srrqap

swiss renal registry and quality assessment program

Annual Report 2024

Swiss Renal Registry and Quality Assessment Program

Contact information:

Rebecca Guidotti and Patrice M. Ambühl
Stadtspital Zürich
Institute of Nephrology
Tièchestrasse 99
CH-8037 Zürich
Phone +41 44 417 21 55
rebecca.guidotti@stadtspital.ch, patrice.ambuehl@stadtspital.ch

List of abbreviations

Abbreviation	Term
DM	Diabetes mellitus
ERA Registry	European Renal Association
FL	Principality of Liechtenstein
GN	Glomerulonephritis/sclerosis
HD	Hemodialysis
HT	Hypertension
KRT	Kidney replacement therapy
Misc	Miscellaneous
PD	Peritoneal dialysis
PKD	Polycystic kidney disease
pmp	per million population
PN	Pyelonephritis
PTH	Parathyroid hormone
RVD	Renal vascular disease
SRRQAP	Swiss Renal Registry and Quality Assessment Program

Inhalt

1 Board of the SRRQAP

Belén Ponte (president)
Patrice Ambühl (director)
Fabienne Aregger
Lorenzo Berwert
Clemens Jäger
Michael Koller
Menno Pruijm (ex officio)
Rebecca Guidotti (ex officio)

2 Summary

In Switzerland, a total of 4'919 patients were recorded in the dialysis registry in 2024. This cumulative figure includes all patients who underwent chronic dialysis at any point during the year, regardless of whether they were still on dialysis by the end of the year. Of these, 810 patients started dialysis in 2024 (incident cases), and 3'974 were on dialysis at the end of the year (prevalent cases).

The vast majority of patients – around 3'650 individuals (91.9%) – underwent hemodialysis (HD), while 321 patients (8.1%) were treated with peritoneal dialysis (PD) at the end of the year. For 3 patients, the dialysis modality was not known.

Gender distribution showed a notable imbalance among dialysis patients: 64.5% (2'562 patients) were male and 35.5% (1'412 patients) were female. This pattern is commonly observed in dialysis populations worldwide, despite higher prevalence of chronic kidney disease among women.

The median age of prevalent patients on dialysis has increased by 2.8 years since 2014, reaching 73.3 years in 2024, reflecting the steady aging of this population.

Dialysis care was provided by 101 centers nationwide, including both public and private facilities, providing access in both urban and rural areas. Of these centers, 57 (56.4%) were publicly operated and 44 (43.6%) were privately run, with approximately 69.7% of patients dialyzed in public centers and 30.3% in private centers.

Regional distribution reflected Switzerland’s linguistic and geographic diversity: 970 patients (24.4%) resided in the French-speaking Romandie, 282 (7.1%) in the Italian-speaking Ticino, and the largest group – 2'722 patients (68.5%) – in the German-speaking regions. This distribution broadly mirrored population density and healthcare infrastructure.

The leading causes of kidney failure were renal vascular disease due to hypertension (798 patients, 20.1%), diabetes mellitus (696 patients, 17.5%), unknown causes (349 patients, 8.8%), and autosomal dominant polycystic kidney disease (276 patients, 6.9%).

Comorbidities were common: 37.3% of dialysis patients had cardiomyopathy, 35.6% type 2 diabetes, and 33.6% coronary heart disease.

In 2024, 605 dialysis patients (12.3%) died. Patients on center-based dialysis had been treated for an average of 4.3 years, compared with 2.8 years for home dialysis patients – largely due to a higher transplantation rate.

Encouragingly, 307 kidney transplants were performed in 2024, offering those patients an opportunity to live free of dialysis.

This report provides an overview of the current landscape of dialysis care in Switzerland, including patient demographics, treatment modalities, comorbidities, and regional trends. While Switzerland offers high-quality dialysis care through a robust healthcare infrastructure, the burden of chronic kidney disease remains substantial.

Since 2015, the Swiss Dialysis Registry has been submitting individual-level data to the European Renal Registry (ERA) in Amsterdam. Due to reporting timelines, ERA data are typically published with a two-year delay. As a result, the ERA figures in this report refer to 2022, while data from 2024 will become available in autumn 2026. The ERA Registry focuses on end-stage renal disease and, unlike the dialysis registry, also includes prevalent transplant recipients. To ensure our data are included in the ERA Annual Report, we therefore also collect information on transplant recipients in Switzerland.

3 Incidence of dialysis patients from 2018-2024

3.1 Number of patients starting dialysis treatment, and incidence of dialysis patients by canton

Canton	Number of patients starting dialysis				Incidence of dialysis patients (pmp)			
	2018	**2020**	**2022**	**2024**	**2018**	**2020**	**2022**	**2024**
AG	58	58	59	63	85.5	83.6	83.0	85.6
AI	0	0	0	0	0.0	0.0	0.0	0.0
AR	6	3	4	6	108.6	54.2	71.7	105.8
BE	116	87	97	102	112.1	83.4	92.3	95.2
BL	22	36	21	22	76.4	123.7	71.3	73.0
BS	33	27	32	32	169.4	137.2	162.6	158.9
FR	20	17	18	10	62.8	52.2	53.8	28.8
GE	54	38	50	45	108.1	75.0	97.3	84.7
GL	6	2	6	4	148.5	49.0	144.7	94.4
GR	19	19	16	17	95.8	95.0	79.0	82.5
JU	11	12	11	14	149.8	162.8	148.9	187.1
LU	27	36	43	24	65.9	86.5	101.2	54.8
NE	24	24	22	17	135.7	136.4	124.6	94.7
NW	0	0	0	0	0.0	0.0	0.0	0.0
OW	0	0	0	0	0.0	0.0	0.0	0.0
SG	39	59	56	45	76.8	114.7	106.5	83.3
SH	4	7	13	10	48.8	84.2	152.6	112.8
SO	29	40	30	33	106.2	144.2	106.2	113.9
SZ	13	16	10	14	81.7	98.7	60.6	82.9
TG	15	18	25	18	54.3	63.6	86.3	60.1
TI	61	58	66	56	172.6	165.2	186.4	156.0
UR	4	2	2	1	109.8	54.3	53.6	26.1
VD	75	68	84	91	93.9	83.5	101.2	106.4
VS	39	29	40	32	113.4	83.2	112.0	86.2
ZG	7	13	8	12	55.2	100.9	61.0	89.7
ZH	130	120	127	132	85.5	77.2	80.4	81.5
FL	4	9	7	10	104.2	230.4	176.4	244.5
German-speaking CH	536	558	564	551	89.1	91.3	90.8	86.4
French-speaking CH	219	182	217	203	99.0	81.1	94.9	86.1
Italian-speaking CH	61	58	66	56	172.6	165.2	186.4	156.0
All	816	798	847	810	95.1	91.6	95.7	89.1

Table 1. FL=Principality of Liechtenstein; Incidence (pmp) is based on the location of the dialysis center, not the patients' place of residence.

3.2 Number and percentage of patients starting dialysis treatment by type of center (public/private)

Center	Number (percentage) of patients starting dialysis			
	2018	**2020**	**2022**	**2024**
Private center	202 (24.8)	223 (27.9)	225 (26.6)	245 (30.2)
Public center	614 (75.2)	575 (72.1)	622 (73.4)	565 (69.8)
All	816	798	847	810

Table 2

3.3 Number of patients starting dialysis treatment by age group and sex

Age group		Number of patients starting dialysis				Incidence of dialysis patients (pmp)			
		2018	**2020**	**2022**	**2024**	**2018**	**2020**	**2020**	**2024**
0-19 yrs	Men	10	6	8	13	11.4	6.8	8.9	14.0
	Women	6	2	2	4	7.2	2.4	2.3	4.6
	Total	16	8	10	17	9.4	4.6	5.7	9.5
20-44 yrs	Men	44	48	44	44	30.4	32.8	29.7	28.8
	Women	23	28	33	22	16.4	19.7	23.0	15.0
	Total	67	76	77	66	23.5	26.4	26.4	22.0
25-64 yrs	Men	147	143	154	128	121.5	117.0	125.1	102.8
	Women	61	83	74	75	51.0	68.6	60.6	60.4
	Total	208	226	228	203	86.4	92.9	93.0	81.6
64-74 yrs	Men	172	139	133	146	435.0	347.1	325.0	344.1
	Women	75	77	82	61	174.1	176.4	184.7	132.7
	Total	247	216	215	207	299.0	258.0	252.0	234.1
≥ 75 yrs	Men	204	193	222	207	663.1	584.9	627.5	548.8
	Women	74	79	95	110	166.8	170.8	196.0	216.5
	Total	278	272	317	317	370.1	343.2	378.1	358.1
All	Men	577	529	561	538	136.2	122.9	128.1	119.5
	Women	239	269	286	272	55.5	61.6	64.5	59.8
	Total	816	798	847	810	95.5	92.0	96.1	89.5

Table 3. Data from the Principality of Liechtenstein are not included in the incidence, causing a minimal difference in total pmp values compared to Table 3.1.

3.4 Incidence of dialysis patients according to diagnosis

	All		GN		PN		PKD		DM				HT		RVD		Misc		Unknown	
									Type 1		Type 2									
	pmp	%	pmp	%	pmp	%	pmp	%	pmp	%	pmp	%	pmp	%	pmp	%	pmp	%	pmp	%
2018	95.1	100	15.6	16.4	3.1	3.3	6.4	6.7	3.0	3.2	18.2	19.1	20.5	21.6	3.7	3.9	18.4	19.4	6.1	6.4
2020	91.6	100	13.2	14.4	0.9	1.0	6.3	6.9	3.0	3.3	14.5	15.8	19.4	21.2	4.2	4.6	21.4	23.3	8.7	9.5
2022	95.7	100	15.7	16.4	2.0	2.1	6.5	6.8	2.6	2.7	18.2	19.0	20.0	20.9	3.8	4.0	16.6	17.4	10.2	10.6
2024	89.1	100	12.3	13.8	2.1	2.3	5.5	6.2	1.8	2.0	15.0	16.8	20.0	22.5	3.5	4.0	20.6	23.1	8.4	9.4

Table 4. Abbreviations used: GN: glomerulonephritis/sclerosis; PN: pyelonephritis; PKD: polycystic kidney disease, adult type; DM: diabetes mellitus; HT: hypertension; RVD: renal vascular disease; Misc: miscellaneous

3.5 Age at start of dialysis according to dialysis modality (mean and median)

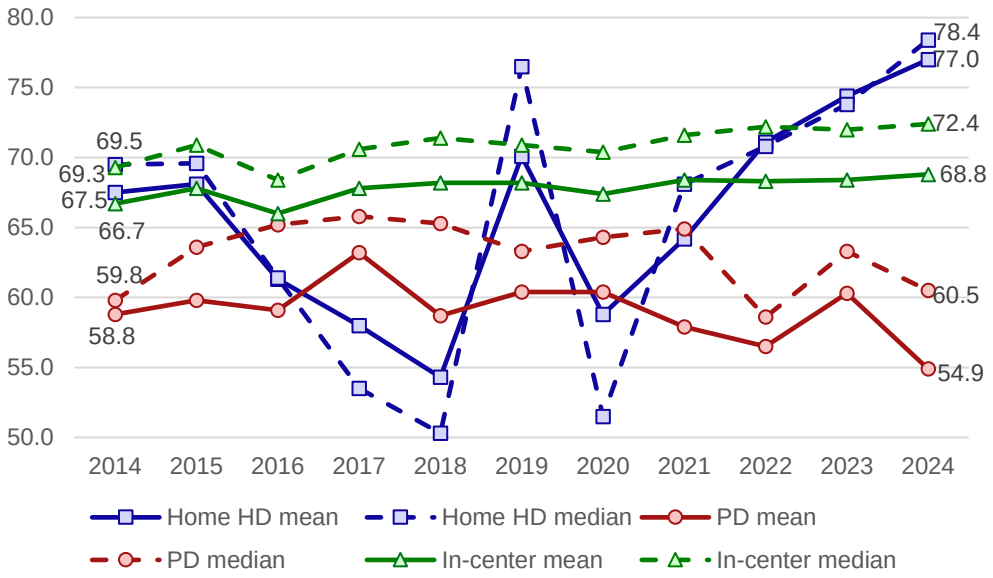

Figure 1. The fluctuations in the Home HD values are attributable to the small sample size.

3.6 Type of treatment at start of KRT

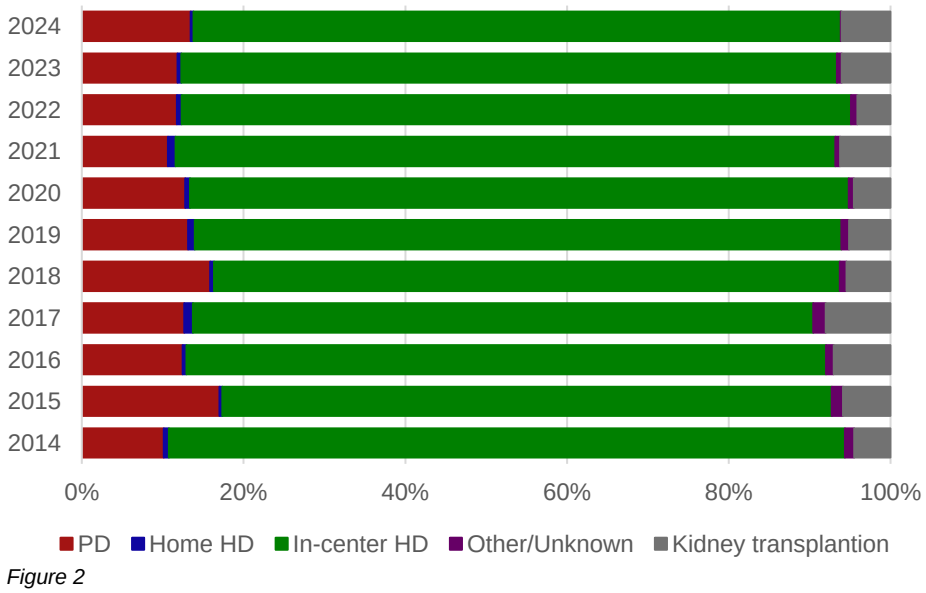

Figure 2

3.7 International comparison of incidence of KRT in 2022

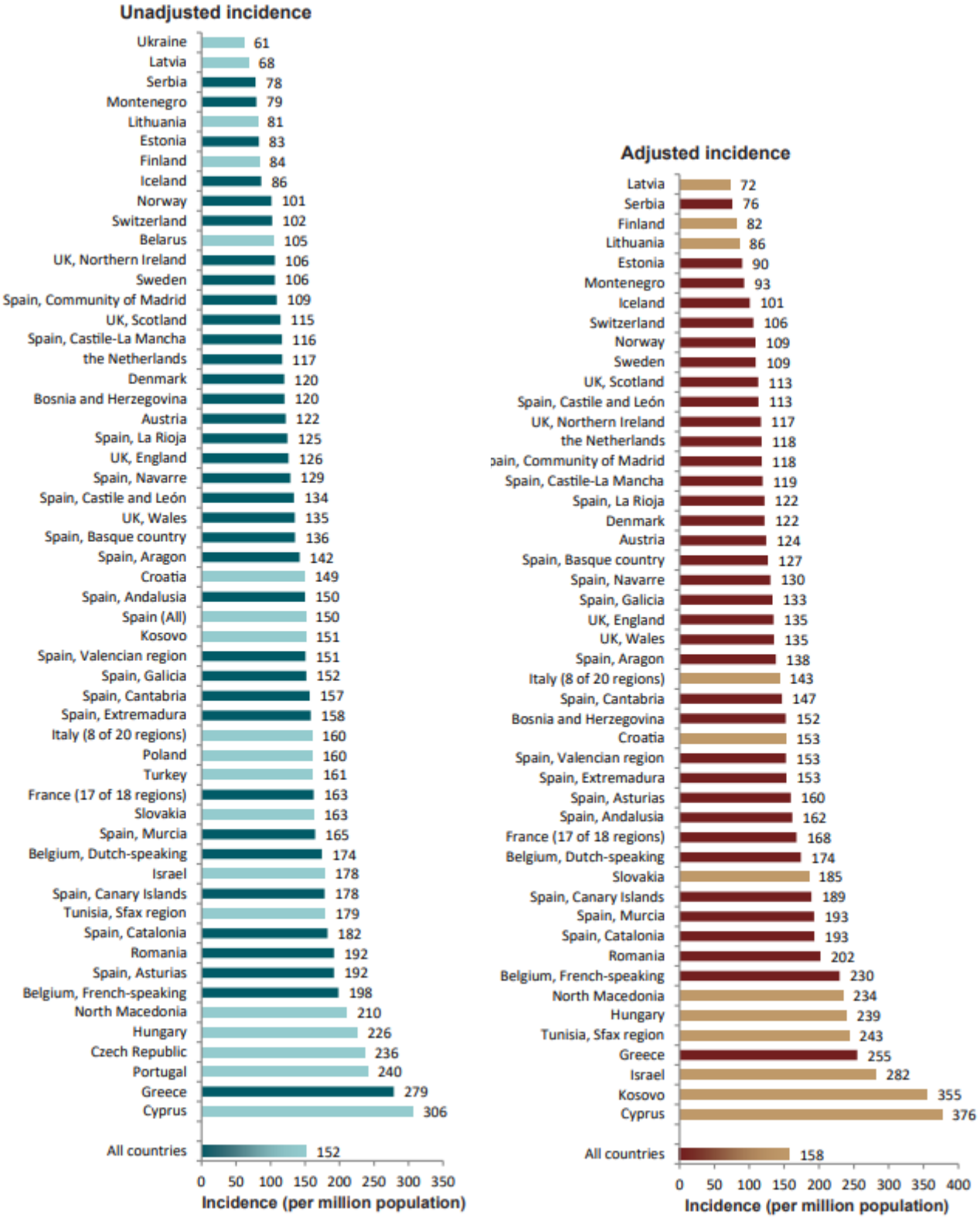

Figure 3

Registries providing individual patient data are shown as dark bars, and registries providing aggregated data as light bar. Adjustment of the incidence was performed by standardizing the incidence to the age and sex distribution of the EU27 population.

4 Prevalence of dialysis patients from 2018-2024

4.1 Number and prevalence of patients on dialysis according to canton

Canton	Number of dialysis patients at the end of the year				Prevalence of dialysis patients (pmp)			
	2018	**2020**	**2022**	**2024**	**2018**	**2020**	**2022**	**2024**
AG	300	270	290	288	442.3	389.0	407.7	391.4
AI	0	0	0	0	0.0	0.0	0.0	0.0
AR	25	22	27	26	452.6	397.8	484.2	458.5
BE	507	487	472	477	489.9	466.9	448.9	445.3
BL	116	121	114	108	402.6	415.9	387.2	358.4
BS	117	127	122	130	600.7	645.5	620.0	645.5
FR	85	83	92	88	266.7	255.0	275.1	253.8
GE	212	225	220	207	424.4	444.4	427.9	389.8
GL	24	17	20	20	594.0	416.1	482.3	472.0
GR	71	81	88	103	357.9	404.8	434.5	499.7
JU	49	46	61	54	667.4	624.1	825.8	721.5
LU	136	142	159	163	332.1	341.1	374.2	372.2
NE	89	96	97	89	503.3	545.8	549.4	495.8
NW	0	0	0	0	0.0	0.0	0.0	0.0
OW	0	0	0	0	0.0	0.0	0.0	0.0
SG	192	236	253	247	378.2	458.7	481.0	457.4
SH	40	48	44	46	487.9	577.6	516.3	518.8
SO	116	131	135	138	424.6	472.1	478.0	476.2
SZ	69	62	63	57	433.5	382.3	382.0	337.4
TG	75	77	84	91	271.3	272.2	290.0	303.8
TI	299	290	291	282	846.2	826.2	822.0	785.7
UR	16	13	13	14	439.2	353.1	348.4	365.8
VD	386	385	394	433	483.0	472.5	474.5	506.4
VS	162	150	160	132	471.0	430.4	447.8	355.5
ZG	48	48	57	54	378.4	372.7	434.6	403.8
ZH	618	638	656	681	406.3	410.7	415.2	420.4
FL	34	40	40	46	885.9	1024.2	1008.1	1124.7
German-speaking CH	2531	2591	2668	2722	420.6	423.8	429.3	427.0
French-speaking CH	956	954	993	970	432.3	425.0	434.2	411.3
Italian-speaking CH	299	290	291	282	846.2	826.2	822.0	785.7
All	3786	3835	3952	3974	441.1	440.3	446.3	437.1

Table 5. FL=Principality of Liechtenstein; Incidence (pmp) is based on the location of the dialysis center, not the patients' place of residence.

4.2 Number and percentage of prevalent dialysis patients by type of center (public/private)

Center	Number (percentage) of prevalent patients			
	2018	**2020**	**2022**	**2024**
Private center	1024 (27.0)	1140 (29.7)	1142 (28.9)	1203 (30.3)
Public center	2762 (73.0)	2695 (70.3)	2810 (71.1)	2771 (69.7)
All	3786	3835	3952	3974

Table 6

4.3 Number and prevalence of patients on dialysis by age group and sex

Age group		Number of dialysis patients at the end of the year				Prevalence of dialysis patients (pmp)			
		2018	**2020**	**2022**	**2024**	**2018**	**2020**	**2022**	**2024**
0-19 yrs	Men	12	7	13	22	13.7	7.9	14.4	23.7
	Women	4	3	6	8	4.8	3.6	7.0	9.2
	Total	16	10	19	30	9.4	5.8	10.8	16.7
20-44 yrs	Men	175	184	176	170	121.1	125.9	118.6	111.4
	Women	86	88	109	97	61.1	62.0	76.1	66.0
	Total	261	272	285	267	91.5	94.4	97.7	89.1
25-64 yrs	Men	663	669	636	589	548.1	547.2	516.8	473.0
	Women	345	344	350	345	288.4	284.1	286.5	277.7
	Total	1008	1013	986	934	418.9	416.3	402.1	375.4
64-74 yrs	Men	662	633	619	606	1674.2	1580.5	1512.6	1428.2
	Women	382	385	377	340	886.9	881.8	849.1	739.5
	Total	1044	1018	996	946	1263.8	1216.1	1167.3	1070.0
≥ 75 yrs	Men	951	999	1103	1175	3091.3	3027.7	3117.5	3115.3
	Women	506	523	563	622	1140.8	1130.6	1161.8	1224.5
	Total	1457	1522	1666	1797	1939.6	1920.4	1987.1	2030.2
All	Men	2463	2492	2547	2562	581.3	579.2	581.5	569.3
	Women	1323	1343	1405	1412	307.1	307.5	316.8	310.3
	Total	3786	3835	3952	3974	443.1	442.3	448.3	439.1

Table 7. Data from the Principality of Liechtenstein are not included in the prevalence, causing a minimal difference in total pmp values compared to Table 4.1.

4.4 Prevalence of dialysis patients according to diagnosis

	All		GN		PN		PKD		DM				HT		RVD		Misc		Unknown	
									Type 1		Type 2									
	pmp	%	pmp	%	pmp	%	pmp	%	pmp	%	pmp	%	pmp	%	pmp	%	pmp	%	pmp	%
2018	441.1	100	82.0	18.6	14.2	3.2	31.1	7.1	14.2	3.2	77.0	17.5	81.0	18.4	20.6	4.7	84.6	19.2	36.4	8.2
2020	440.3	100	78.7	17.9	11.7	2.7	34.2	7.8	14.6	3.3	74.6	16.9	83.9	19.1	19.3	4.4	84.9	19.3	38.5	8.7
2022	446.2	100	81.4	18.2	13.6	3.0	33.4	7.5	15.2	3.4	75.1	16.8	83.0	18.6	19.1	4.3	82.9	18.6	42.5	9.5
2024	437.2	100	72.4	16.6	12.8	2.9	30.5	7.0	10.1	2.3	76.6	17.5	87.8	20.1	18.0	4.1	90.7	20.8	38.4	8.8

Table 8. Abbreviations used: GN: glomerulonephritis/sclerosis; PN: pyelonephritis; PKD: polycystic kidney disease, adult type; DM: diabetes mellitus; HT: hypertension; RVD: renal vascular disease; Misc: miscellaneous

4.5 Age in prevalent dialysis patients according dialysis modality (mean and median)

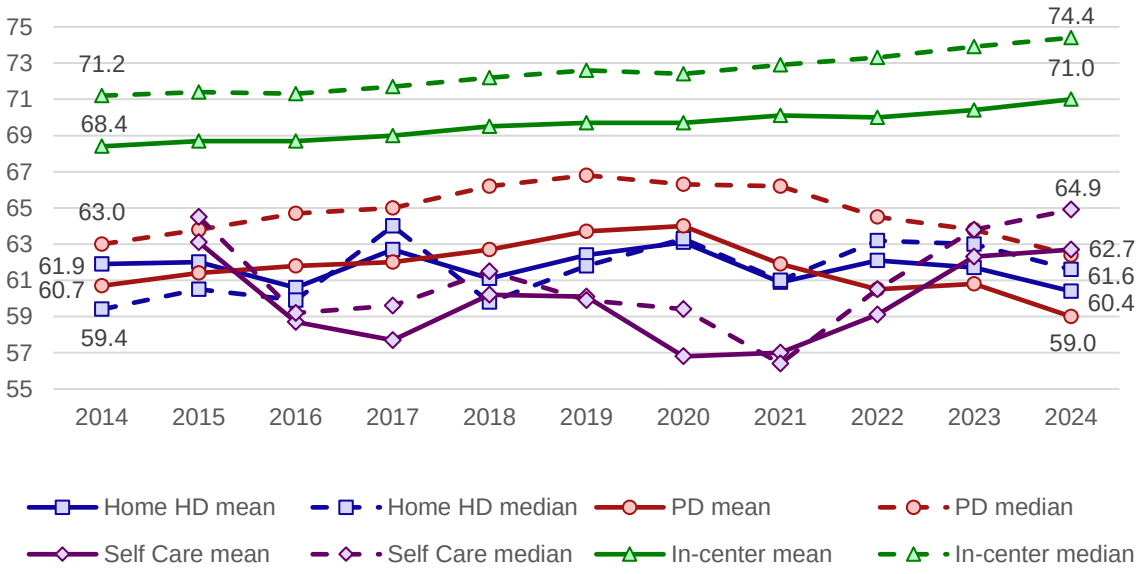

Figure 4

4.6 Type of treatment in prevalent KRT

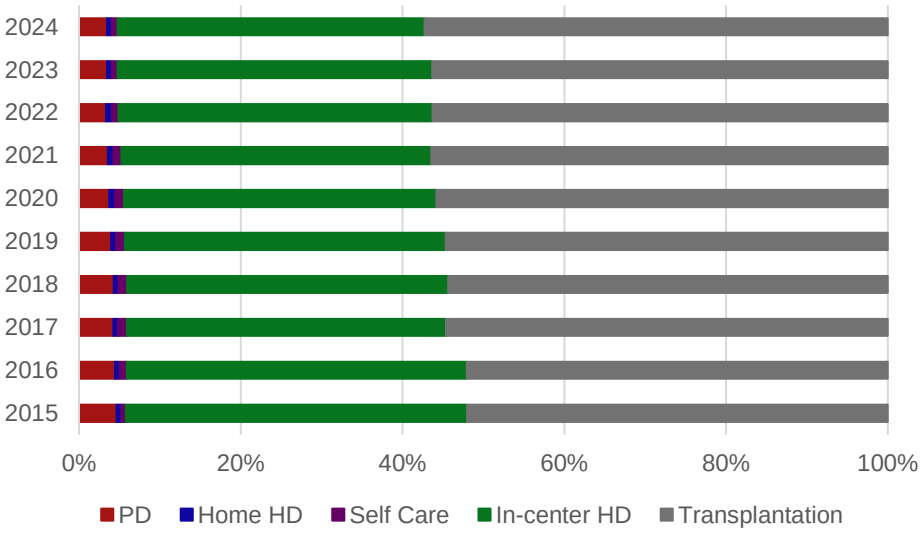

Figure 5

4.7 International comparison of prevalence of KRT on 31 December 2022

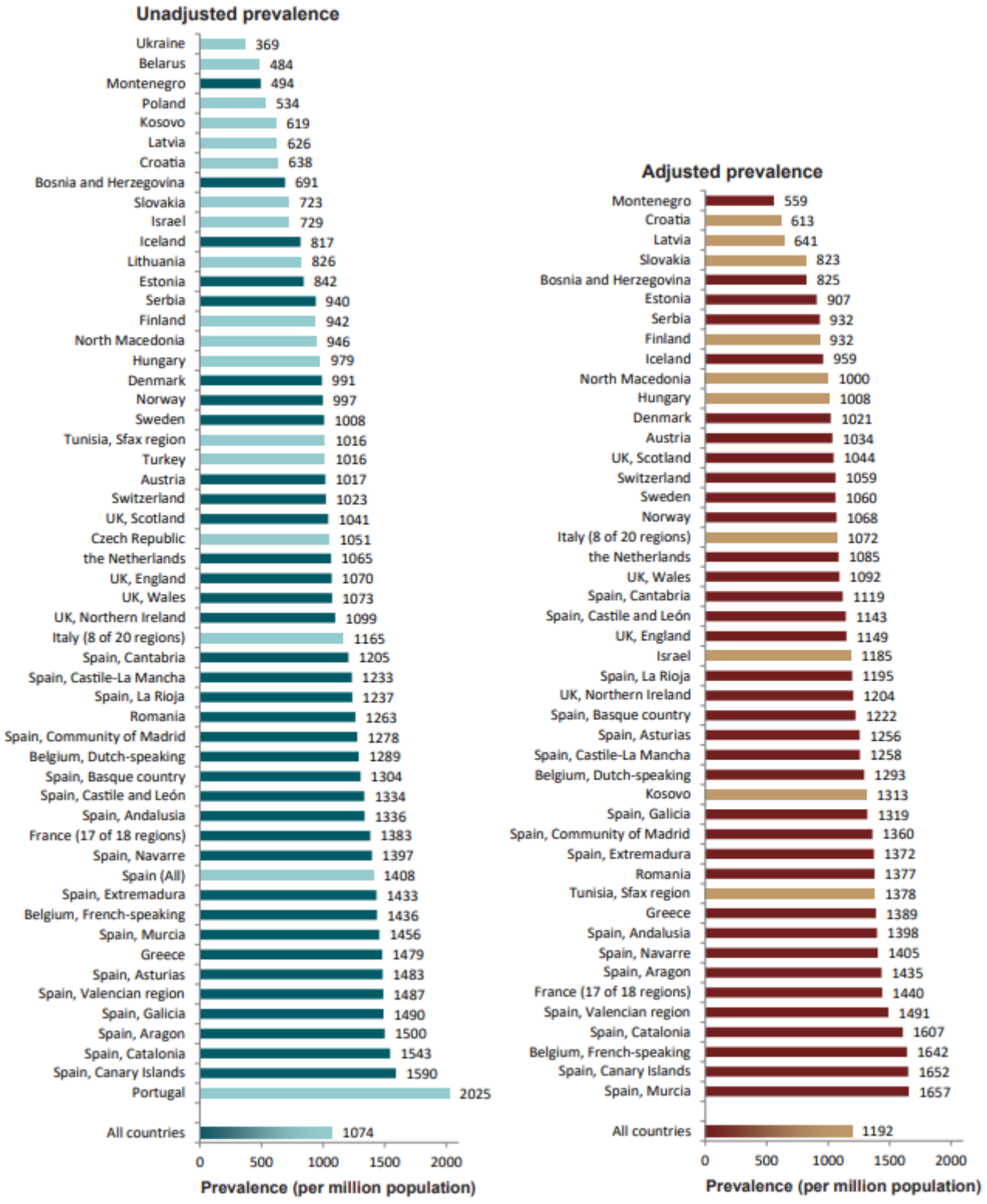

Figure 6

Registries providing individual patient data are shown as dark bars, and registries providing aggregated data as light bar. Adjustment of the incidence was performed by standardizing the incidence to the age and sex distribution of the EU27 population.

5 Age

The following graph shows the trend (mean and median) between 2014 and 2024.

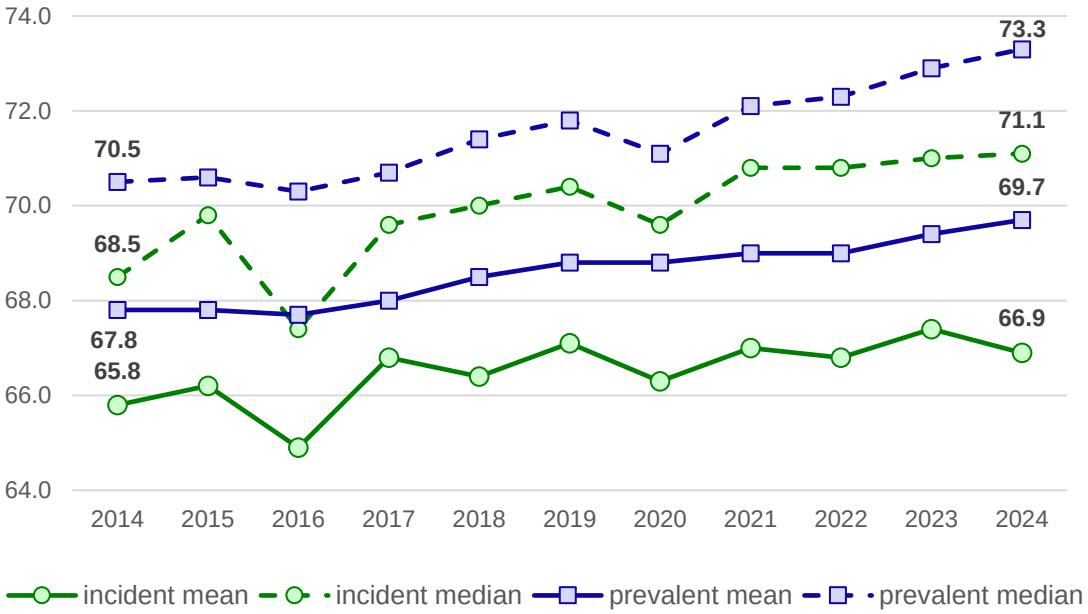

Figure 7

6 Primary renal disease

The following graph shows the frequency (%) of original renal disease in prevalent patients (given for those with a frequency ≥ 1 percent) in the year 2024.

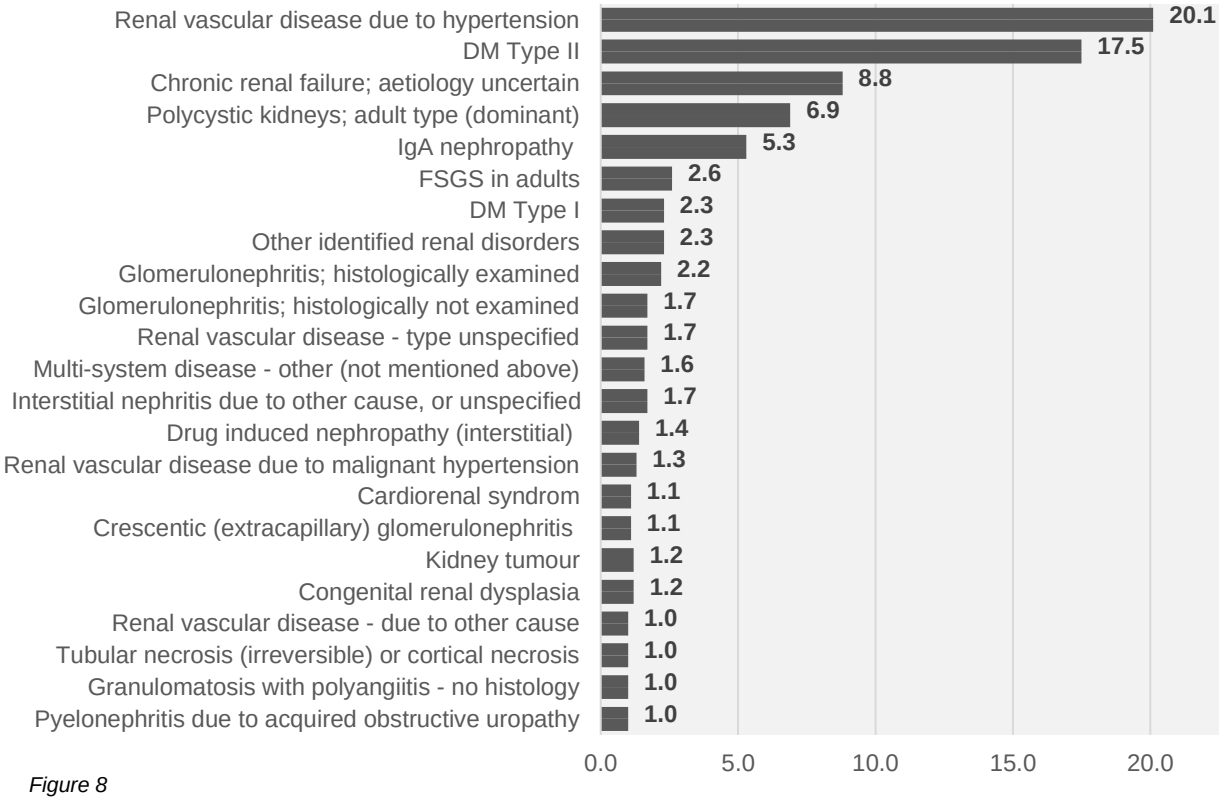

Figure 8

7 Comorbidities

The following graph shows the frequency (%) of comorbidities in prevalent patients in the year 2024.

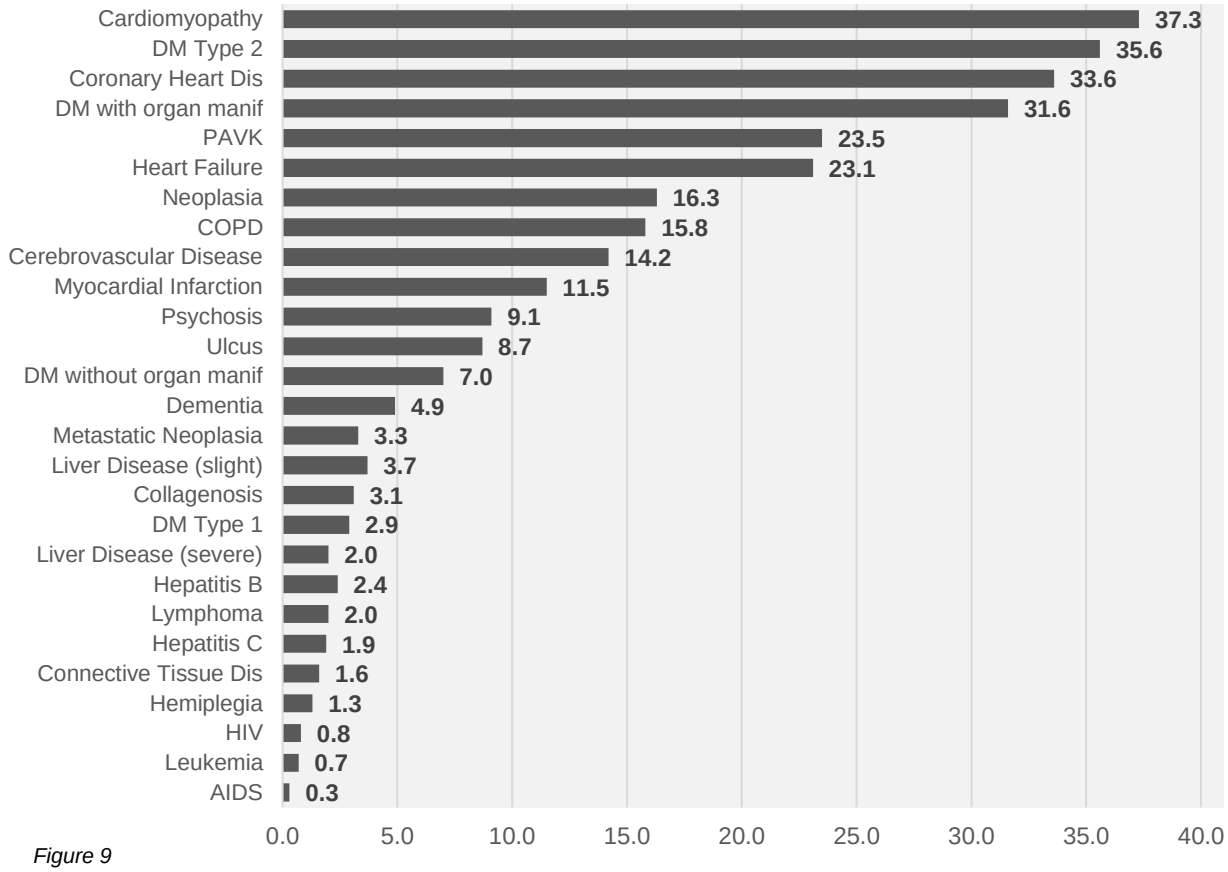

Figure 9

8 Dialysis specific data

8.1 Vascular access in HD patients by region

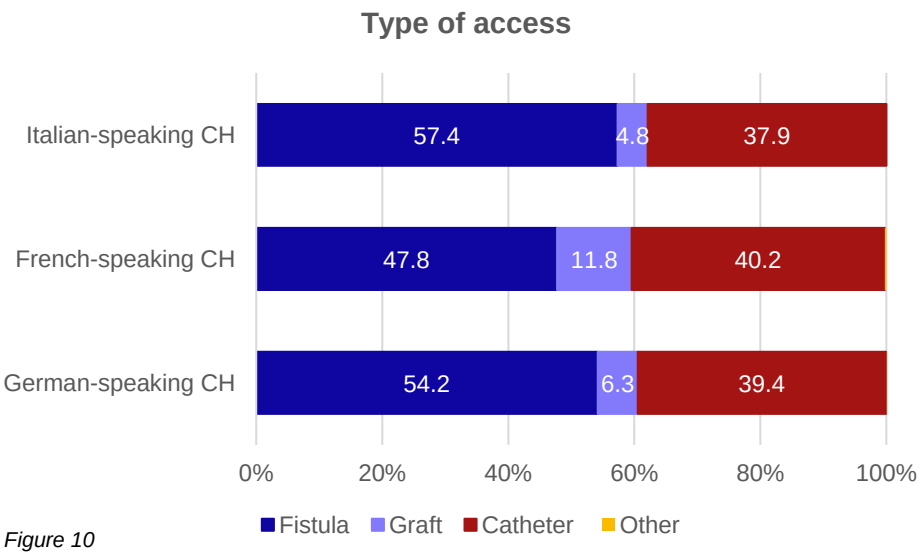

Figure 10

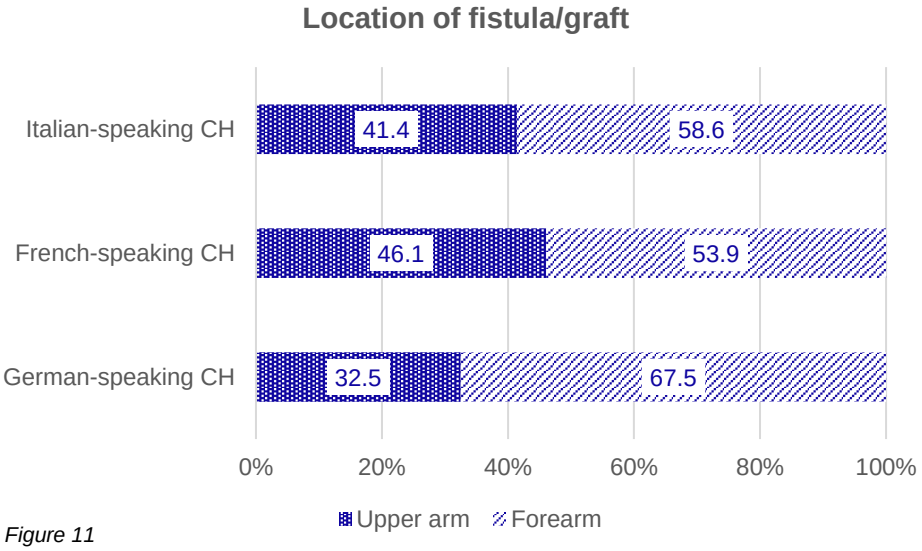

Figure 11

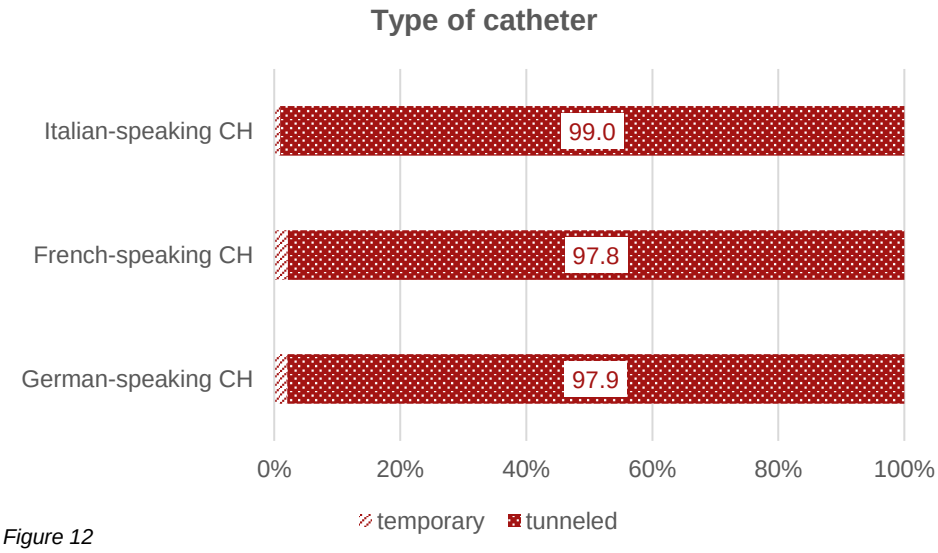

Figure 12

8.2 Number and duration of HD sessions by region

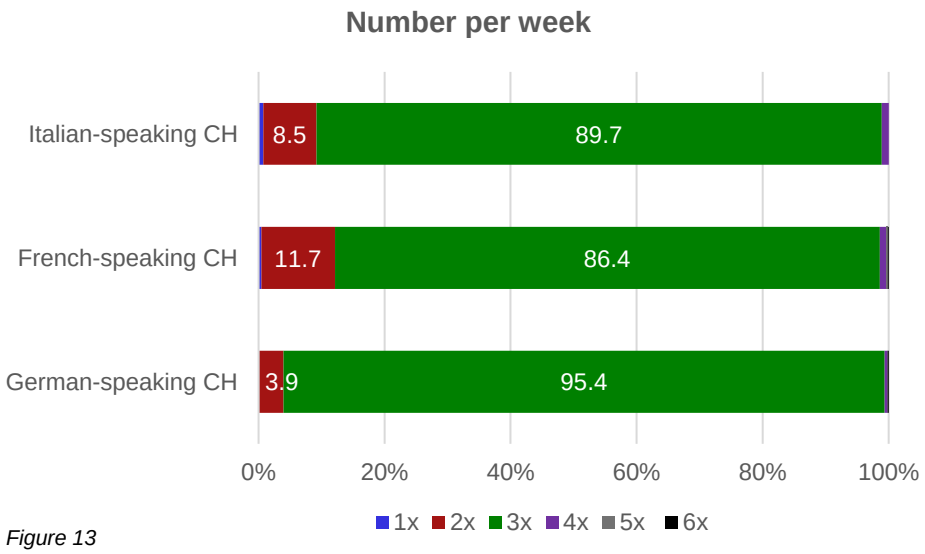

Figure 13

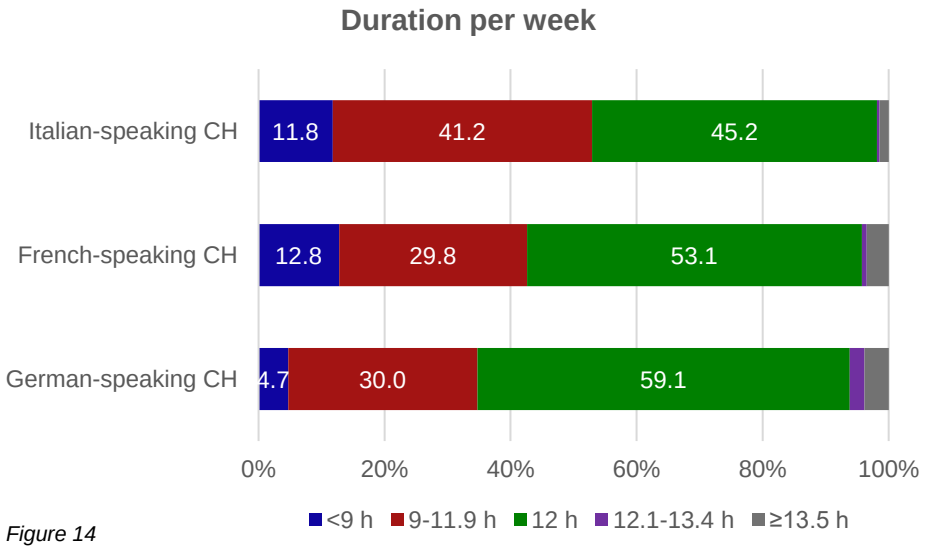

Figure 14

From 2014 to 2024, the incremental dialysis percentage has steadily increased in all language regions of Switzerland. The French-speaking region consistently showed the highest rates, rising from 2.1% in 2014 to 11.7% in 2024. The Italian-speaking region saw a strong increase, particularly after 2021, reaching 9.1% in 2024. The German-speaking region experienced a more gradual rise, from 2.2% in 2014 to 4.2% in 2024. Overall, the data highlight a continuing increase in incremental dialysis, with the French-speaking area showing the steepest increase.

8.3 Kt/V

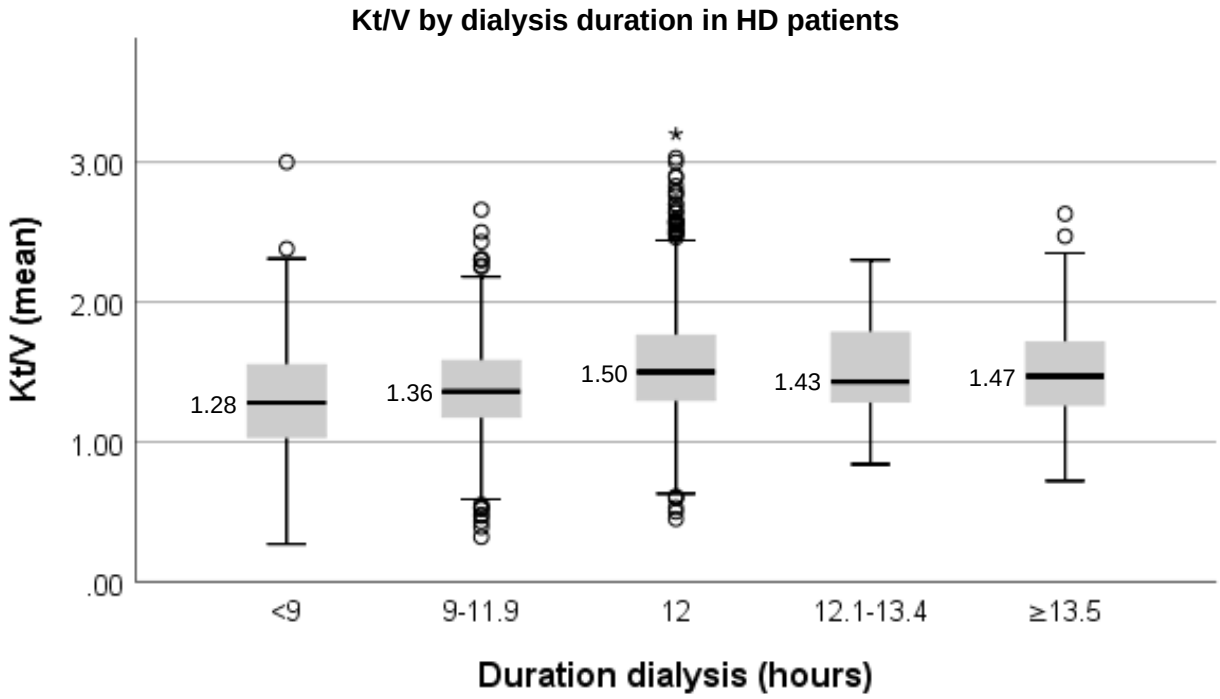

Figure 15. Kt/V values: indirectly measured (machine-derived), single-pool calculated, and double-pool (equilibrated)

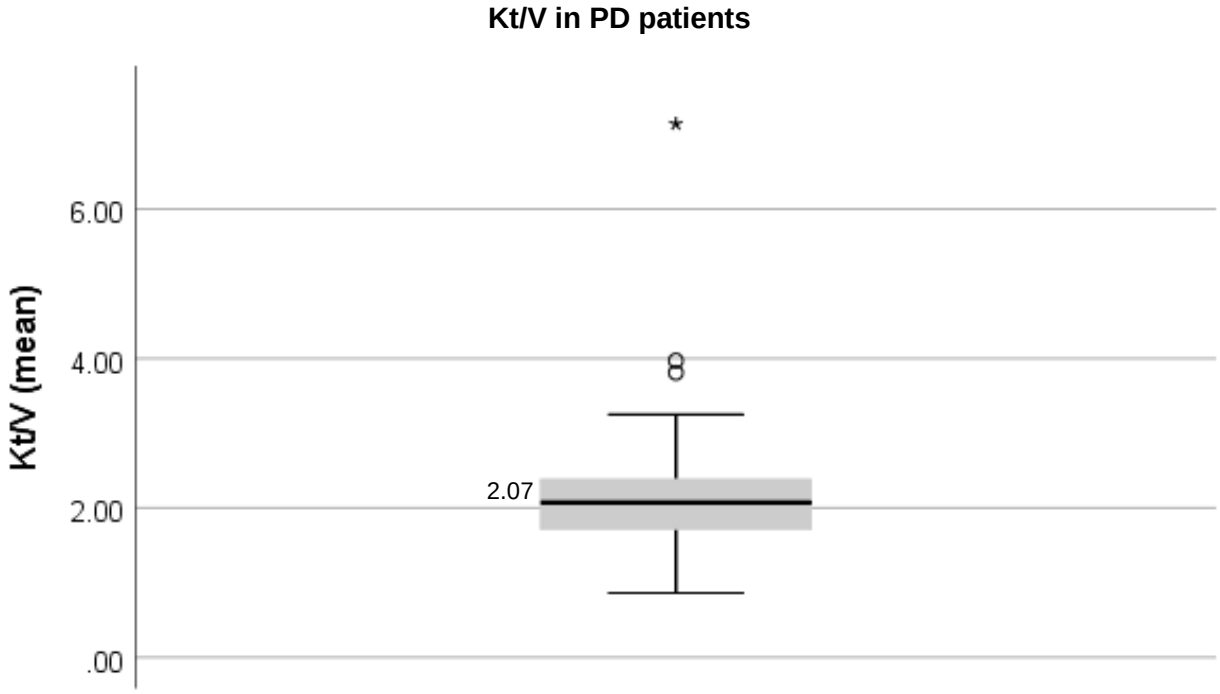

Figure 16. Kt/V values: peritoneal only, and total (peritoneal plus renal)

8.4 Residual renal function

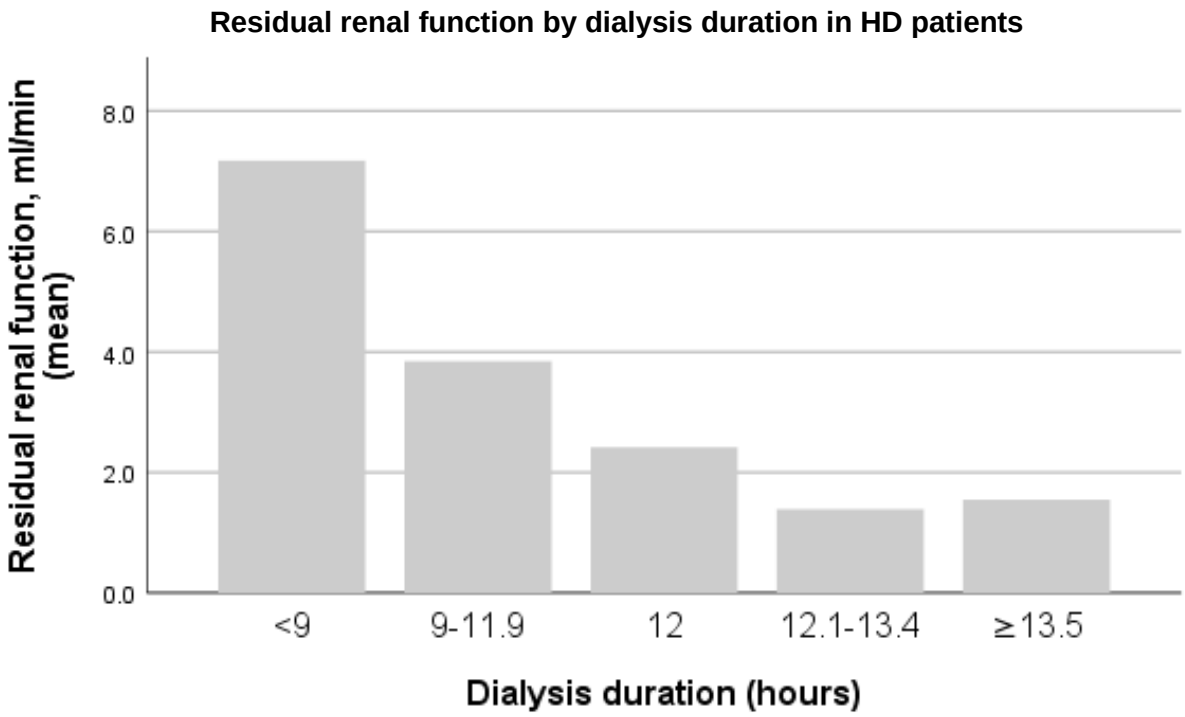

Figure 17. GFR values: creatinine clearance, and estimated GFR ([CrCl + UreaCl]/2).

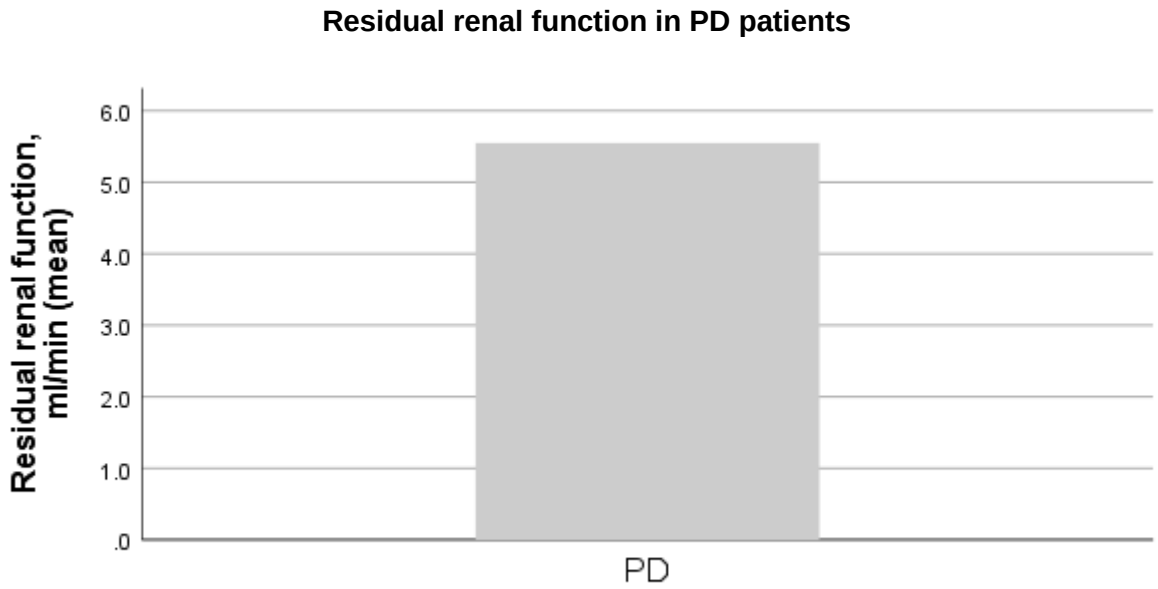

Figure 18. GFR values: creatinine clearance, and estimated GFR ([CrCl + UreaCl]/2).

9 Lab data

9.1 Hemoglobin categories by dialysis type and use of ESA (percentage)

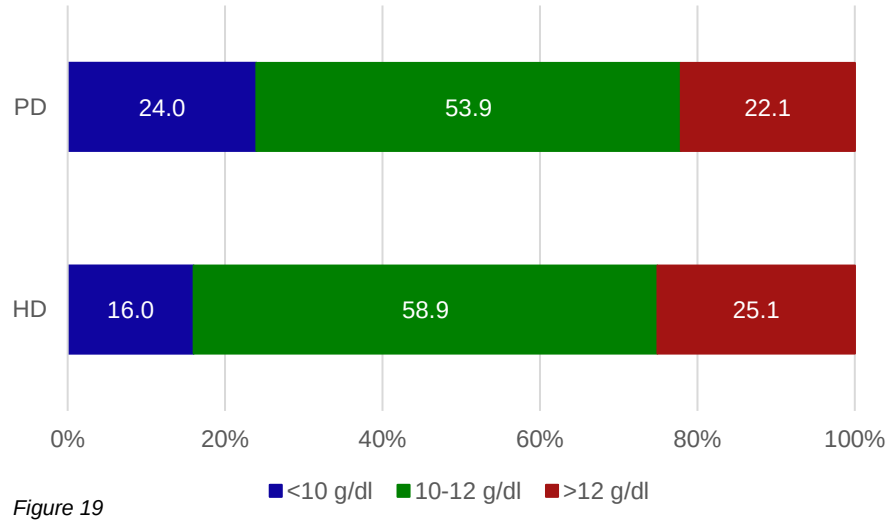

Figure 19

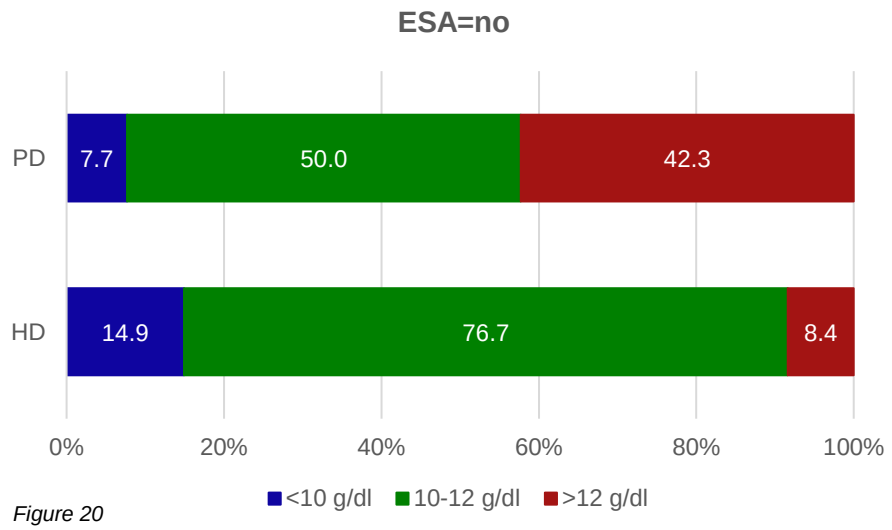

Figure 20

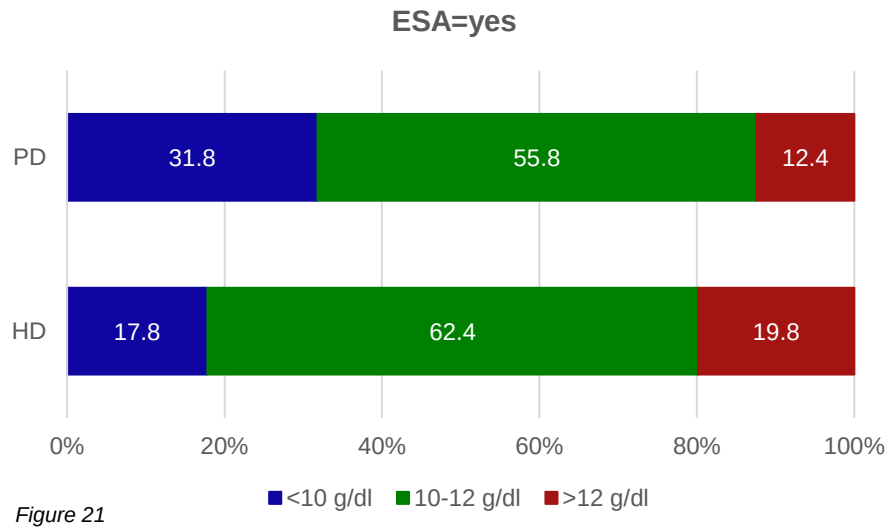

Figure 21

9.2 Ferritin categories by dialysis type (percentage)

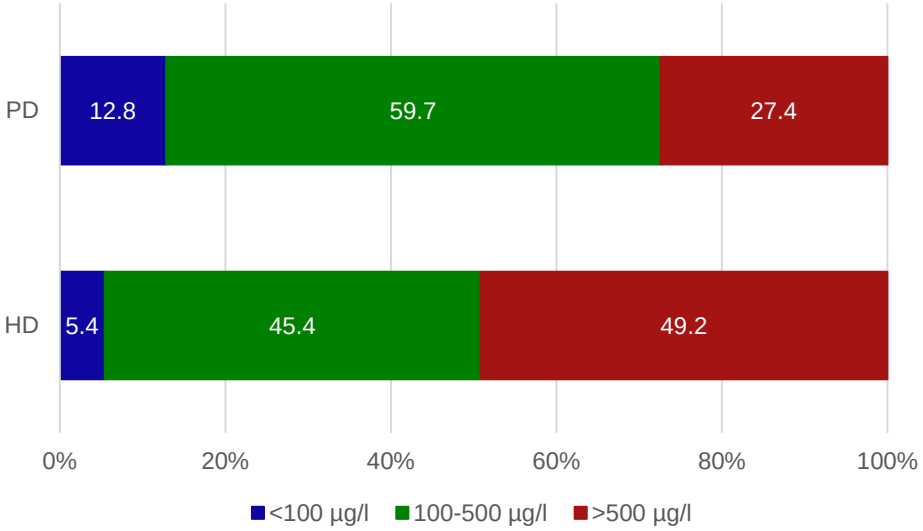

Figure 22

9.3 Calcium categories by dialysis type (percentage)

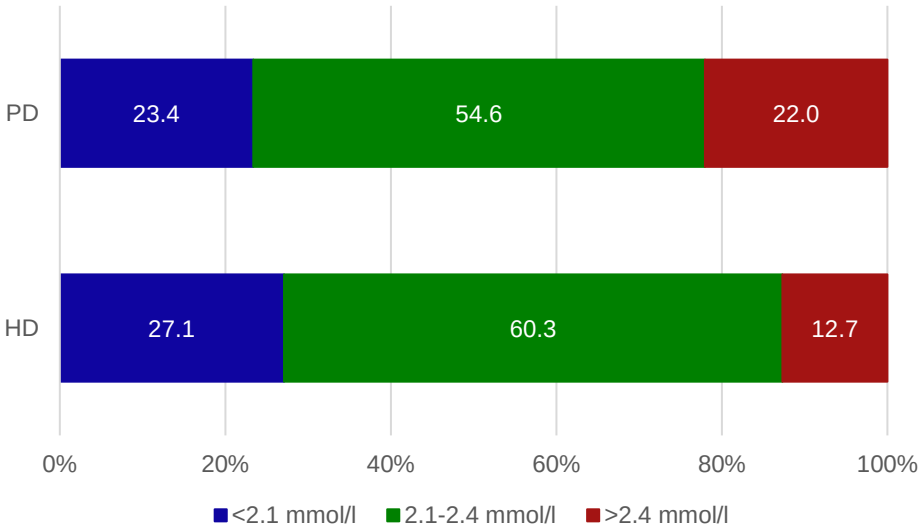

Figure 23

9.4 Phosphate categories by dialysis type (percentage)

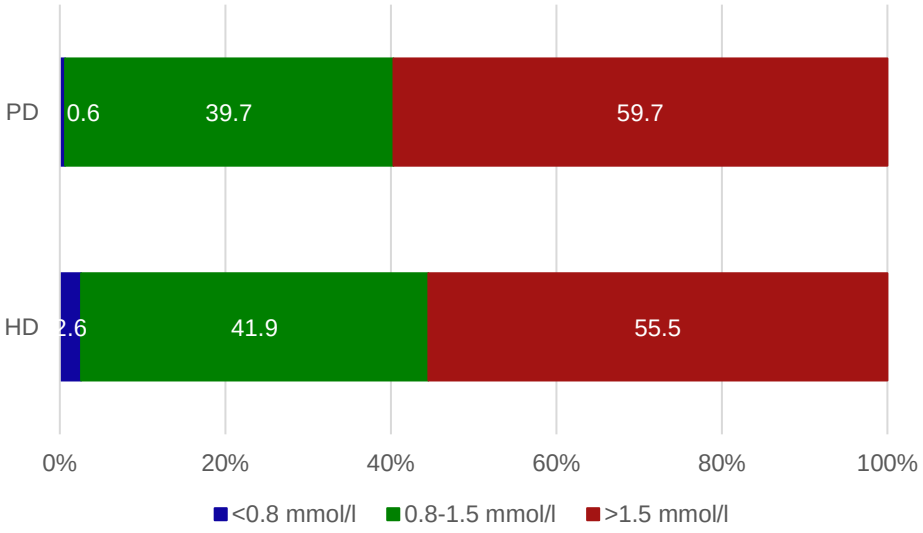

Figure 24

9.5 PTH categories by dialysis type (percentage)

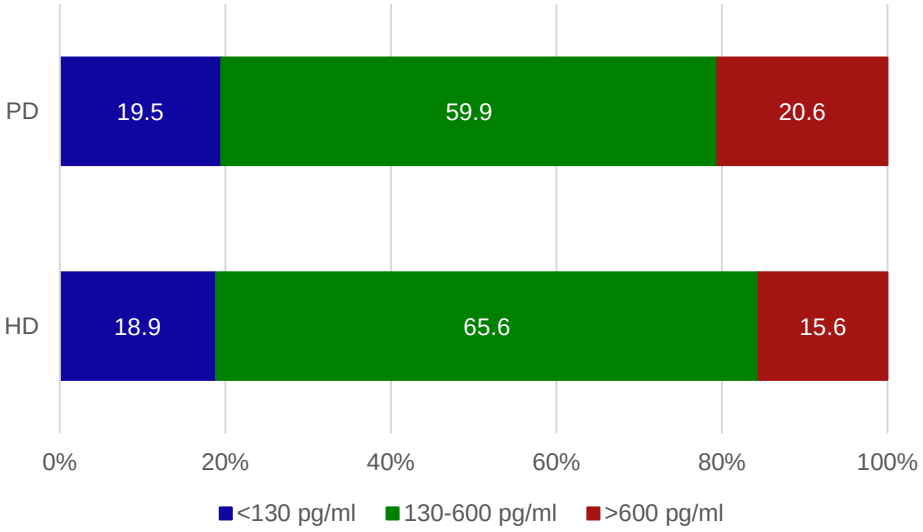

Figure 25

10 Patient survival on dialysis

10.1 1- to 10-year survival probabilities in incident dialysis patients (since 2014)

	Anzahl	1 yr	2 yrs	3 yrs	4 yrs	5 yrs	6 yrs	7 yrs	8 yrs	9 yrs	10 yrs
0-19 yrs	**120**	93.2	91.5	87.8	87.8	87.8	87.8	87.8	87.8	87.8	87.8
20-44 yrs	**861**	97.7	93.6	92.3	90.5	88.8	87.8	87.8	83.7	83.7	83.7
45-64 yrs	**2'560**	94.2	87.4	81.9	74.6	66.8	58.8	50.8	45.9	39.5	33.1
65-74 yrs	**2'510**	90.6	79.9	70.7	60.8	49.9	41.7	32.5	25.2	20.9	16.4
75+ yrs	**3'250**	85.9	70.4	56.4	43.4	32.7	24.0	17.4	13.2	8.4	7.4
Men	**6'221**	90.2	78.7	68.8	58.6	47.7	39.0	30.2	25.1	20.1	17.5
Women	**3'080**	91.2	81.6	72.0	61.2	52.4	43.6	36.7	29.5	23.5	18.3
Diabetes	**1'903**	91.0	80.0	70.7	57.8	45.4	36.8	29.2	21.7	15.1	11.5
Renal vascular disease	**2'342**	89.7	76.3	64.2	53.1	42.3	33.1	25.3	20.3	16.8	14.8
Glomerulonephritis	**1'261**	95.0	89.4	82.2	74.7	65.1	54.7	45.0	39.0	35.9	28.7
Other causes	**3'795**	89.4	78.5	69.3	60.4	52.1	44.4	36.0	31.1	25.0	21.1
All	**9'301**	90.5	79.6	69.8	59.5	49.2	40.5	32.3	26.5	21.2	17.7

Table 9

10.2 1- to 5-year survival probabilities in incident dialysis patients since 2014 (vs. ERA Registry)

		1 yr		2 yrs		5 yrs*	
	Anzahl	srrqap	ERA	srrqap	ERA	srrqap	ERA
0-19 yrs	**120**	93.2	97.0	91.5	96.0	87.8	85.1
20-44 yrs	**861**	97.7	96.3	93.6	92.2	88.8	78.6
45-64 yrs	**2'560**	94.2	92.2	87.4	84.5	66.8	59.3
65-74 yrs	**2'510**	90.6	86.6	79.9	74.8	49.9	42.3
75+ yrs	**3'250**	85.9	79.6	70.4	62.8	32.7	25.5
Men	**6'221**	90.2	88.0	78.7	76.8	47.7	44.9
Women	**3'080**	91.2	88.8	81.6	78.8	52.4	49.5
Diabetes	**1'903**	91.0	88.0	80.0	75.7	45.4	40.6
Renal vascular disease	**2'342**	89.7	89.5	76.3	79.2	42.3	48.6
Glomerulonephritis	**1'261**	95.0	92.2	89.4	84.5	65.1	56.7
Other causes	**3'795**	89.4	86.8	78.5	75.8	52.1	46.5
All	**9'301**	90.5	88.3	79.6	77.5	49.2	46.6

Table 10. Comparison with cohort 2016-2020 (Annual report 2022); *Comparison with cohort 2013-2017

11 Acknowledgements

The SRRQAP Registry would like to sincerely thank the patients and staff of all dialysis units for their valuable contributions and dedication in providing data, which play a crucial role in advancing research and improving patient care. Special acknowledgment is given to Sandra Castellanos for her key role in ensuring data completeness and for providing ongoing support to the centers in the data collection process.