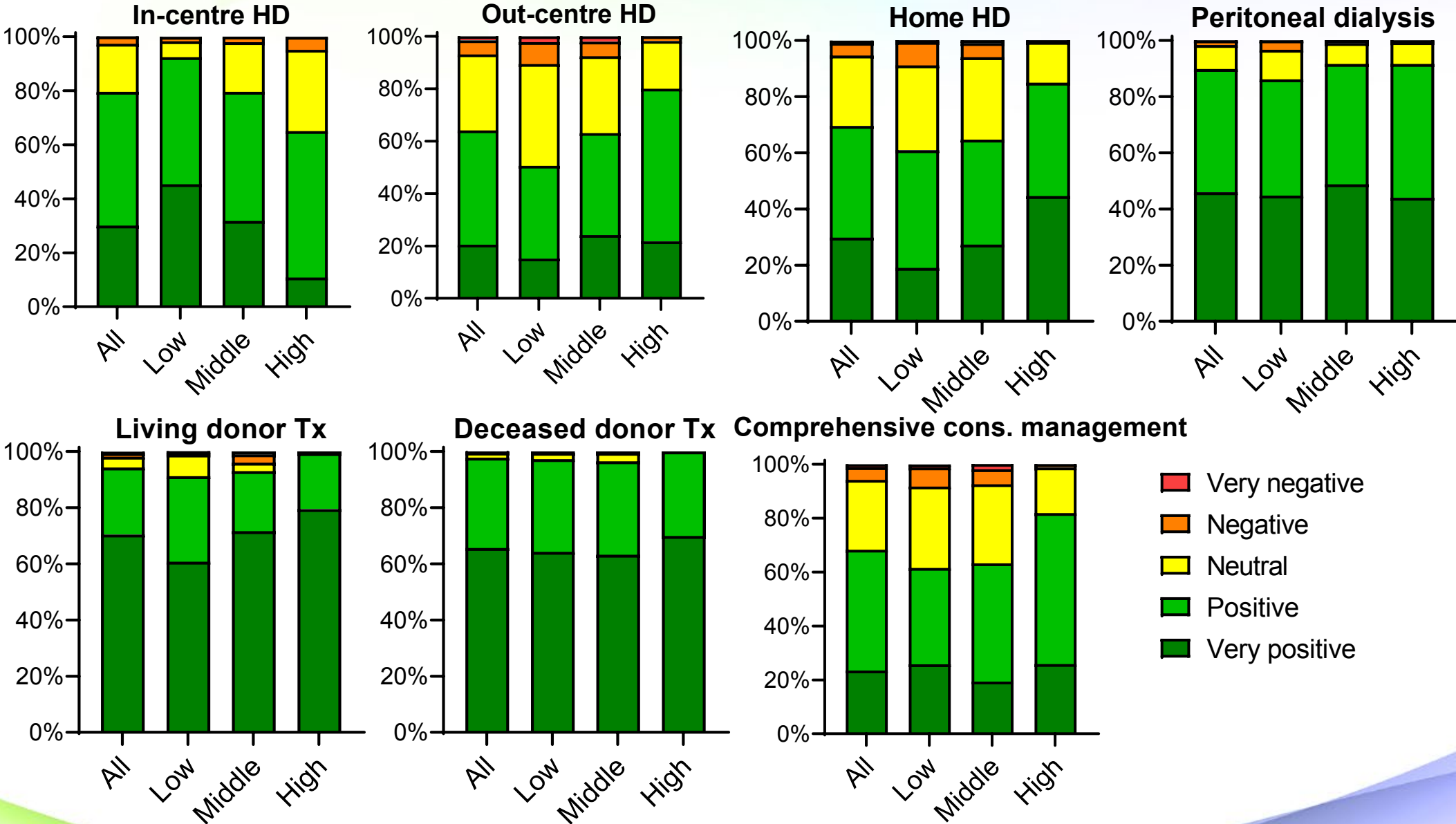
Groups based on GDP tertiles

- Online survey
- English
- Nephrologists treating adults with RRT
- Topics:
 - Information provision
 - Decision making
 - Attitude and uptake
 - Barriers
 - Remote patient management

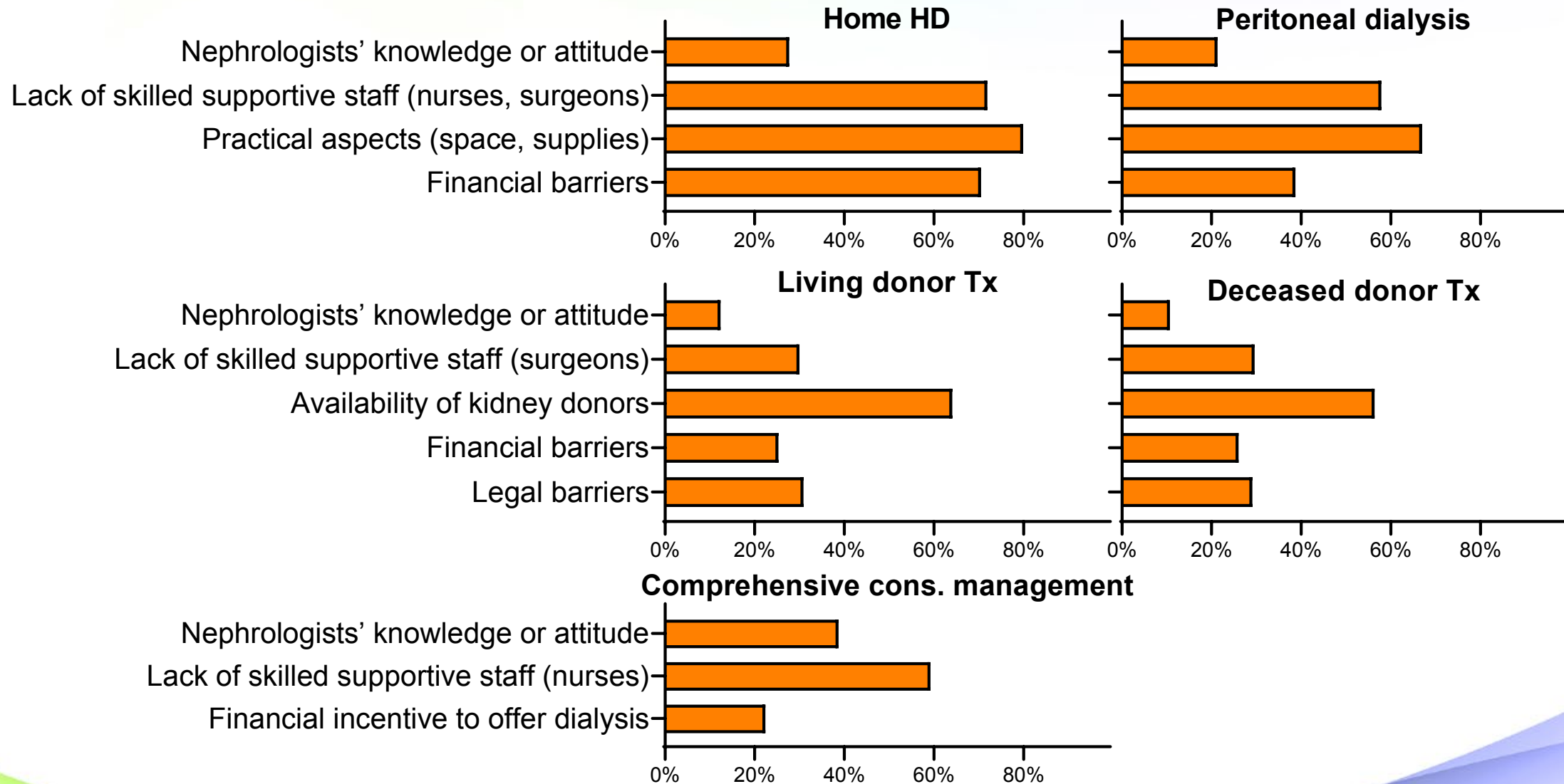
On which treatment modalities do your patients usually receive information?



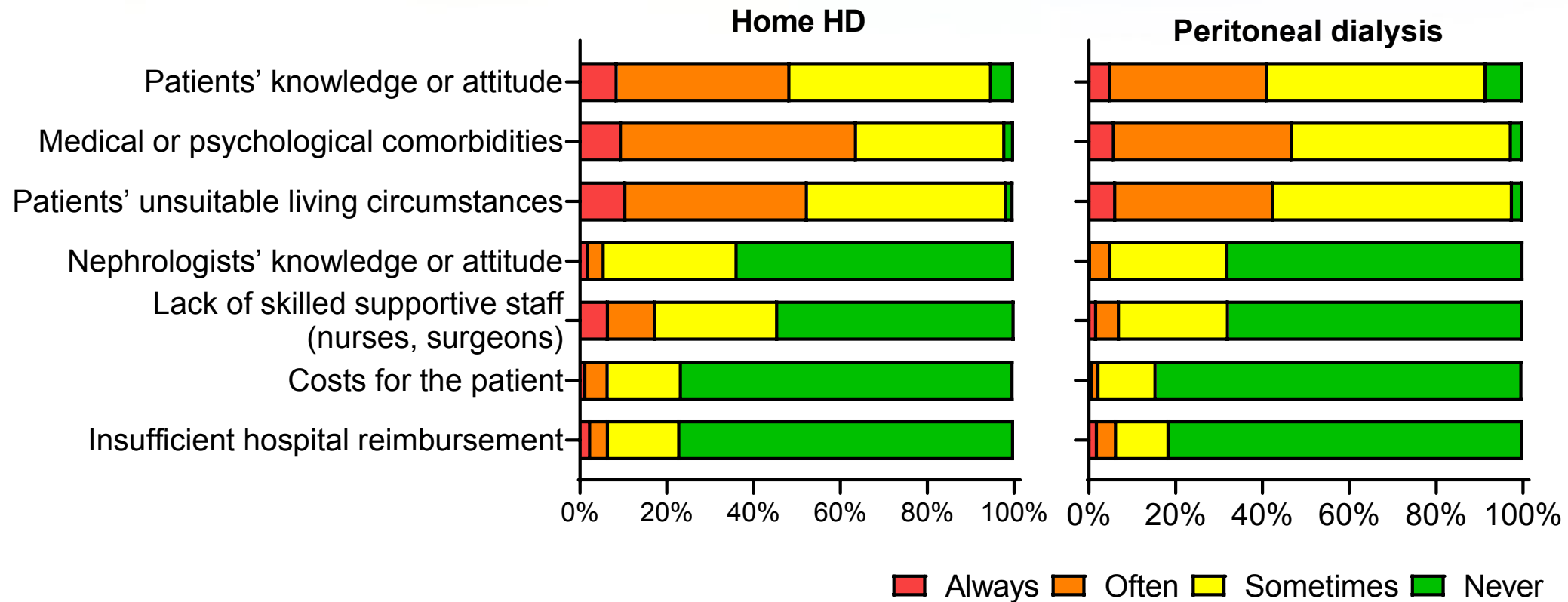
Attitude towards different RRT modalities and CCM



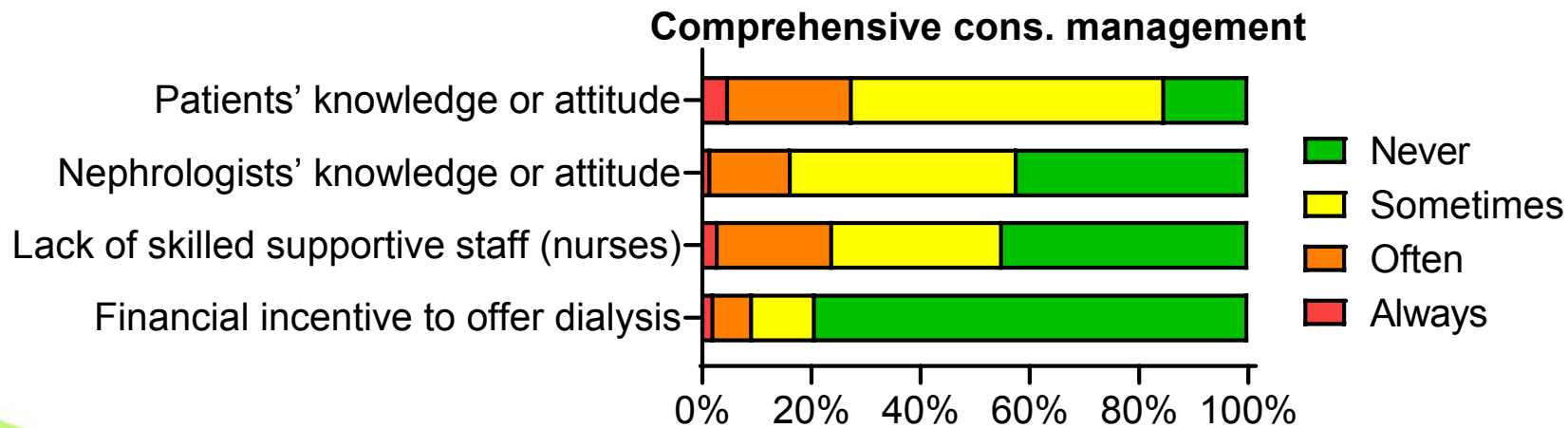
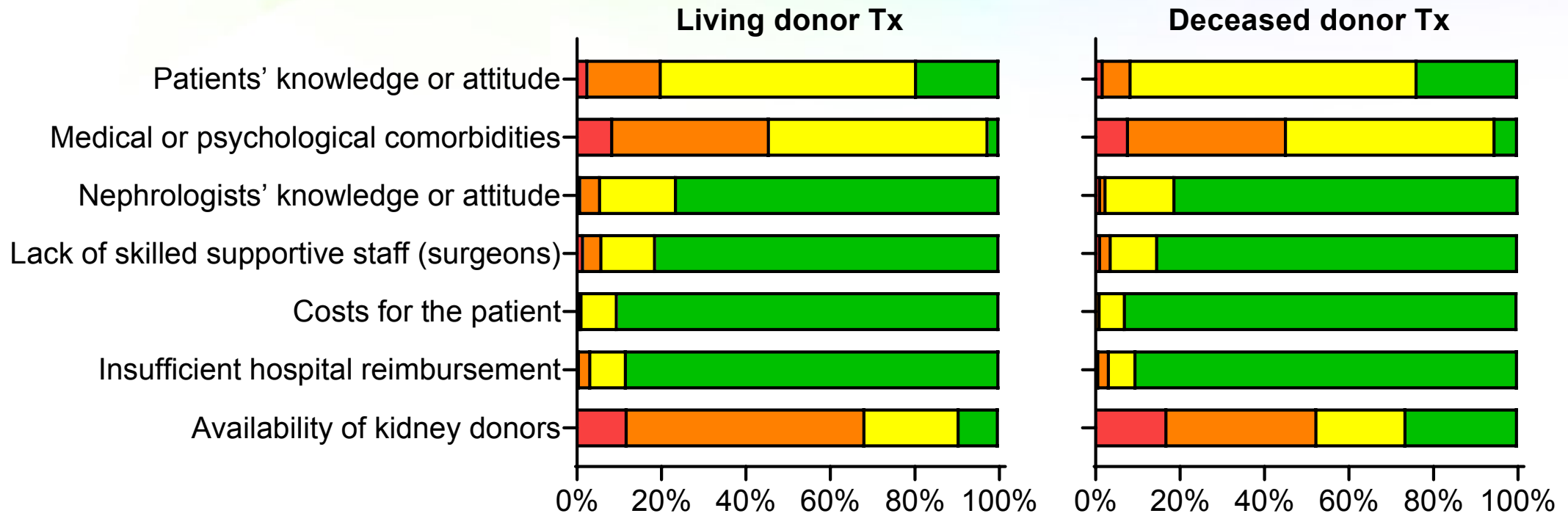
Barriers if treatments are unavailable – all respondents



Barriers if treatments are available – all respondents

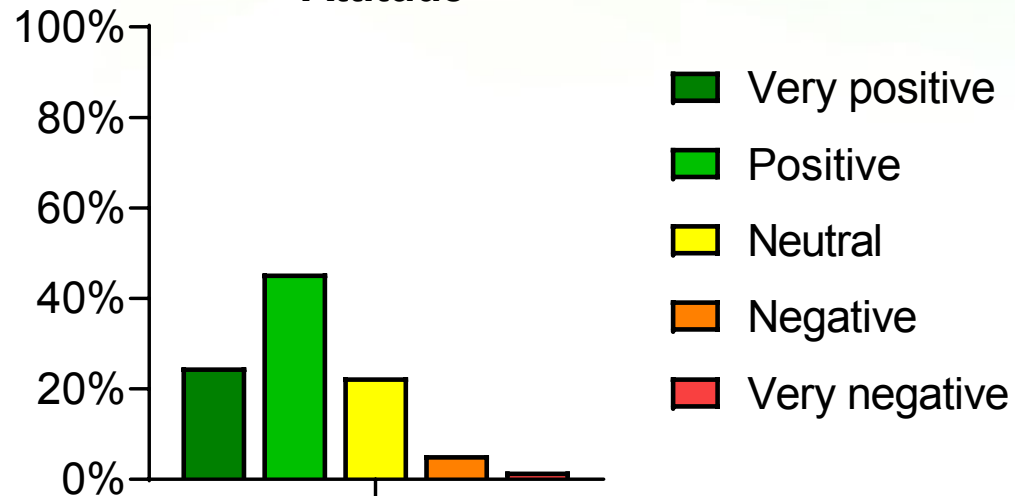


Barriers if treatments are available – all respondents



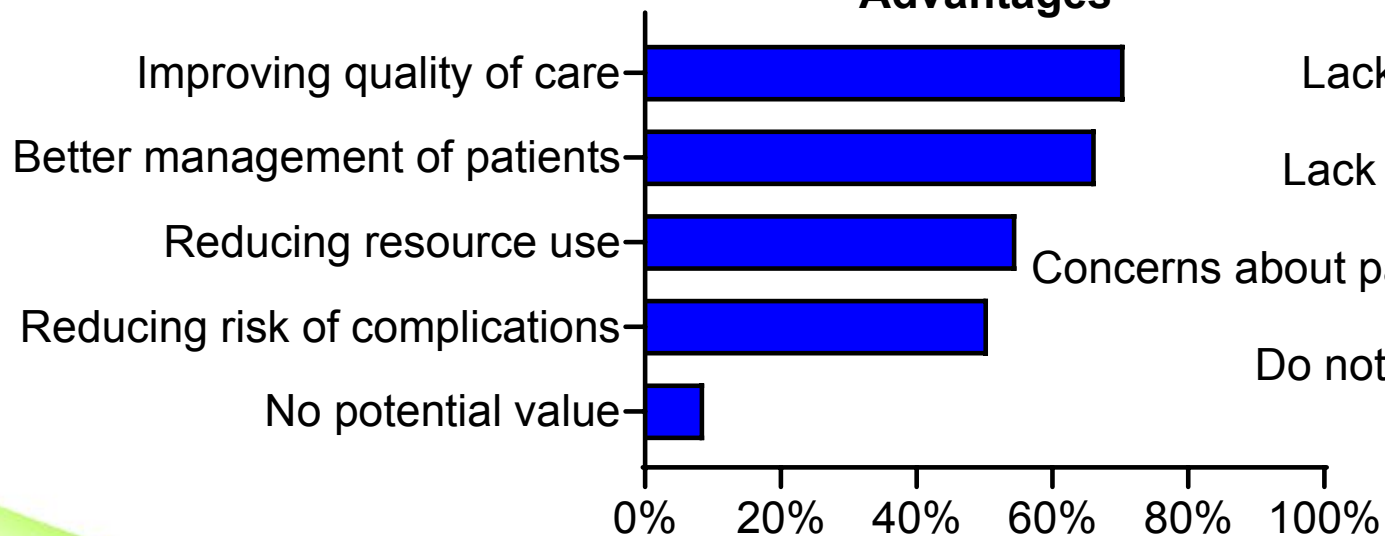
Remote patient management – quantitative results

Attitude

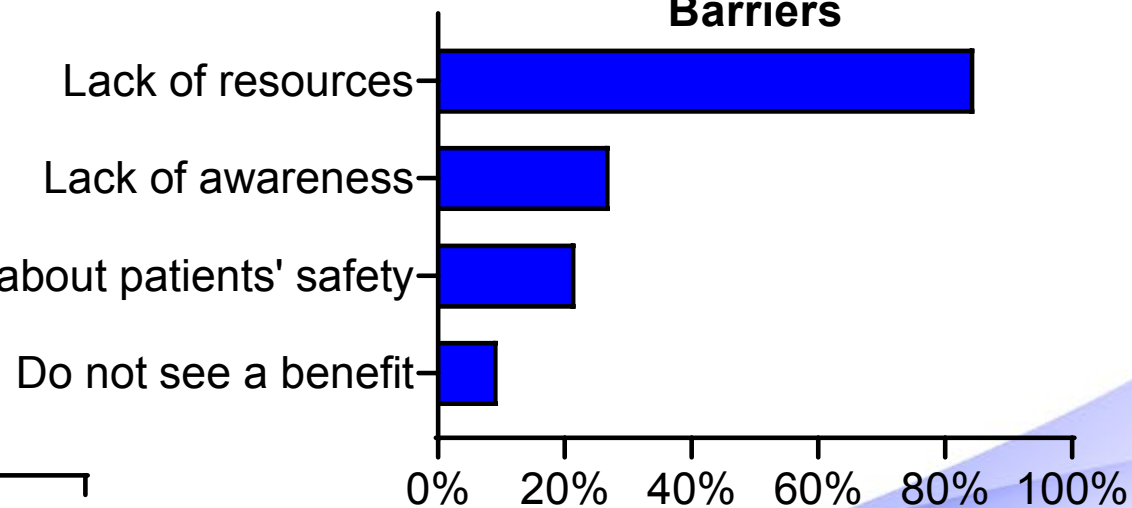


26.2% of our respondents uses RPM, mostly for PD

Advantages



Barriers



Remote patient management – qualitative results

- + "Helping patients in **places without doctors, nurses** (islands etc)" (Male nephrologist, 41-60 years, Greece)
- + "It may make **home dialysis more acceptable** for patients and professionals " (Male nephrologist, 41-60 years, the Netherlands)
- + "**Better compliance and self-care** when some of the responsibility is placed on the patient" (Female nephrologist, ≤40 years, Denmark)
- "Low level of **living conditions** of patients " (Female nephrologist, 41-60 years, Russia)
- "**IT safety concerns** from the hospital management" (Female nephrologist, 41-60 years, Sweden)
- "It should not lead physicians to **less communication with the patient**" (Female nephrologist, ≥61 years, Turkey)

Conclusion

Substantial European differences in the frequency of RRT and CCM indicate the need for improvement in access to various treatment options for patients with ESKD.

Several factors may help to improve access:

For home dialysis

- reimbursement for patients
- educating patients and healthcare professionals

For kidney transplantation

- organized donor coordination
- optimization of the donation processes
- provision of appropriate legal and financial frameworks

For comprehensive conservative management

- educating patients and healthcare professionals
- more balanced and equitable reimbursement of patients and dialysis modalities

Conclusion

- **National and regional renal registries** are very valuable in assessing the frequency of RRT, and could therefore play an important role in reducing inequalities in kidney care
- Measures to improve the situation should be guided by the experiences of **nephrologists and patients**
- Remote patient management is accepted by nephrologists and could improve care, but lack of resources is a large barrier
- The results of the surveys suggest that factors influencing modality choice, including barriers, for providing RRT and CCM to patients with ESKD, **differ across GDP tertiles**
- We need **to identify and implement measures** which are **tailored to clusters of countries** with similar characteristics with the ultimate objective of providing equal access to good quality healthcare throughout the European Union

Acknowledgements

EDITH kidney patient survey

We are very grateful to all patients who filled out the EDITH kidney patient survey. In addition, we are grateful to all patients who pre-tested the survey, provided advice about the content of the survey or helped to distribute the survey in their country or personal network.

EDITH Nephrologist survey

We sincerely thank all nephrologists and kidney transplant surgeons who filled out the EDITH Nephrologist survey. In addition, we would like to thank all colleagues who pre-tested the survey, provided advice about the ethical approval in their country or helped to distribute the survey in their country or personal network.

Team

Dr. Vianda S. Stel; Prof. dr. Ziad A Massy; Prof. dr. Kitty J Jager

Thank you for your attention

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