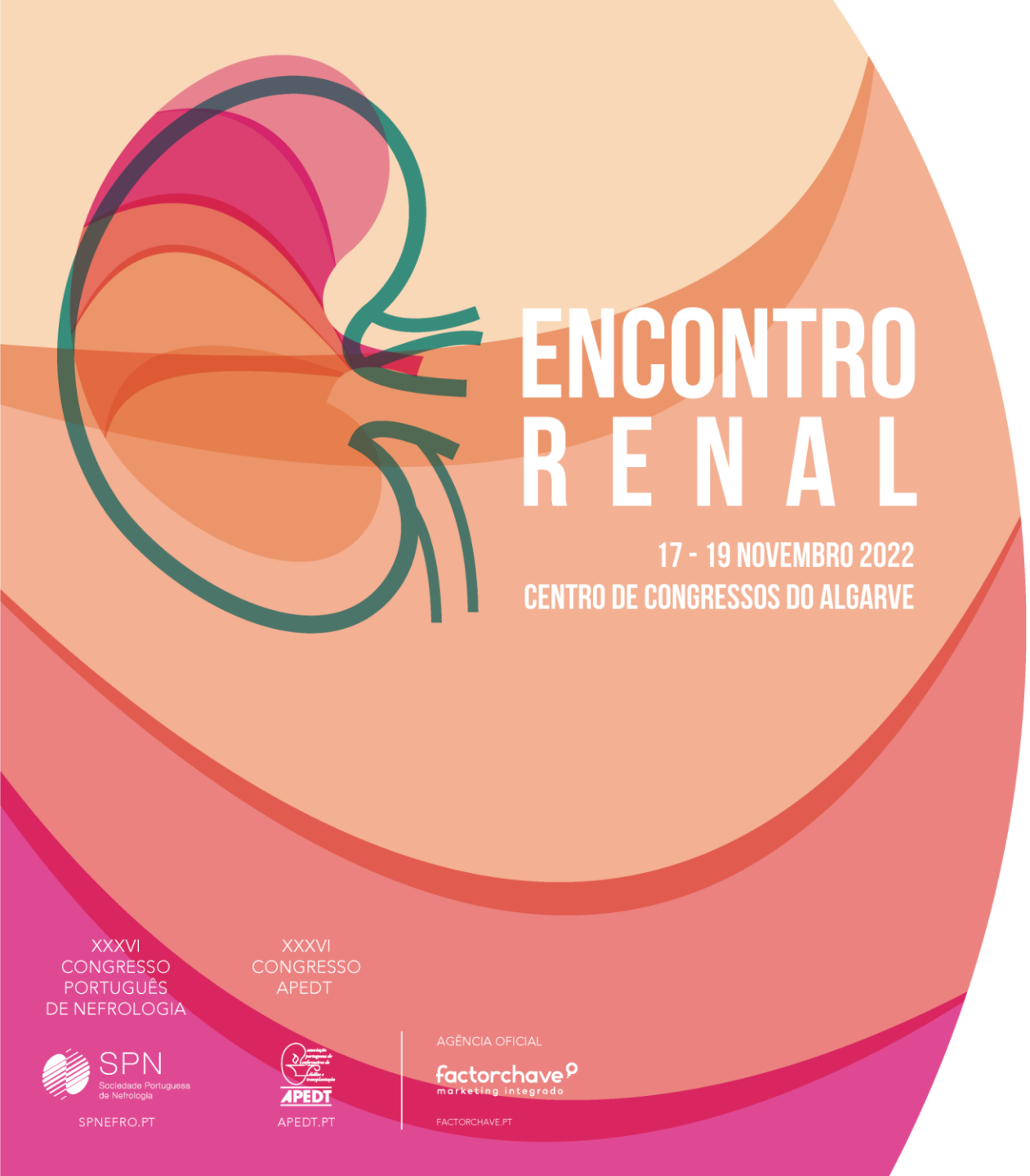

Portuguese Registry of Dialysis and Transplantation 2021

Gabinete do Registo da Doença Renal Crónica da Sociedade Portuguesa de Nefrologia

Sociedade Portuguesa de Nefrologia

Sociedade Portuguesa de Nefrologia

GABINETE DE REGISTO DA SPN

- **Ana Galvão**
- **Rui Filipe**
- **Maria João Carvalho**
- **Rita Leal**
- **Marta Neves**
- **Manuel Amoedo**
- **Gil Silva**

1984: national registry for Chronic Renal Insufficiency was created by Prof. Dr. Jacinto Simões, President of the Portuguese Society of Nephrology

From 1984 till end of eighties the registry follows casuistic EDTA model

From the end of eighties till 1996 permanent registry with data on incidence, prevalence, mortality and other clinical data

1997 to 2007, aggregated data on incidences, prevalence and mortality with 100% of clinics and hospitals reporting

Since 2007, analysis of new clinical data on several aspects of CKD 5 treatment: incidence, prevalence, analysis by sexes and country regions, median age and age groups, etiology of CKD, gross mortality rates, vascular access, virology status, etc. Hundred percent response rate

2010, online registry

1984 – 1990: Dr. João Ribeiro Santos

1991 – 1992: Dr. Pedro Ponce

1993: Dr. João Ribeiro Santos

1994 – 1996: Dr. Francisco Remédio

1997 – 2007: Dr. João Pinto dos Santos

2007 – 2018: Dr. Fernando Macário

2019 - …: Ana Galvão

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GABINETE DE REGISTO DA SPN

Abbreviators

CKD – Chronic Kidney Disease

HD - Haemodialysis

PD - Peritoneal Dialysis

KTr - Kidney Transplant

PMP - Per Million Population

RRT - Renal Replacement Therapy

Pts – patients

Nº - number

CKC – Conservative kidney Care

- VA – Vascular Access
- AVFistula – Arteriovenous fistula
- Cat. – Catheter
- CVC – Central Vein Catheter
- EDTA – European Dialysis and Transplantation Association

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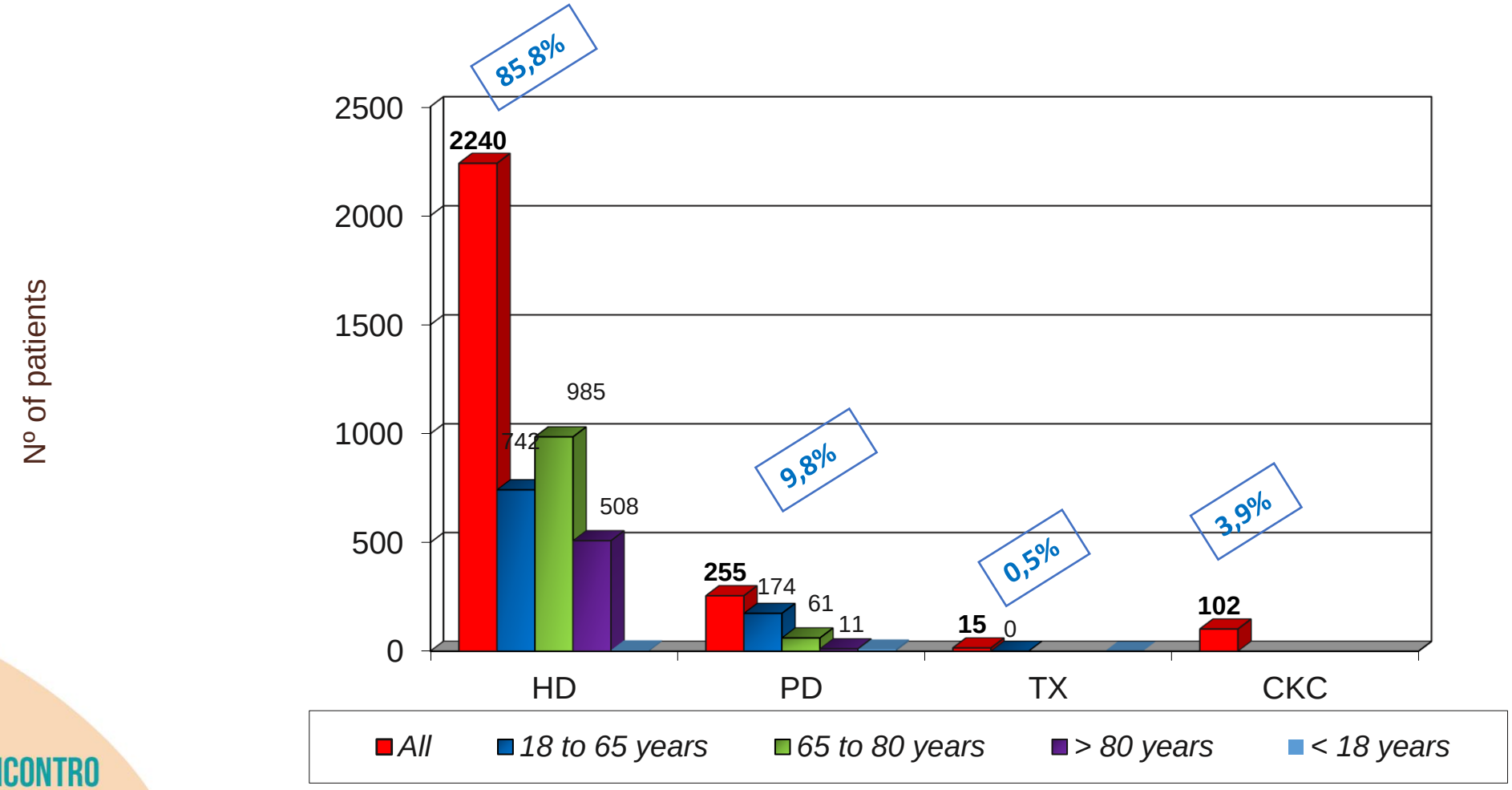
Portuguese Registry of Dialysis and Transplantation 2021

- Questionnaires for Hemodialysis (HD),
- Peritoneal Dialysis (PD) and Kidney Transplantation
- 132 Hemodialysis Centers
- 27 Peritoneal Dialysis Units
- 8 adult and 1 pediatric kidney transplantation centers
- 100% response rate

Sociedade Portuguesa de Nefrologia

New patients starting RRT during 2021 *(n=2612)*



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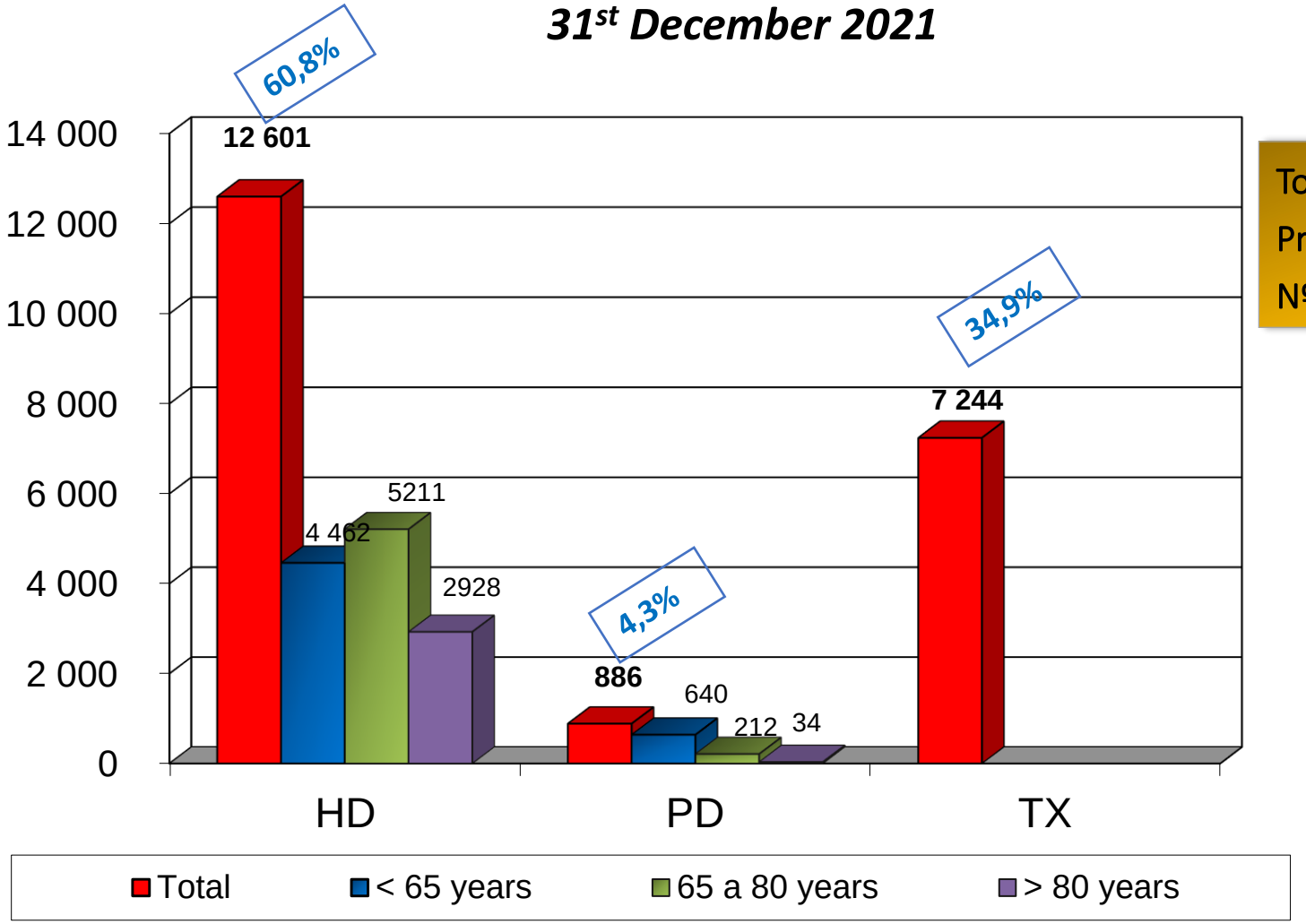
Patients treated by dialysis or with functioning kidney transplant

31st December 2021



Total number of pts – 20731

Prevalence – 2004 pmp

Nº of KTx pt / NºD pt = 0,54

Mean age HD + PD = 67,5 years

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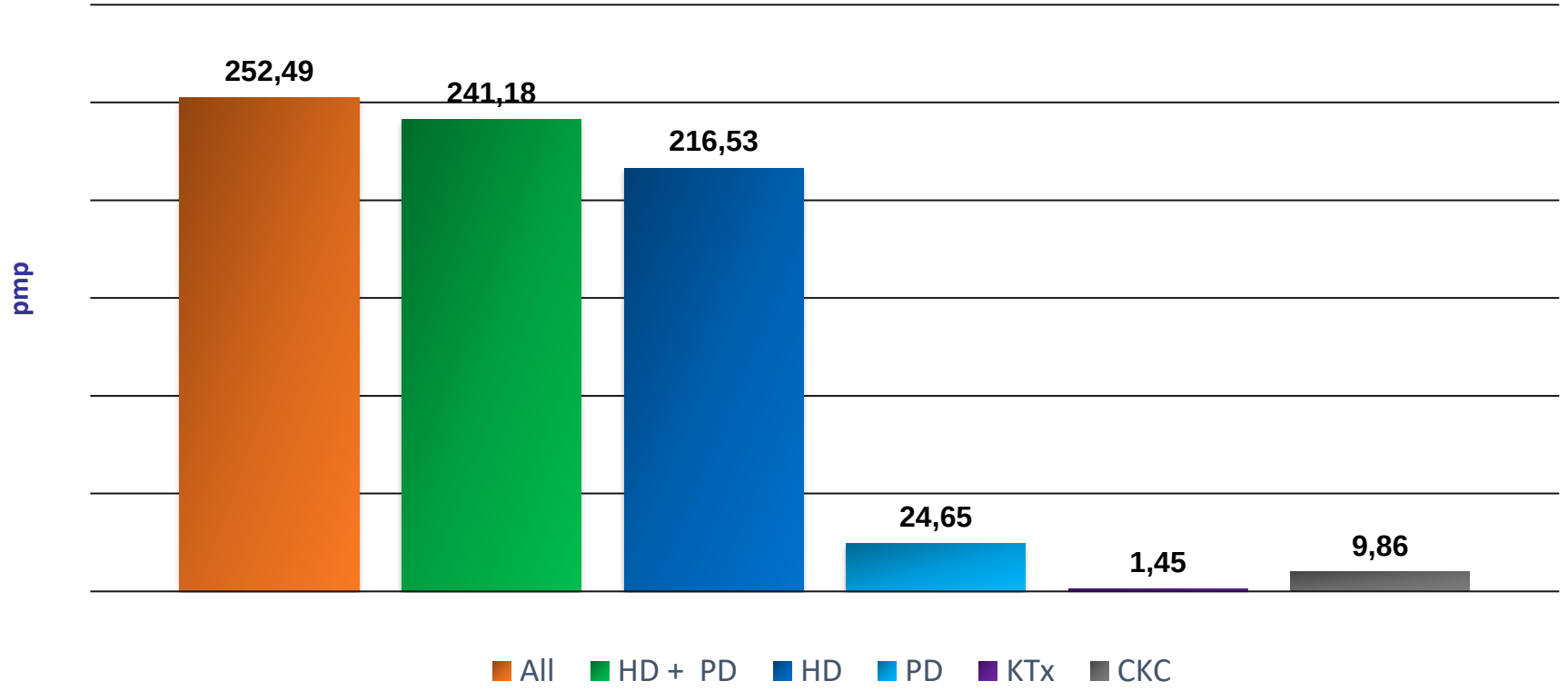
Incident patients accepted for RRT (PMP)
during 2021



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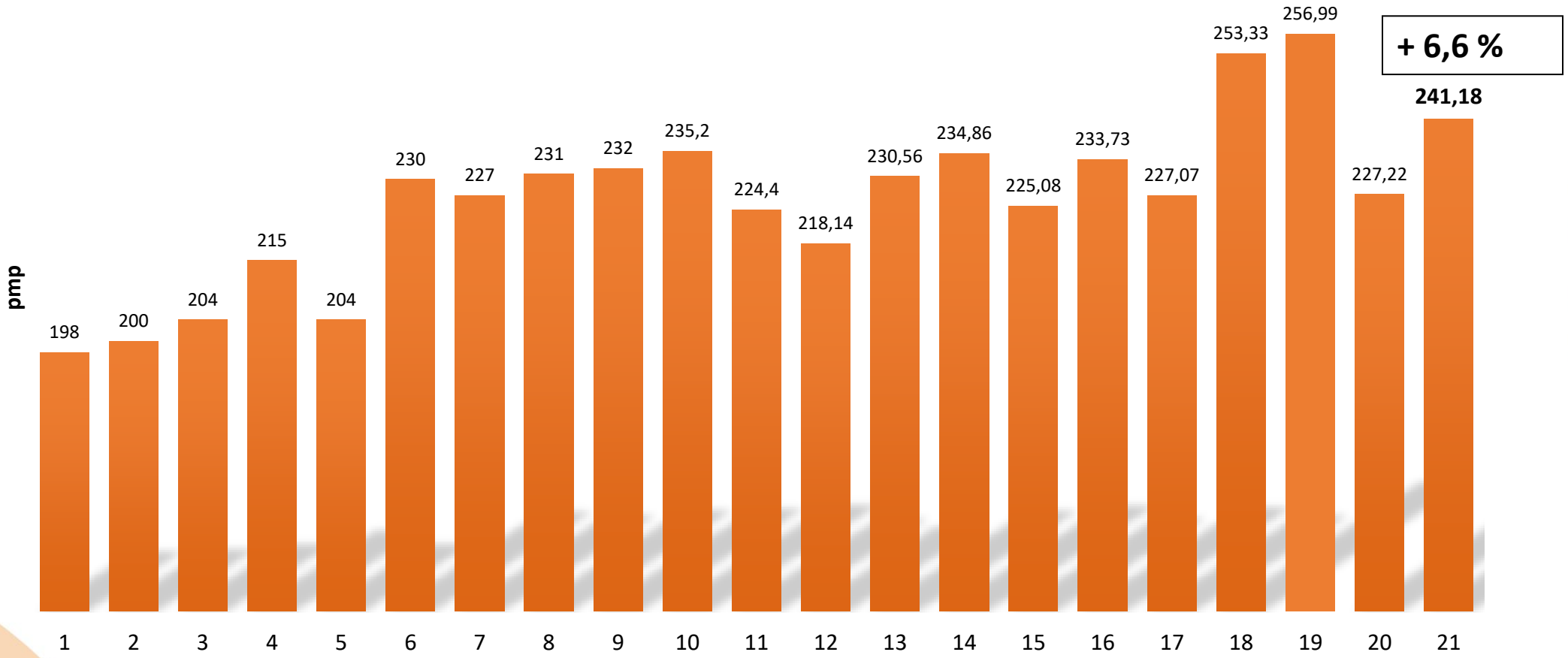
Incident patients accepted for dialysis

HD and PD per million population 2001 - 2021



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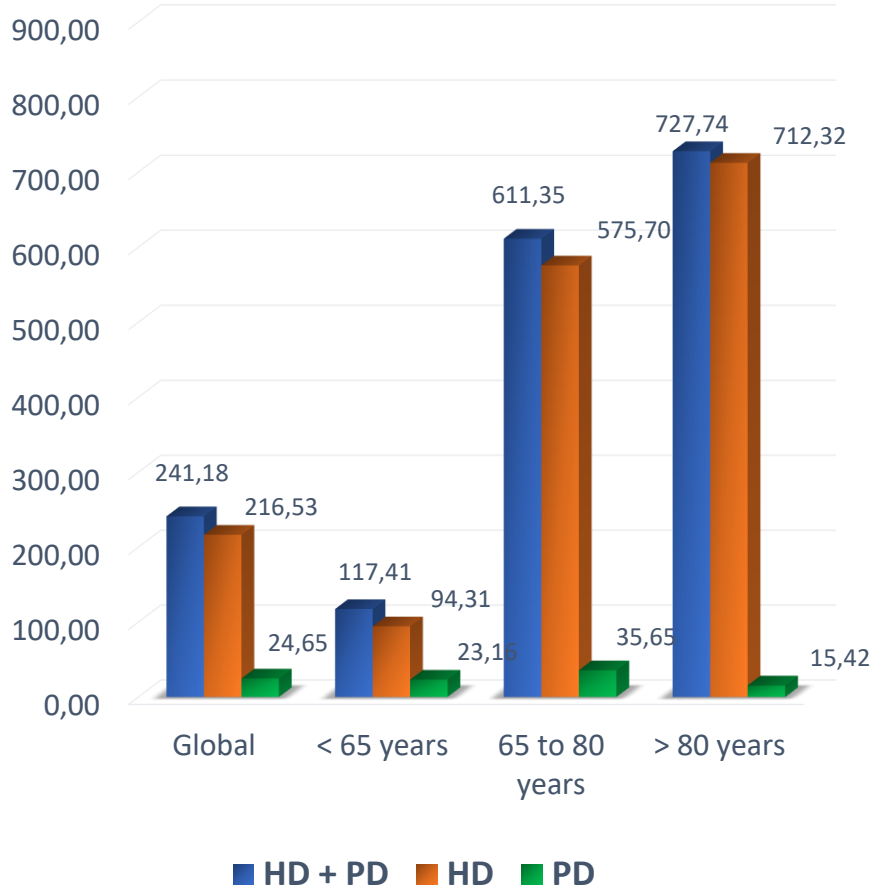
Incident patients accepted for dialysis

HD and PD per million population by age group during 2021



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Incidence
How do we compare?

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Annual Report 2019

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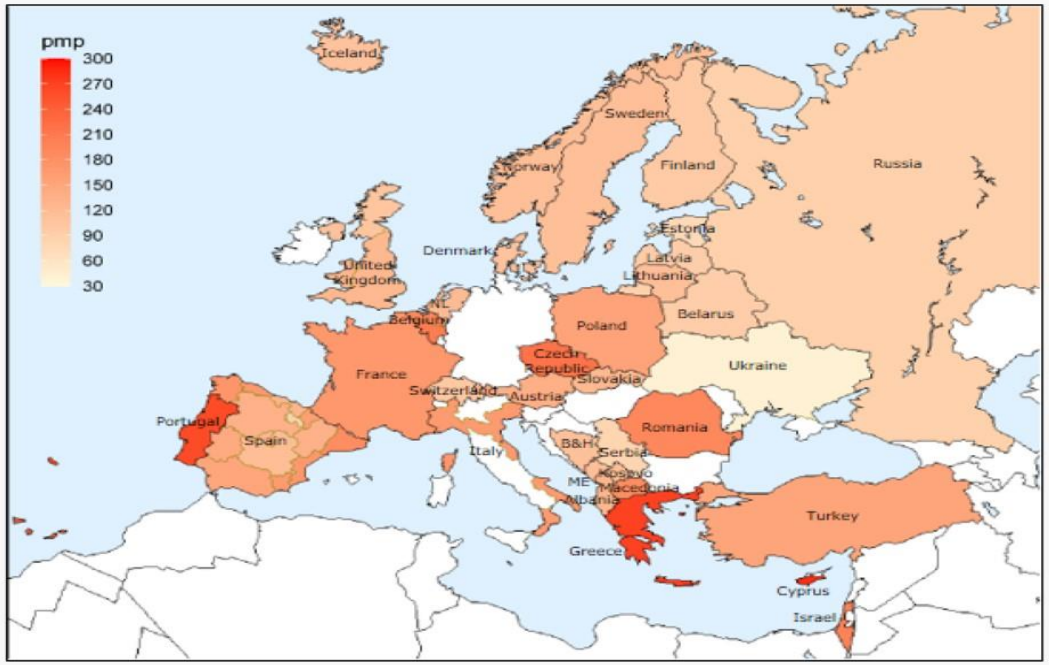
Incident patients accepted for RRT in 2019, at day 1

by country



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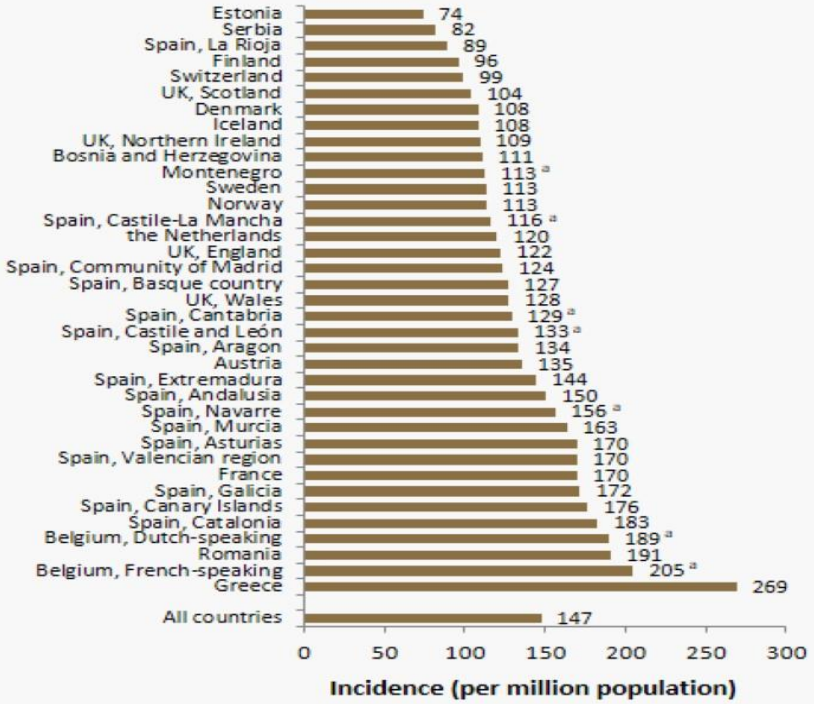
Incident patients accepted for RRT in 2019 at day 1

by country

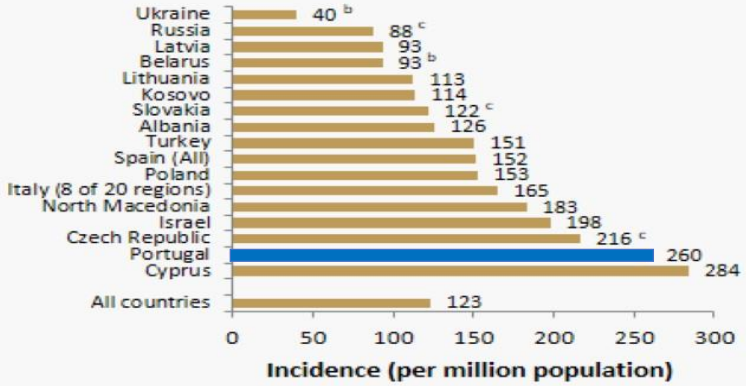
Unadjusted incidence

renal registries providing individual patient data



Unadjusted incidence

renal registries providing aggregated data



[a] *patients younger than 20 years of age are not included;* [b] *patients younger than 18 years of age are not included;* [c] *data includes patients receiving dialysis only*

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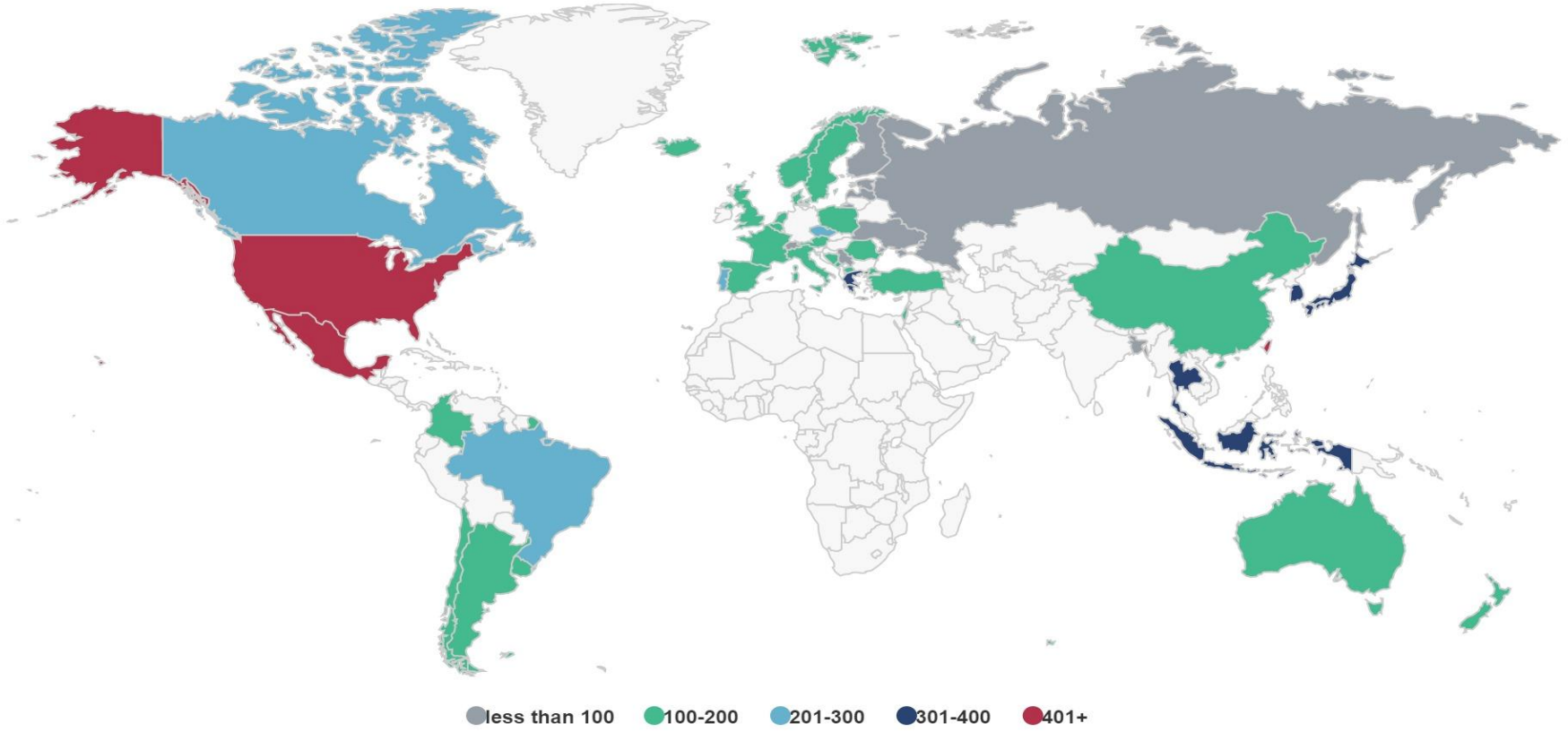
Figure 11.1 Geographic variation in incidence of treated ESRD per million population, by country or region, 2019



Data Source: 2021 United States Renal Data System Annual Data Report

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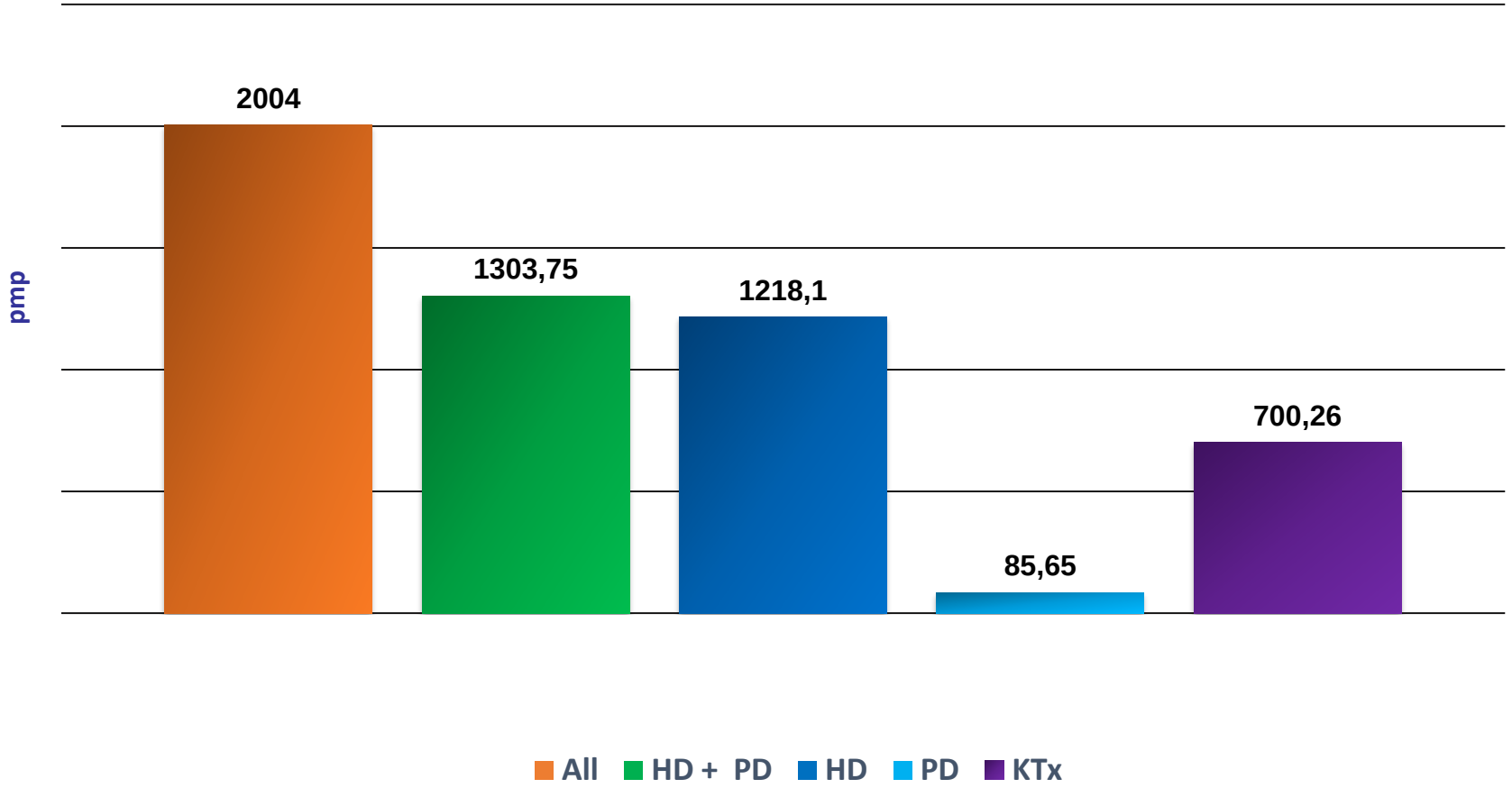
Prevalent patients on RRT by modality
31st December 2021



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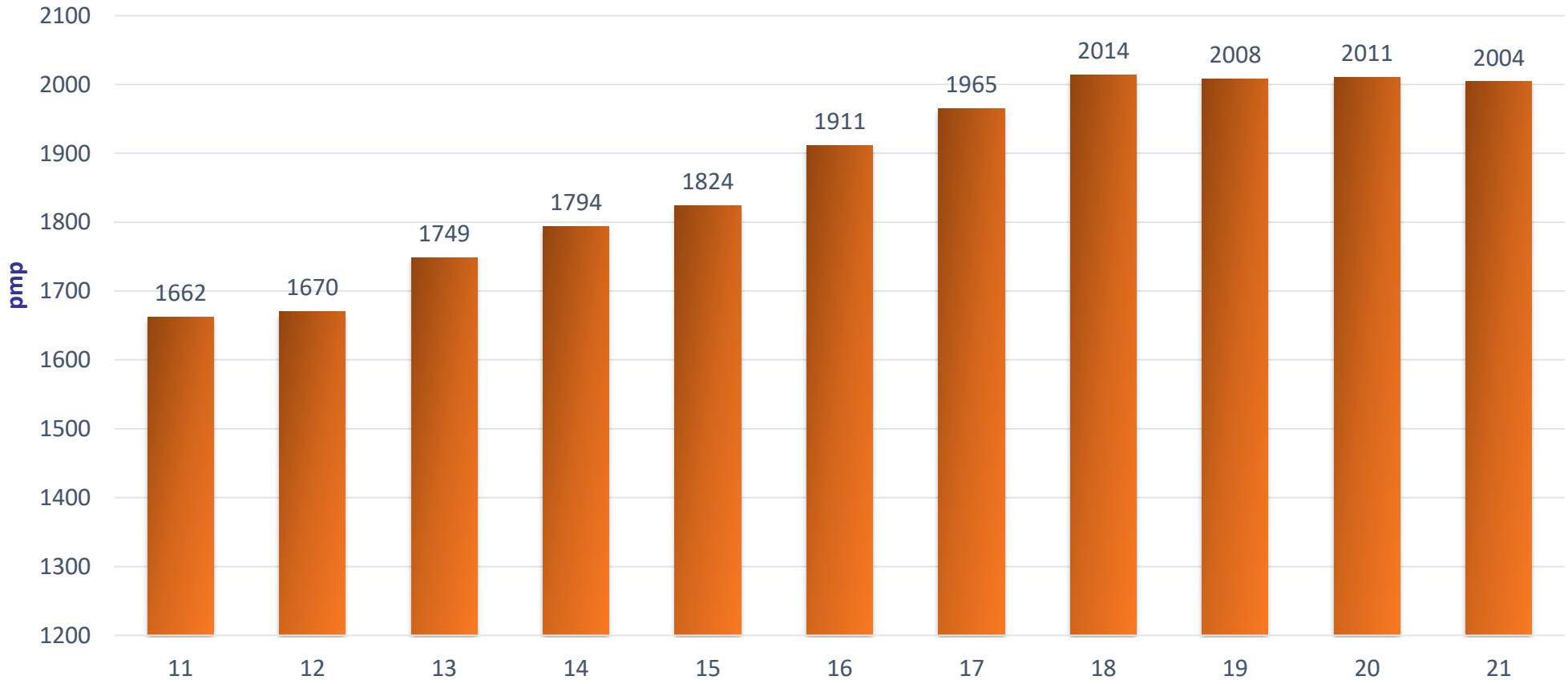
Prevalent patients on RRT

per million population end of each year 2011 - 2021



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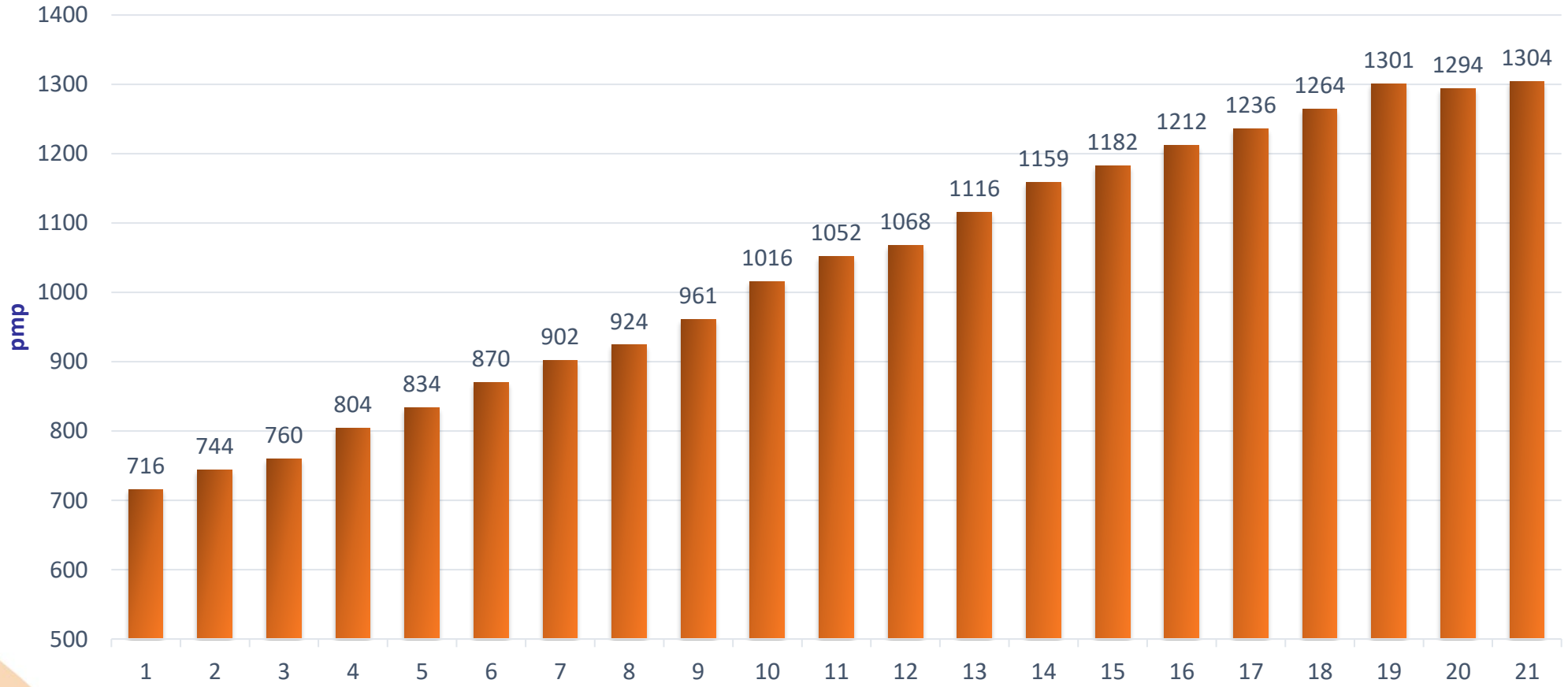
Prevalent patients on dialysis

per million population end of each year 2001 - 2021



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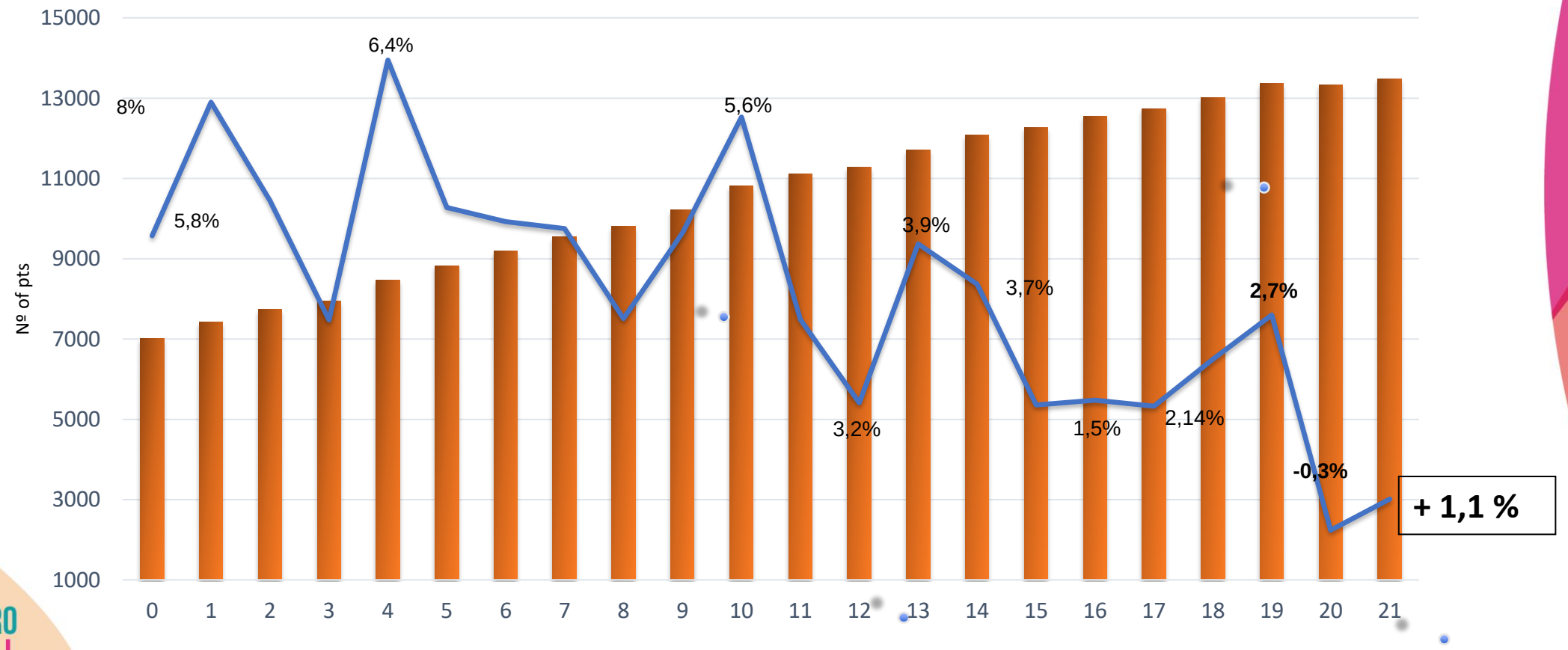
Patients on dialysis and annual growth
end of each year 2001 - 2021



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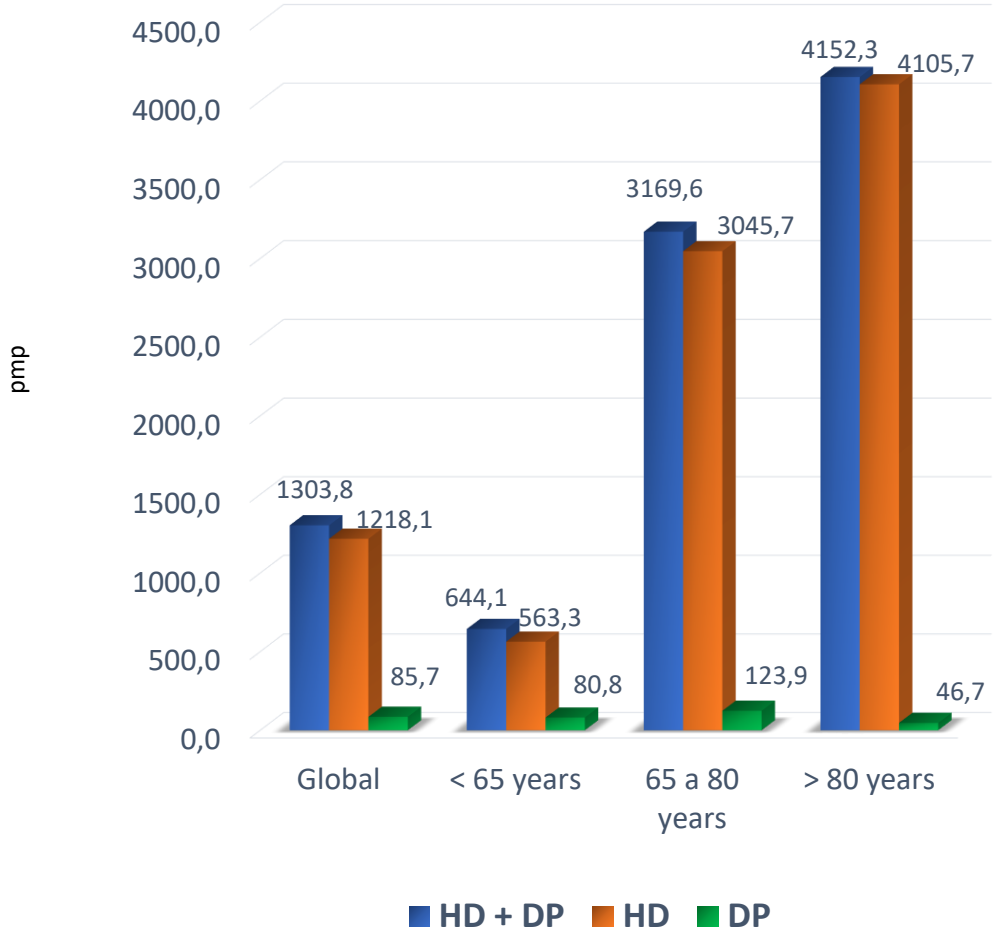
Prevalence of CKD patients treated by dialysis
per million population by age group in 2021



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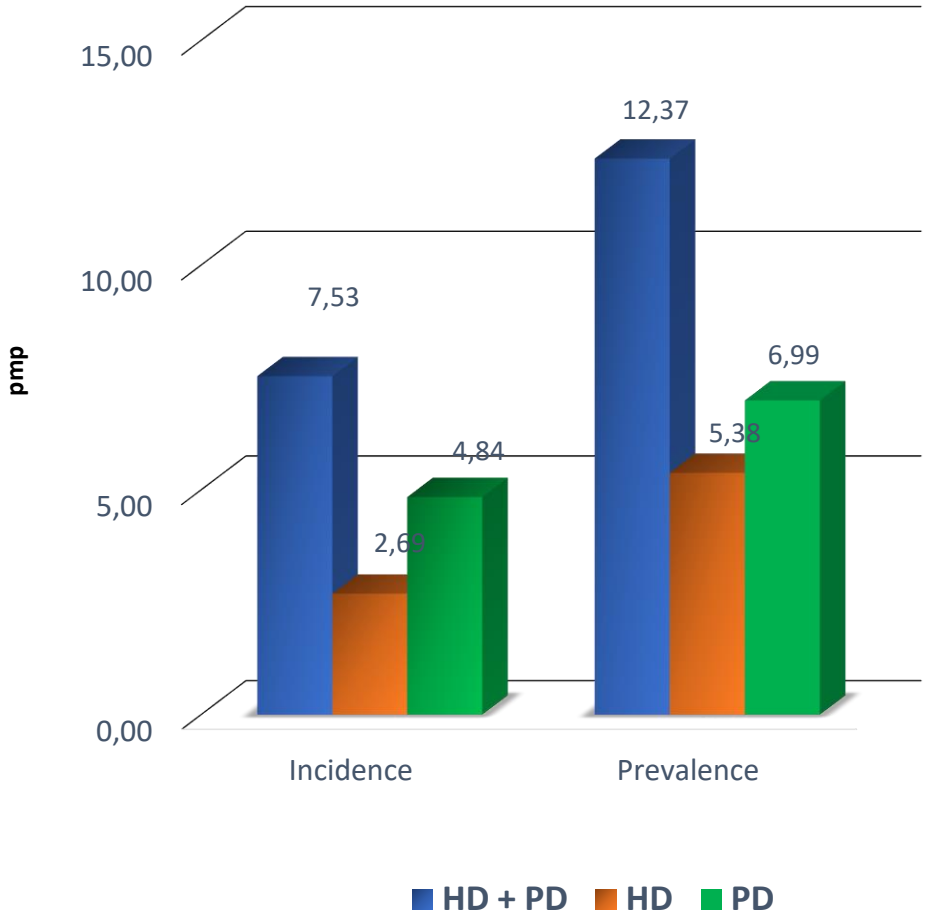
Incident and prevalent pediatric patients on dialysis

HD and PD per million population 2021



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Prevalence
How do we compare?

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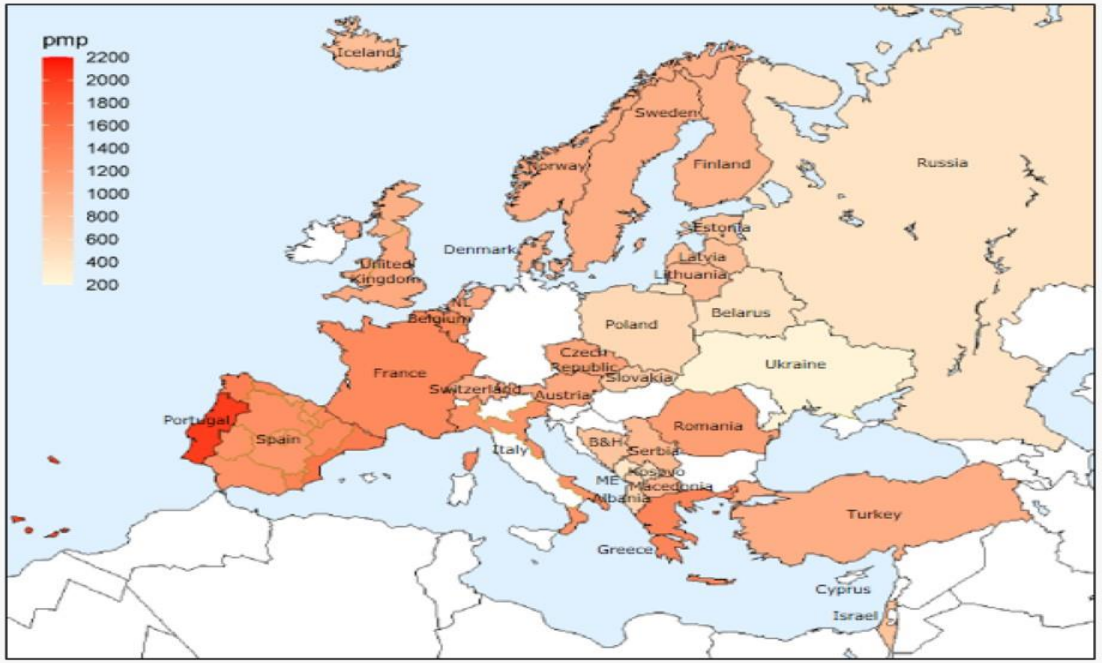
era edta REGISTRY

Prevalent patients on RRT in 2019

by country



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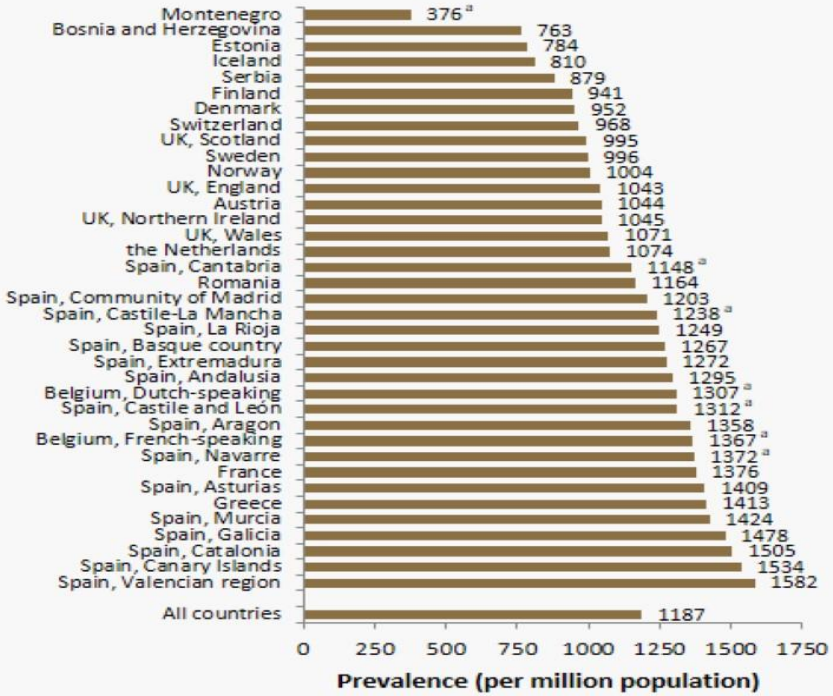
Prevalent patients on RRT in 2019

by country

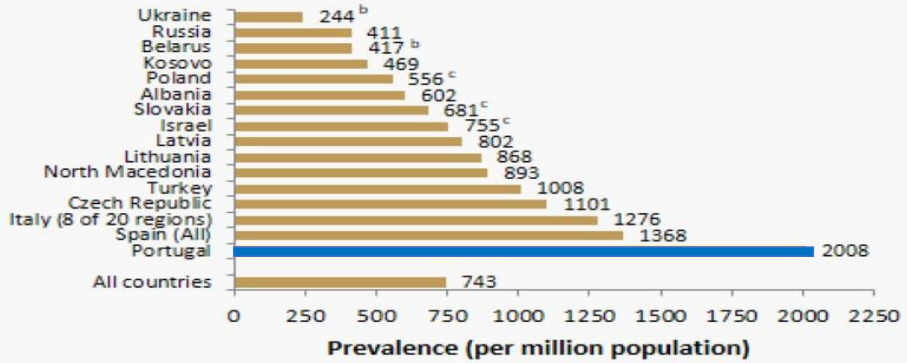
Unadjusted prevalence

renal registries providing individual patient data



Unadjusted prevalence

renal registries providing aggregated data



[a] patients younger than 20 years of age are not included; [b] patients younger than 18 years of age are not included; [c] data includes patients receiving dialysis only

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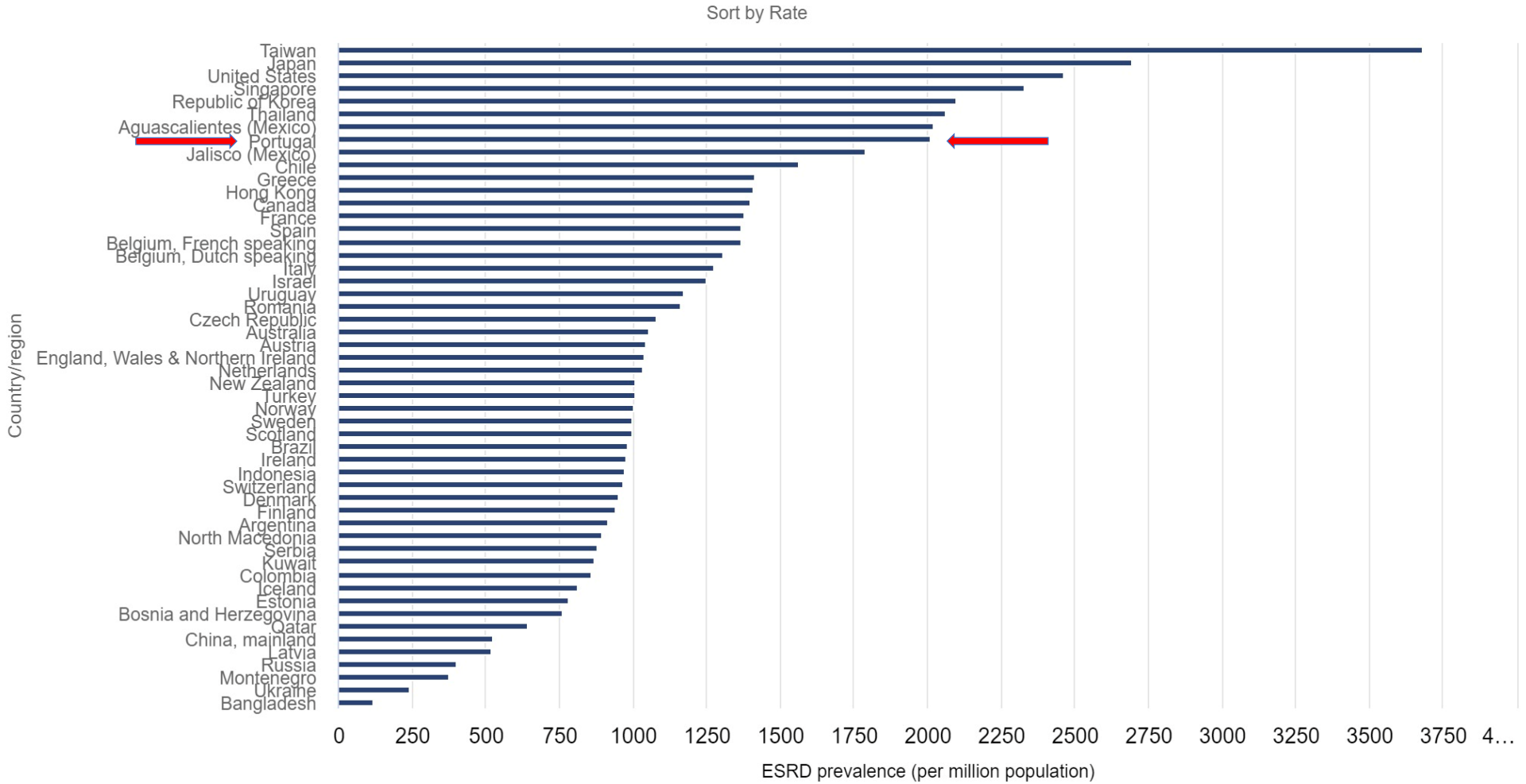
Figure 11.9 Prevalence of treated ESRD, by country or region, 2019



Data Source: 2021 United States Renal Data System Annual Data Report

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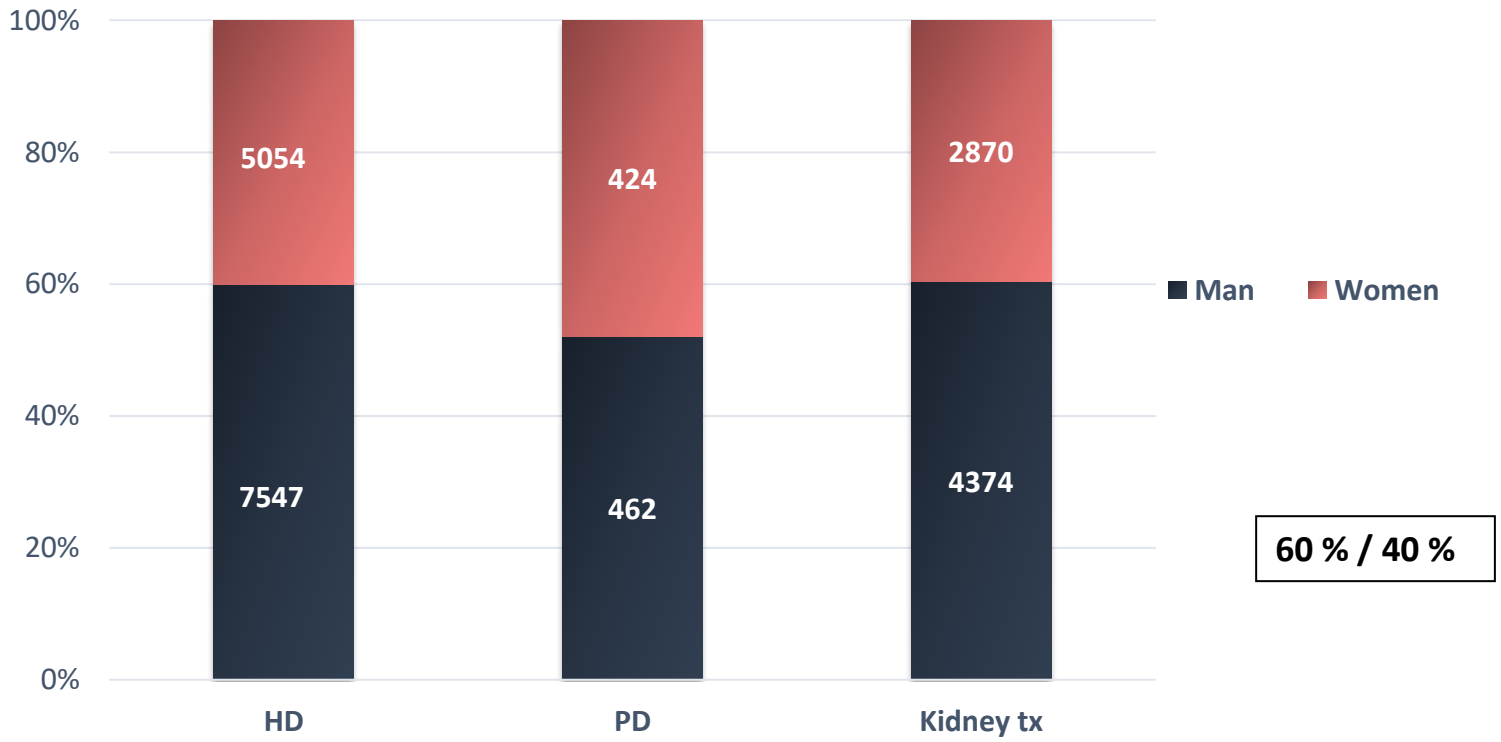
Gender distribution in each modality
31st December 2021



60 % / 40 %

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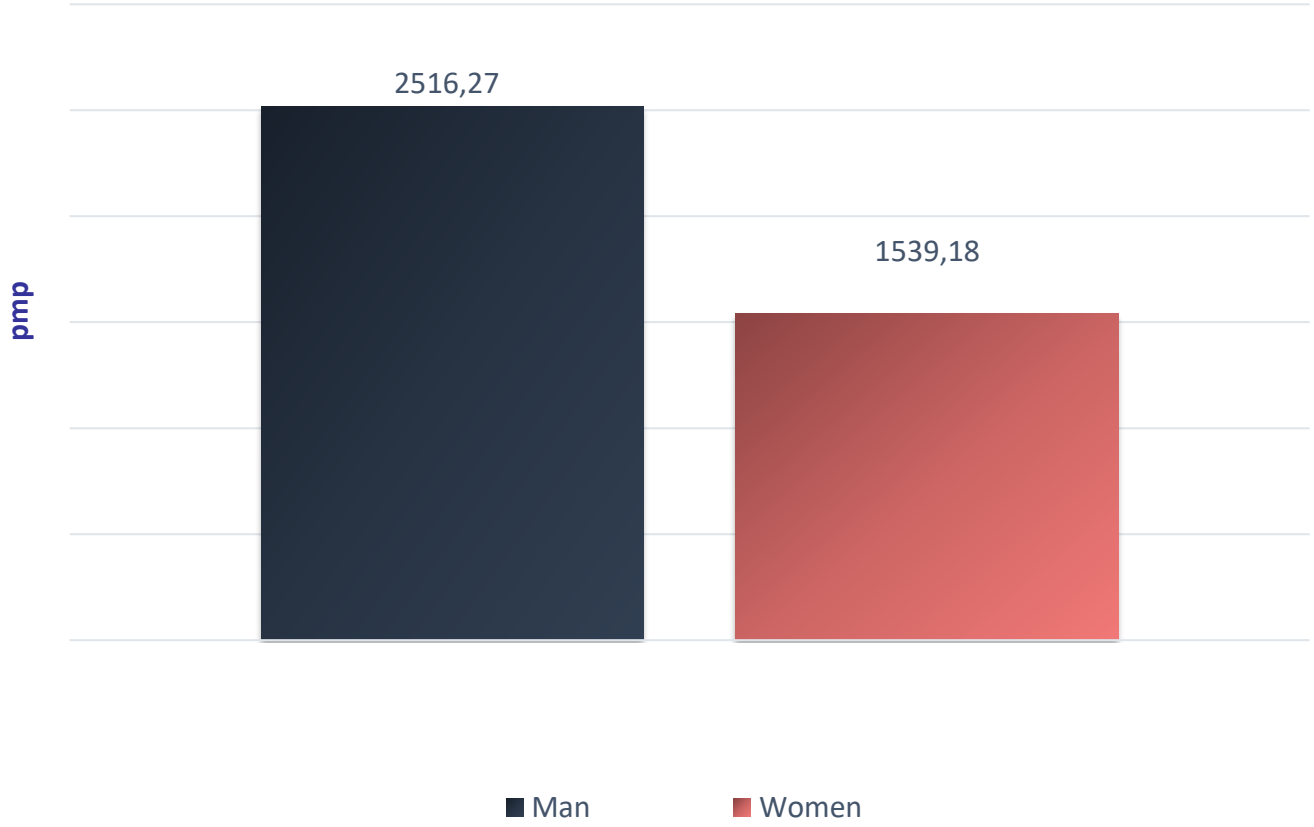
Prevalence by gender, all RRT
per million population 31st December 2021



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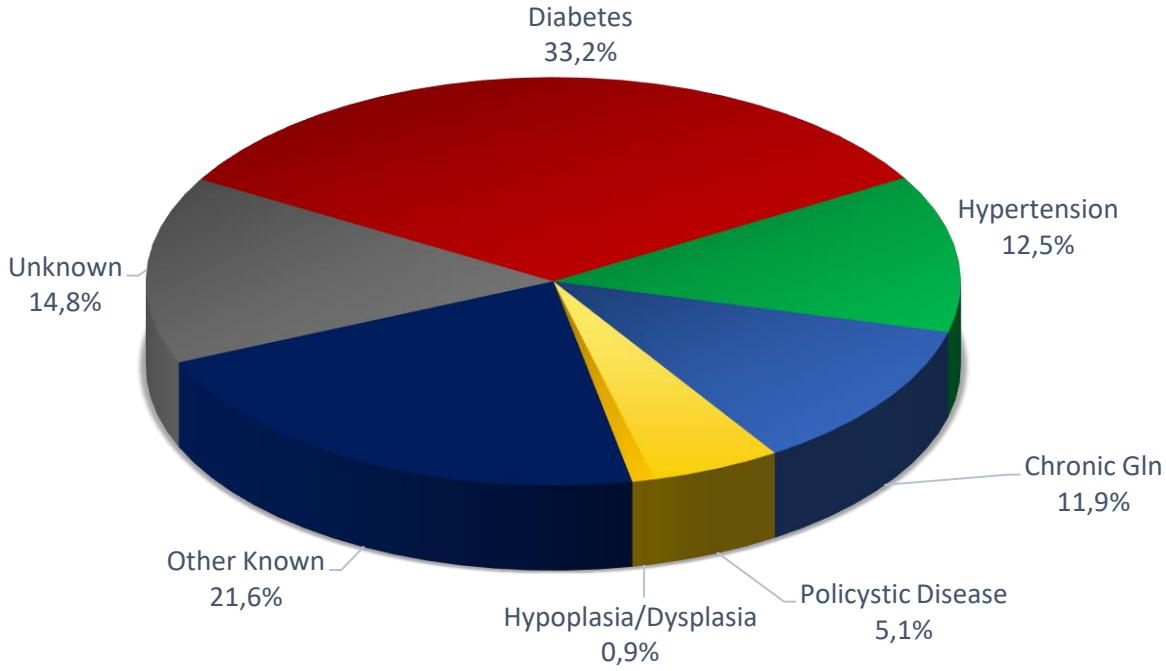
Primary renal disease of patients accepted for dialysis
HD and PD during 2021



N = 2470
Not available = 25

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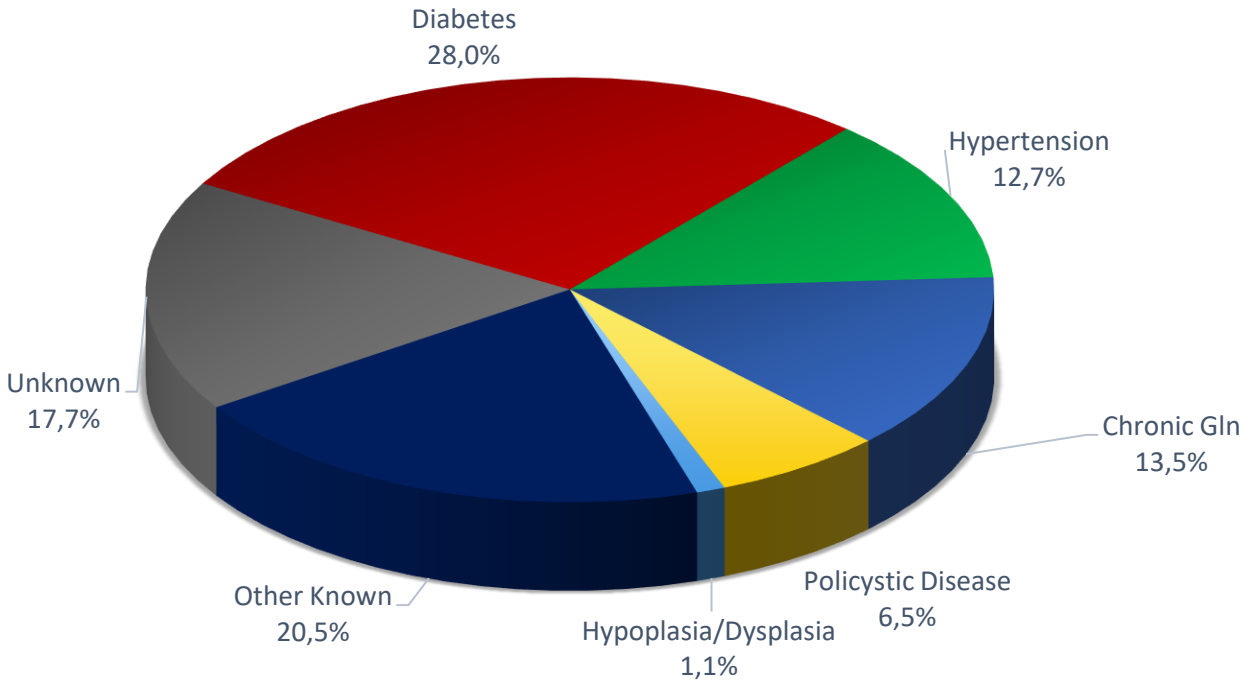
Primary renal disease of prevalent patients
HD and PD, 31st December 2021



N = 13290
Not available = 197

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HEMODIALYSIS

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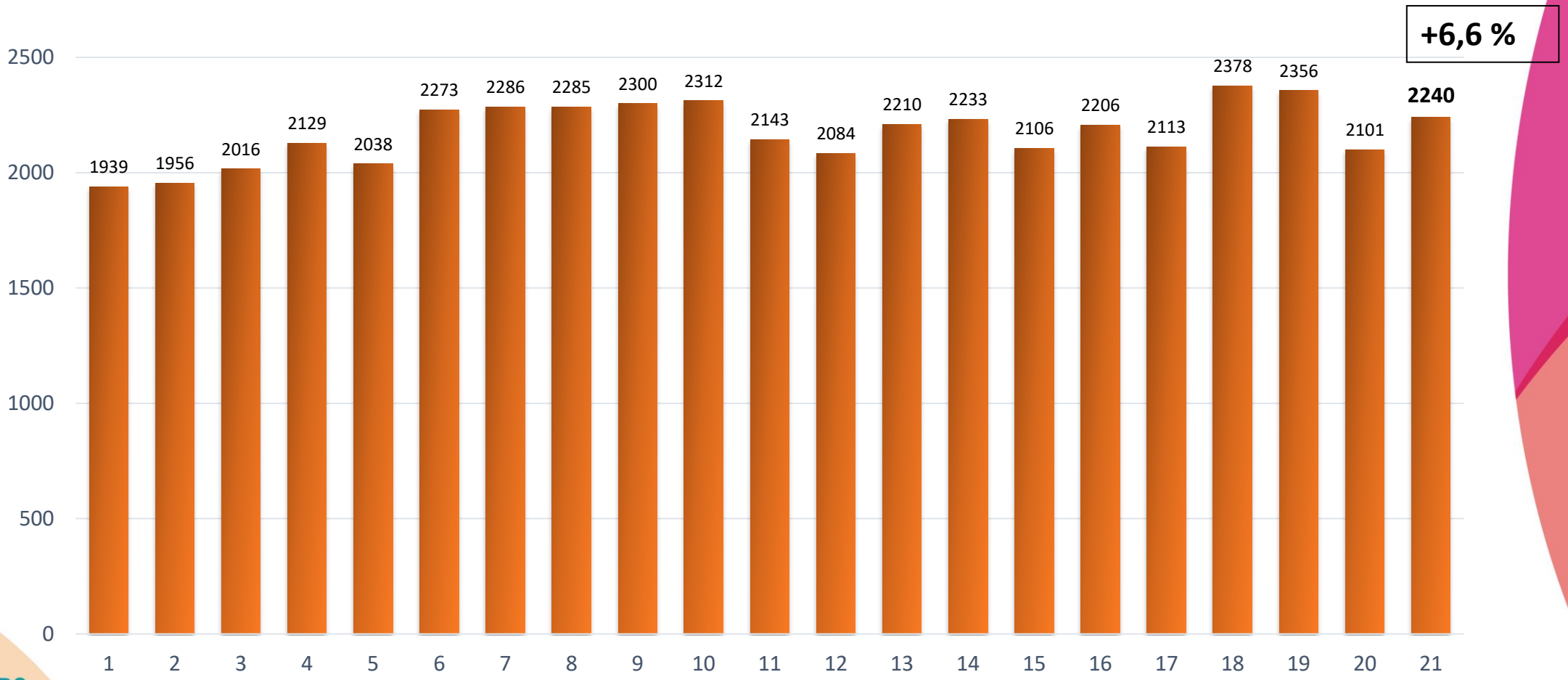
New patients accepted for hemodialysis
2001 - 2021



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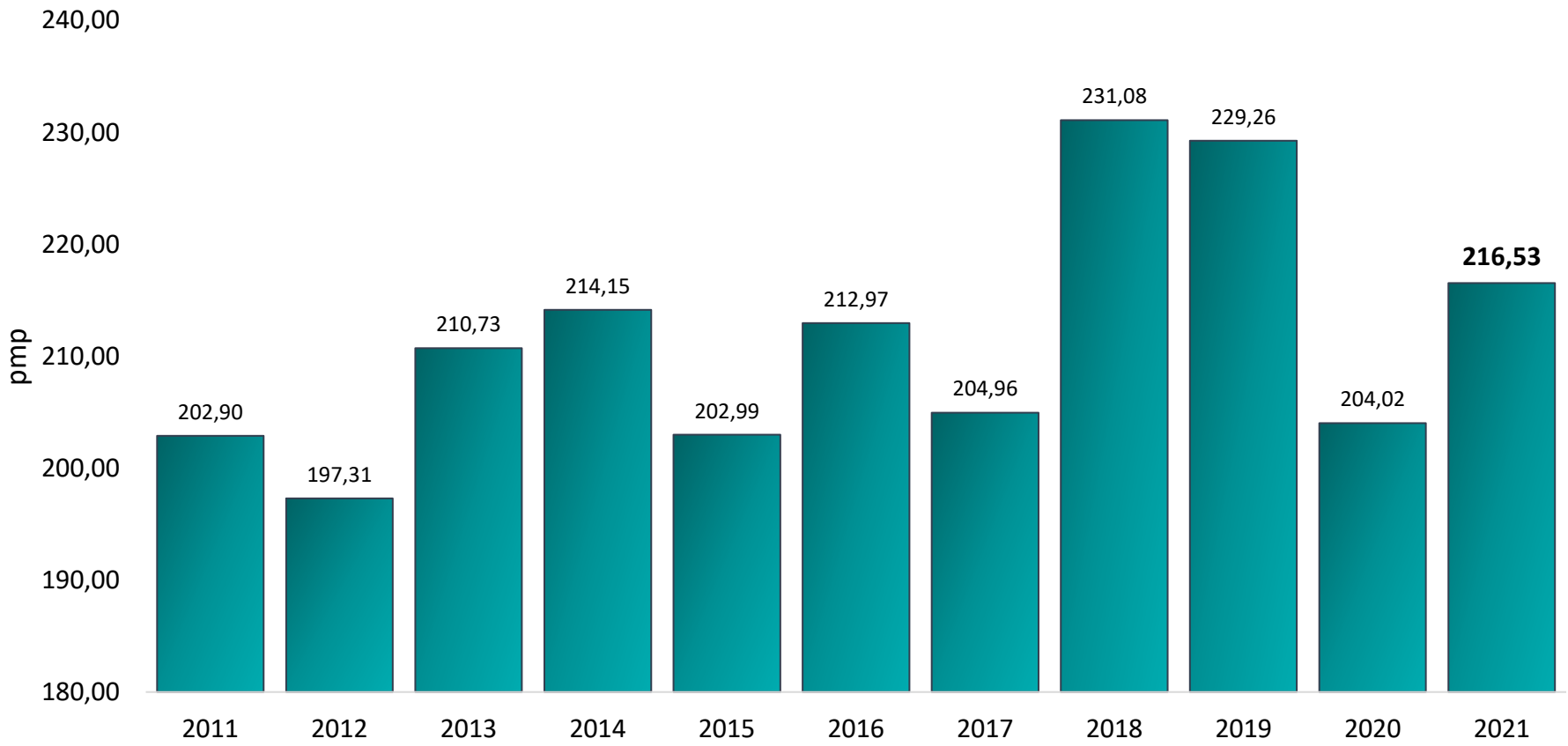
Incident patients accepted for hemodialysis
per million population 2011 - 2021



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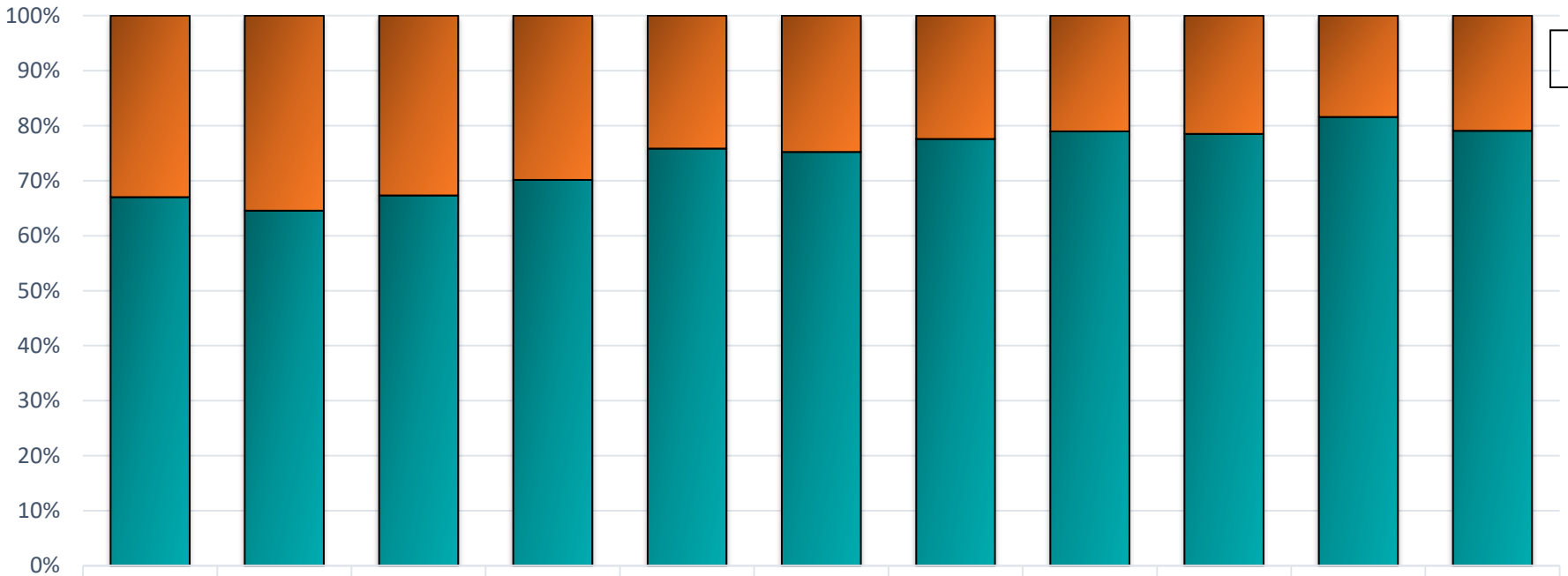
Previous follow-up by nephrology (> 3 months)
HD patients *2011 – 2021*



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
No	694	737	716	655	509	537	473	500	506	387	469
Yes	1410	1342	1477	1541	1597	1629	1640	1878	1850	1714	1771

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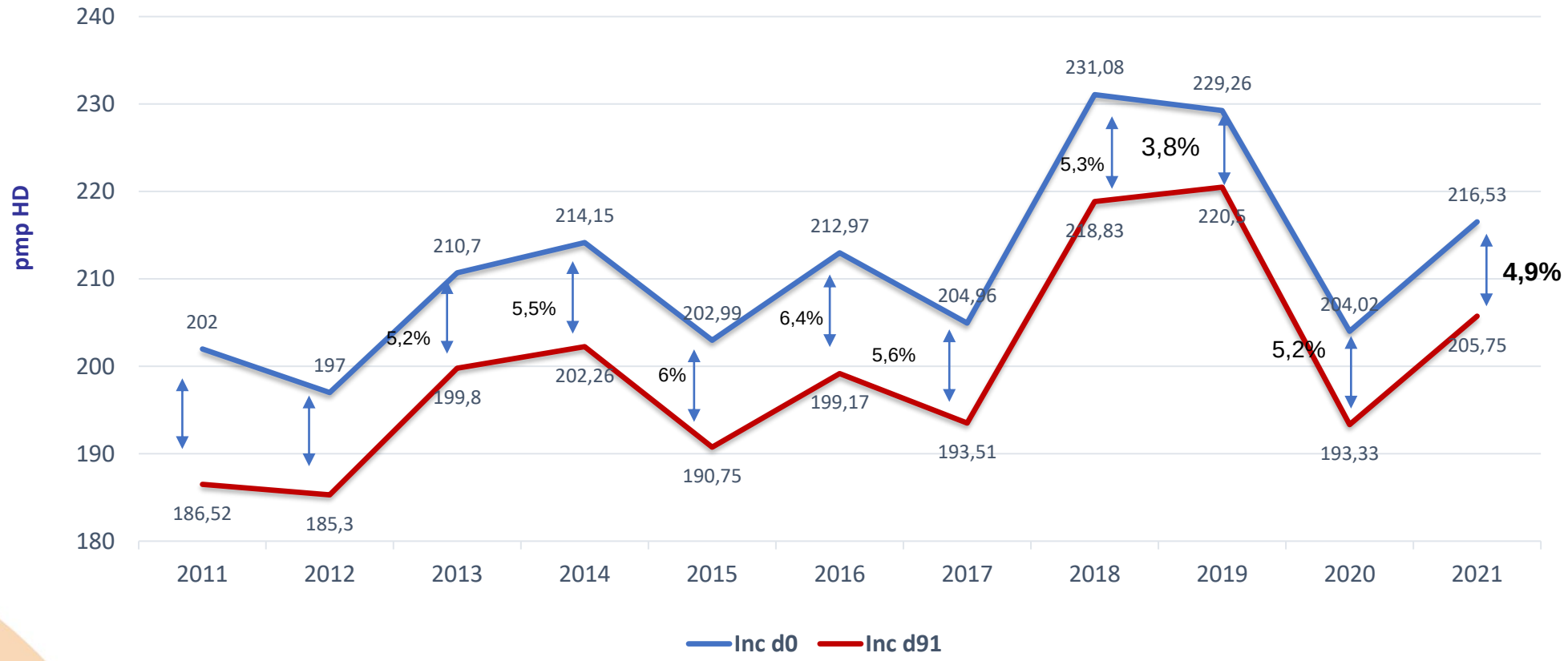
Incident patients accepted for hemodialysis

Day 0 and day 91, 2011-2021



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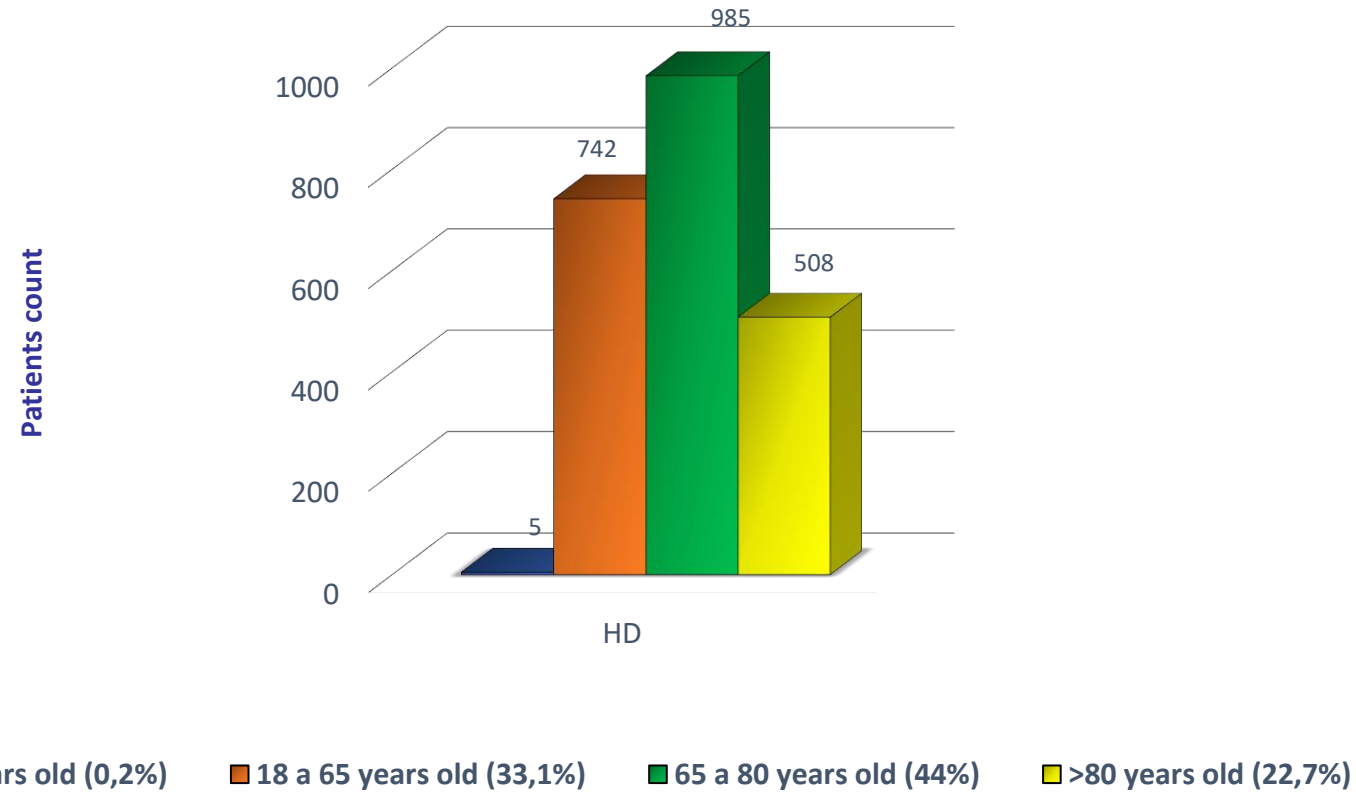
Patients accepted for hemodialysis
by age group, during 2021



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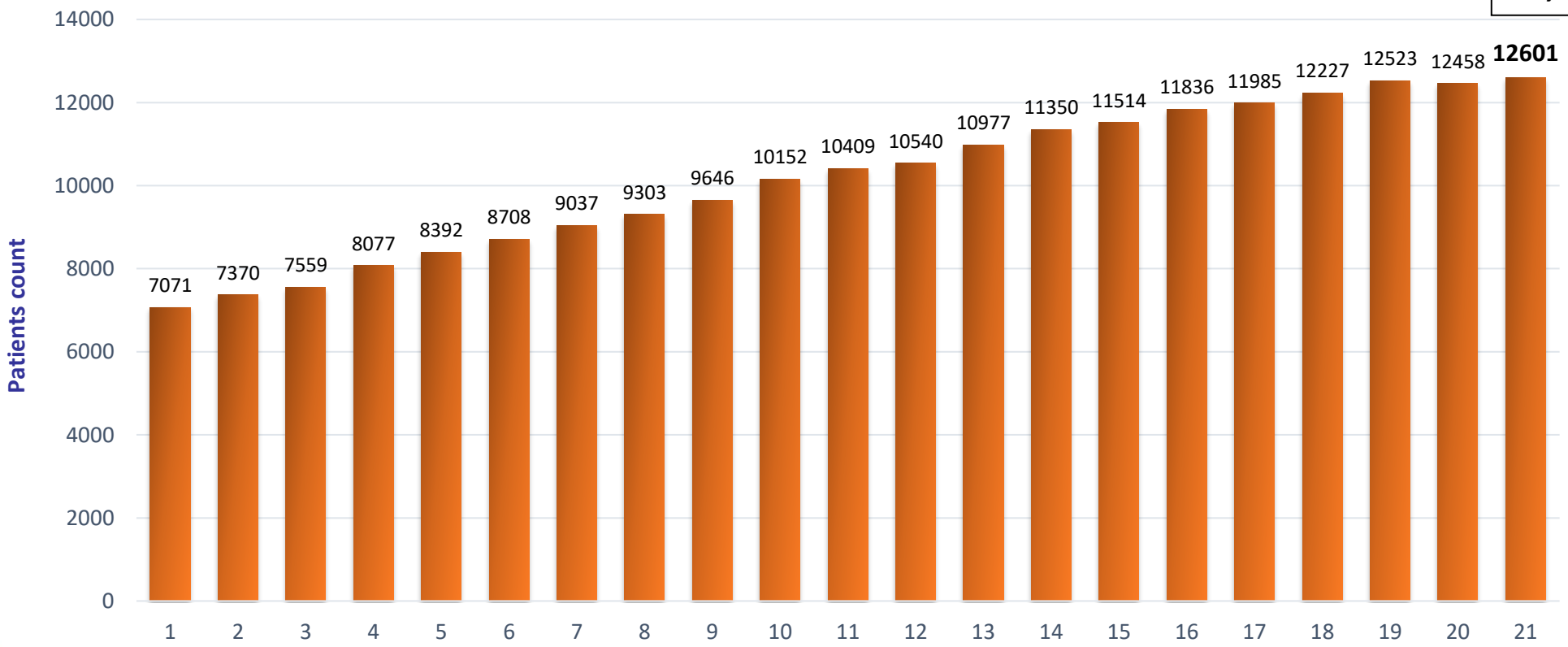
Patients treated by hemodialysis

31st of December each year, 2001 – 2021

+1,1 %



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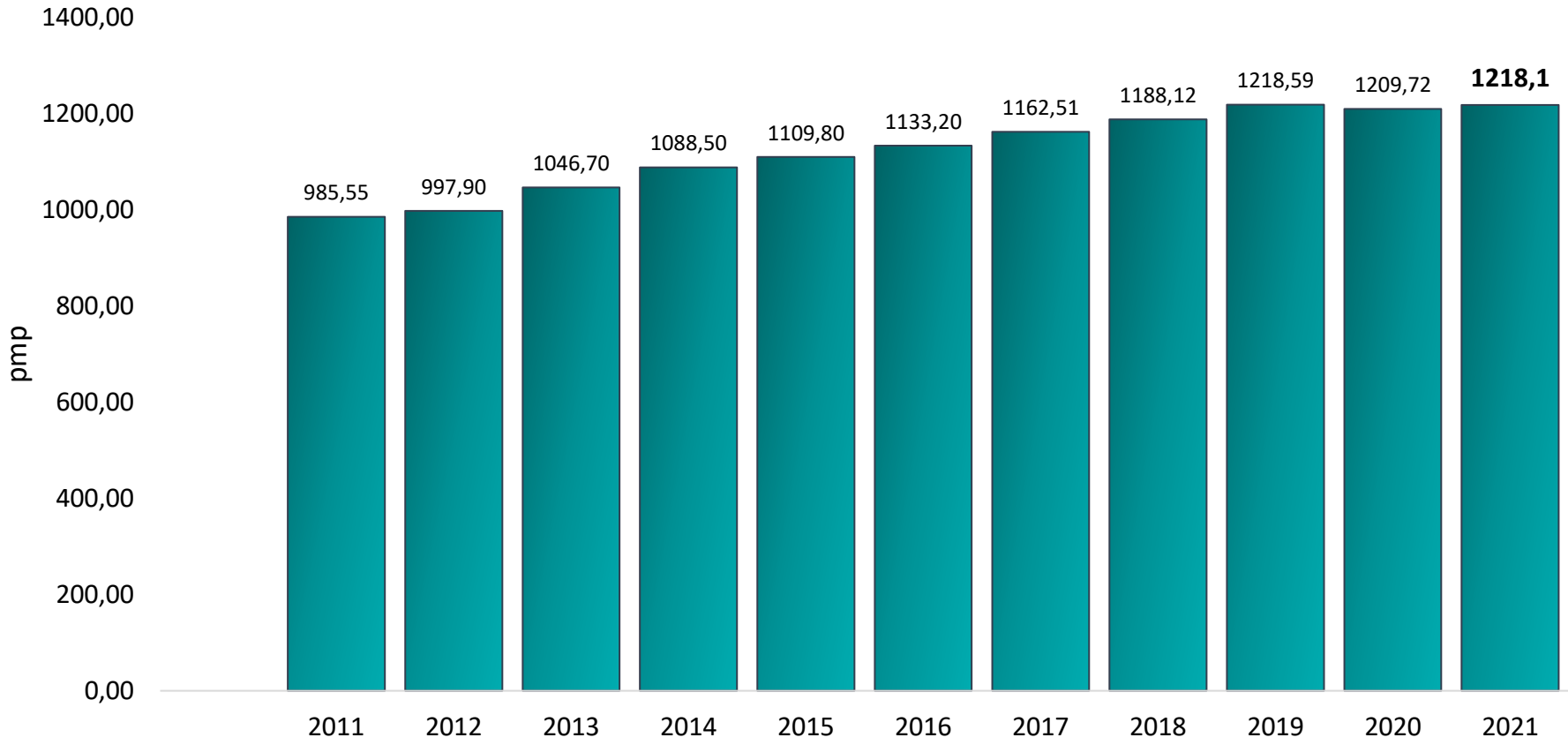
Prevalent patients treated by hemodialysis
per million population 2011 - 2021



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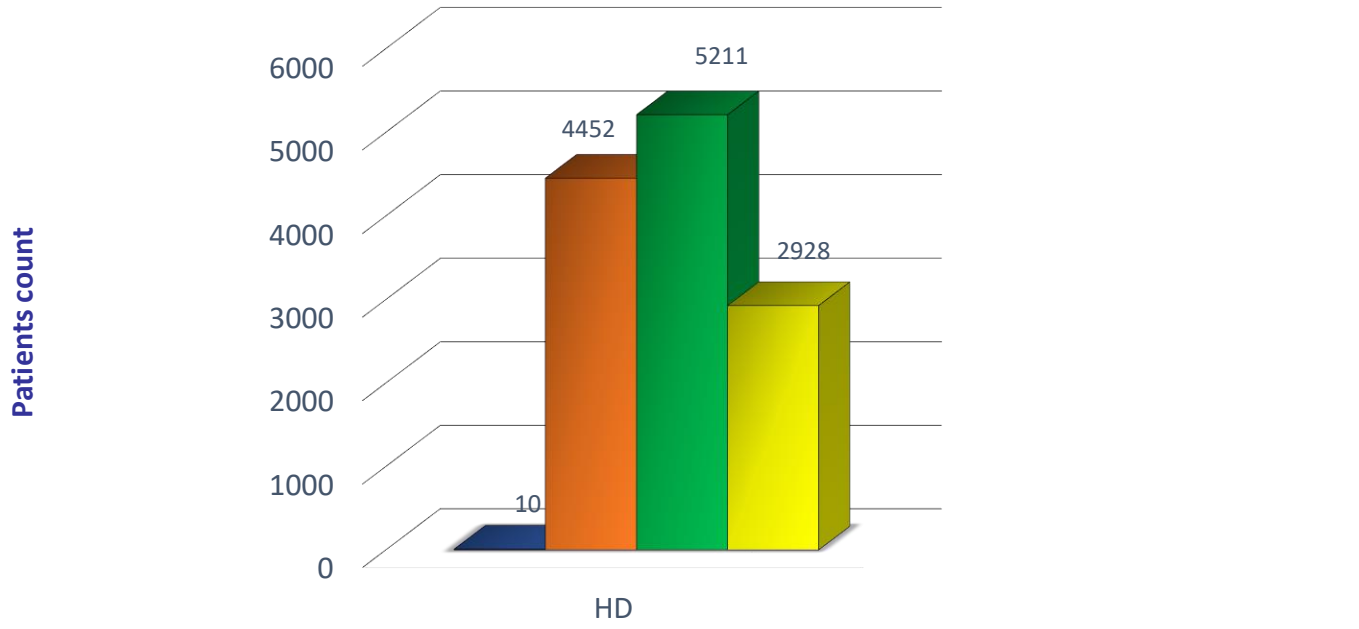
Patients treated by hemodialysis
by age group, 31st December **2021**



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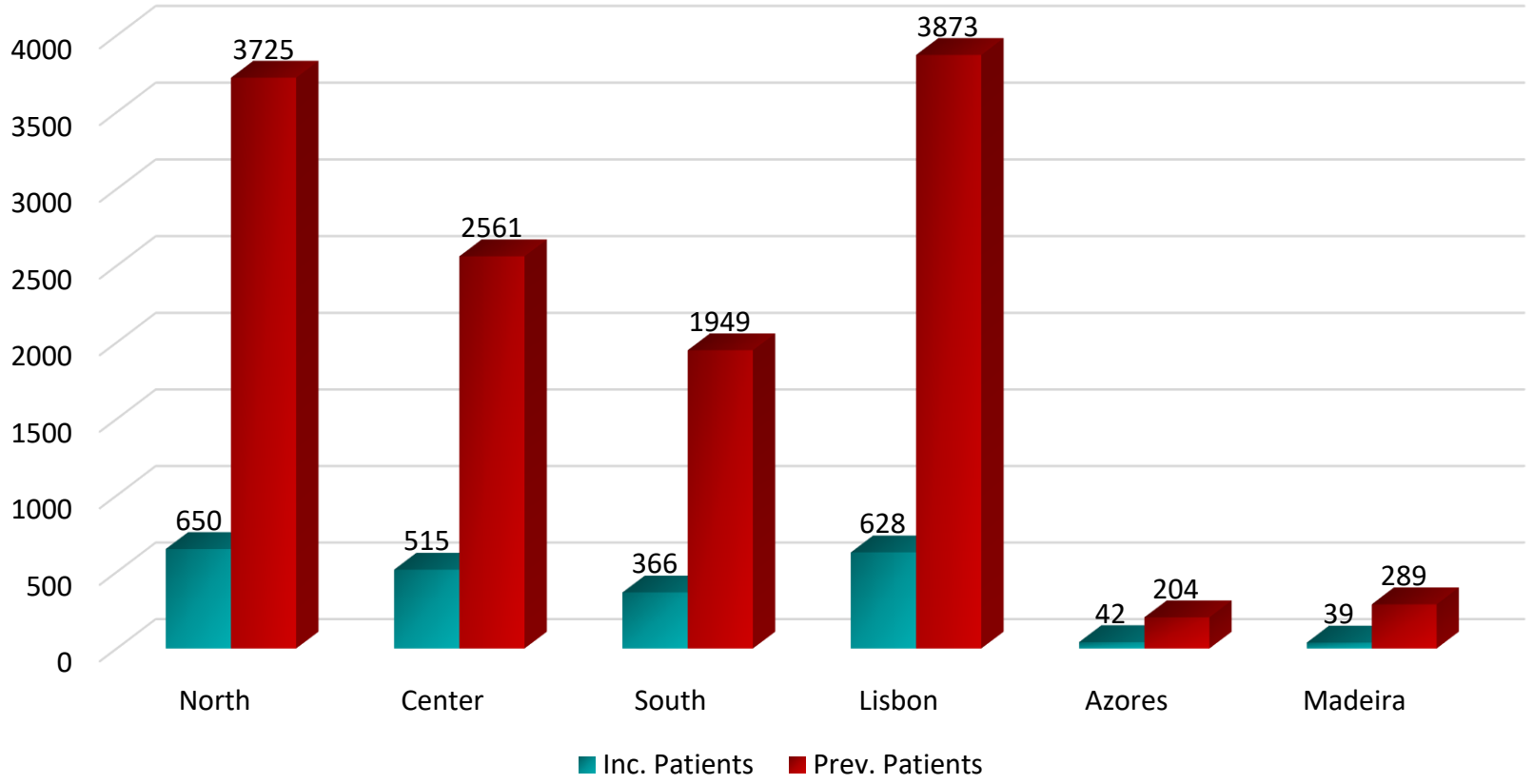
Incident and prevalent patients treated by hemodialysis *by country region, 2021*



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Incident and prevalent patients treated by hemodialysis *per million population by age group, 2021*

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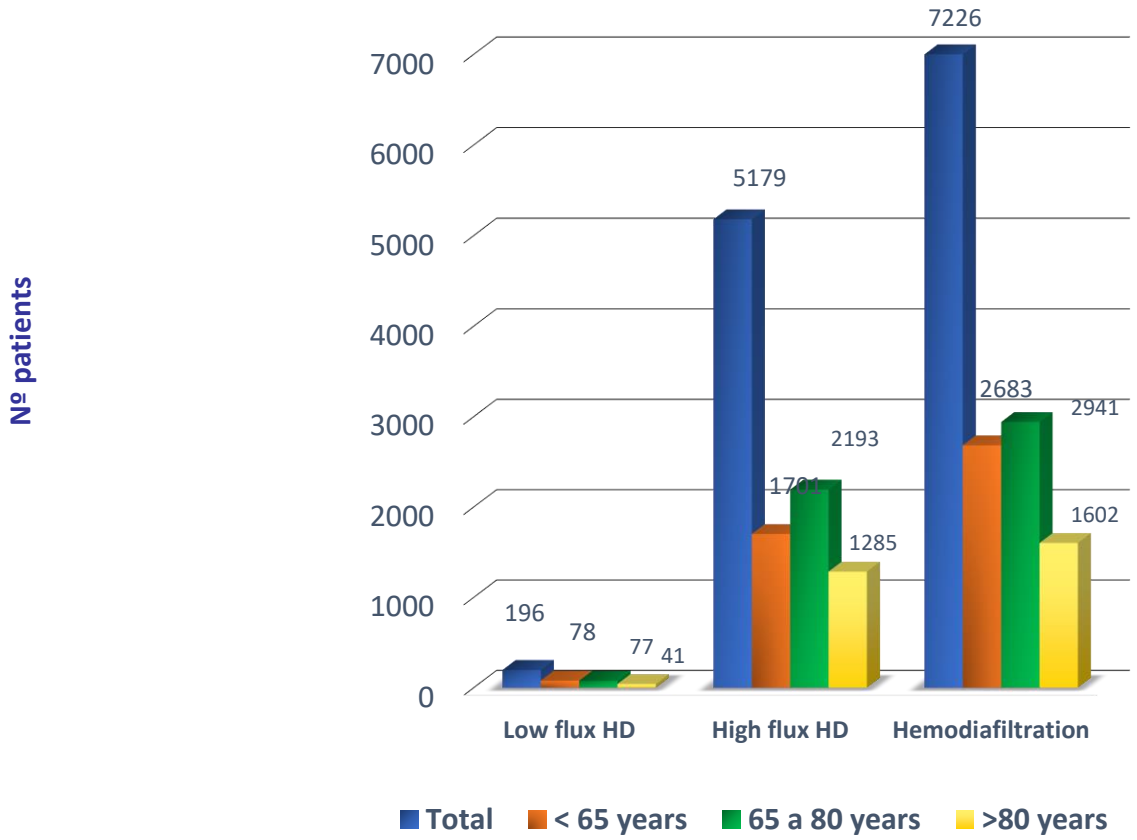
Patients treated by hemodialysis

distribution by techniques in each age group, 31st of December 2021



N = 12601
low flux 1,5 % (1,8 % in 2020)

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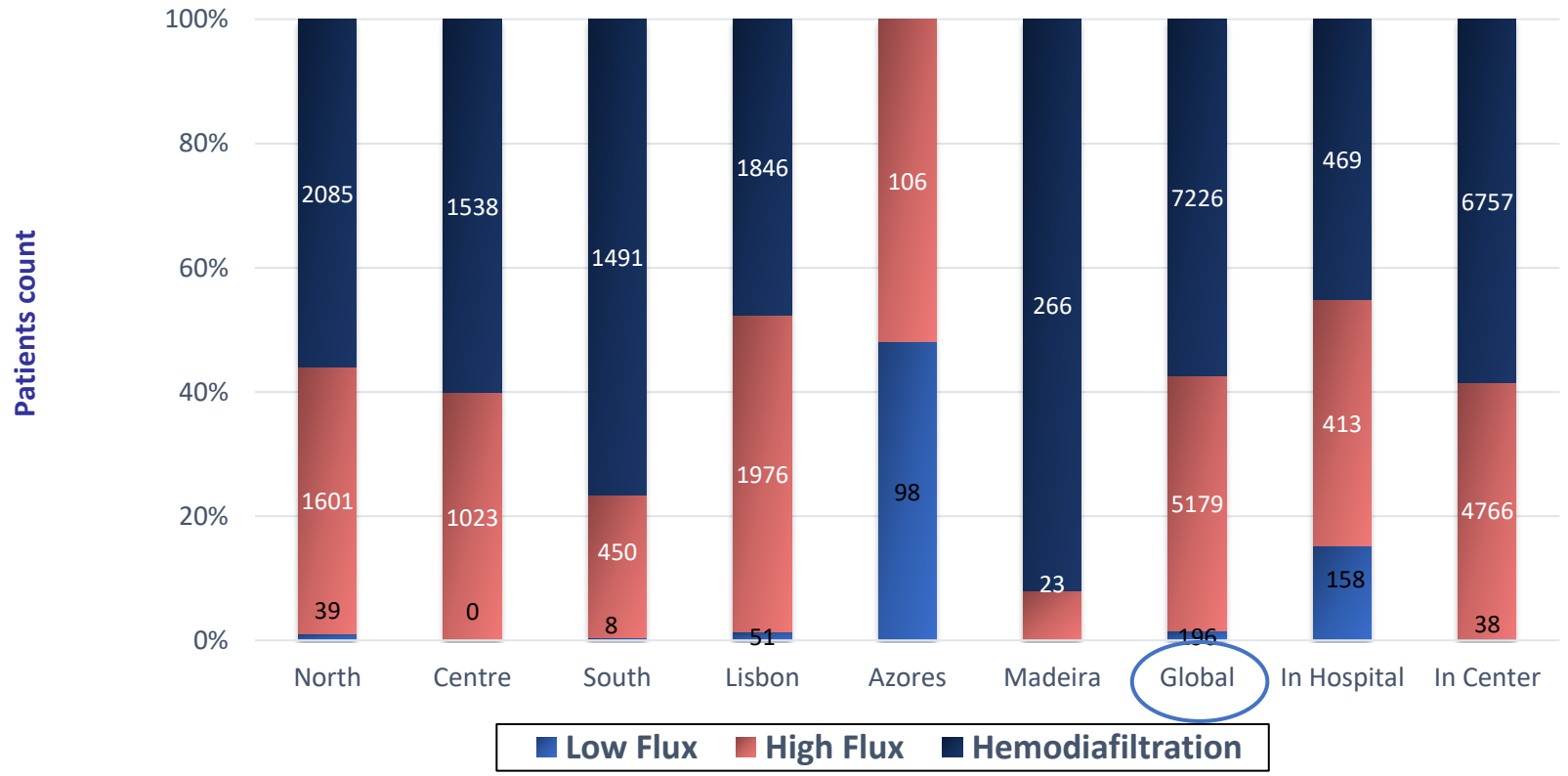
Patients treated by hemodialysis

distribution by techniques by region and facility type, 31st Dec. 2021



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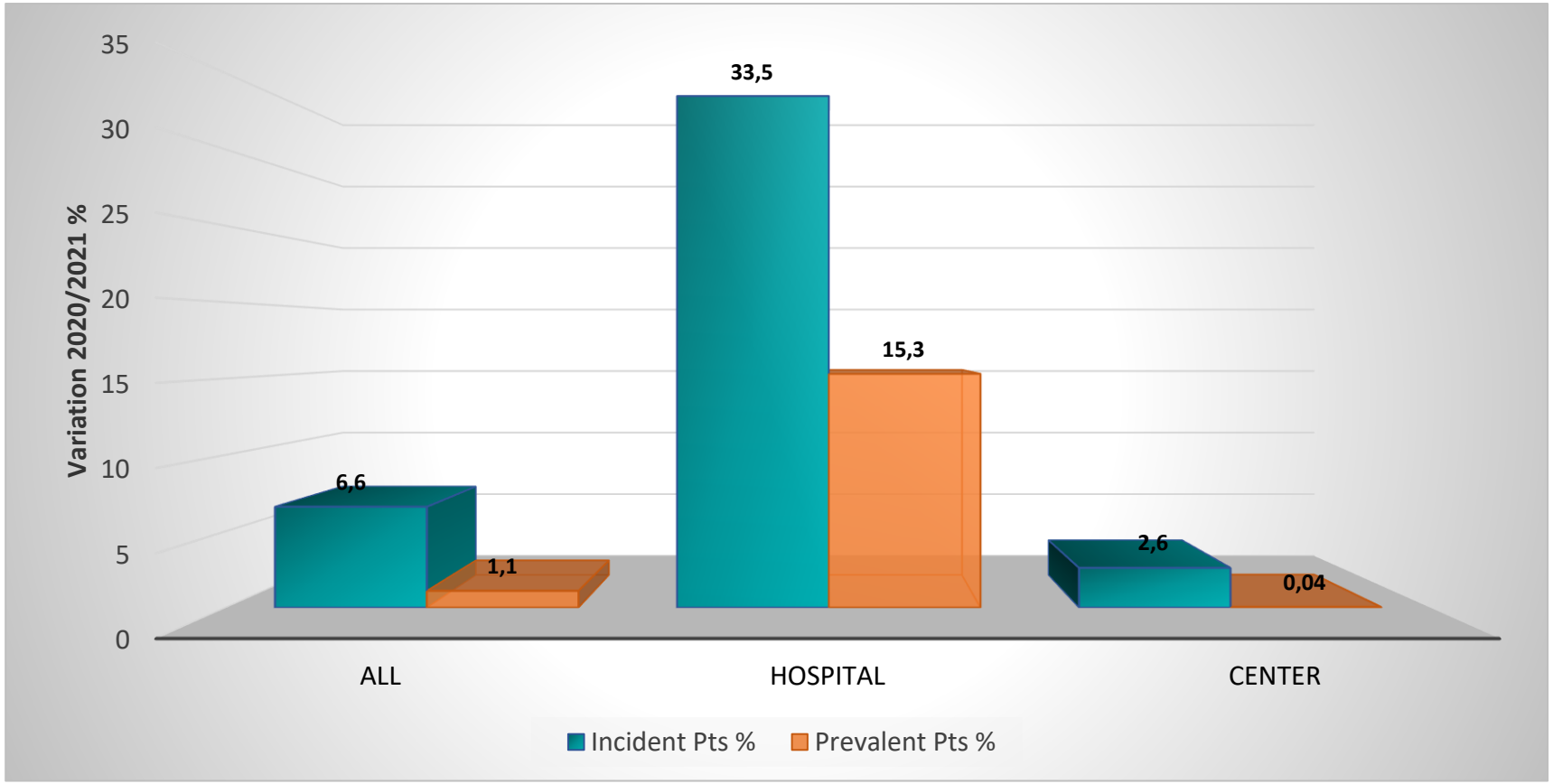
Hemodialysis growth 2021 vs 2020 (%)

31st of December each year



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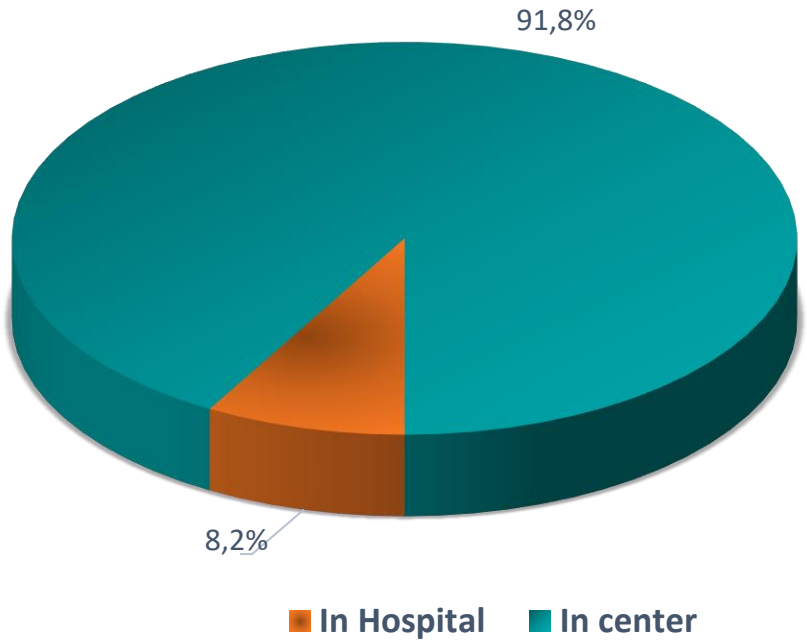
Distribution of hemodialysis patients by type of dialysis facility
31st of December 2021



N = 12601
In Hospital:1040
In Center:11561

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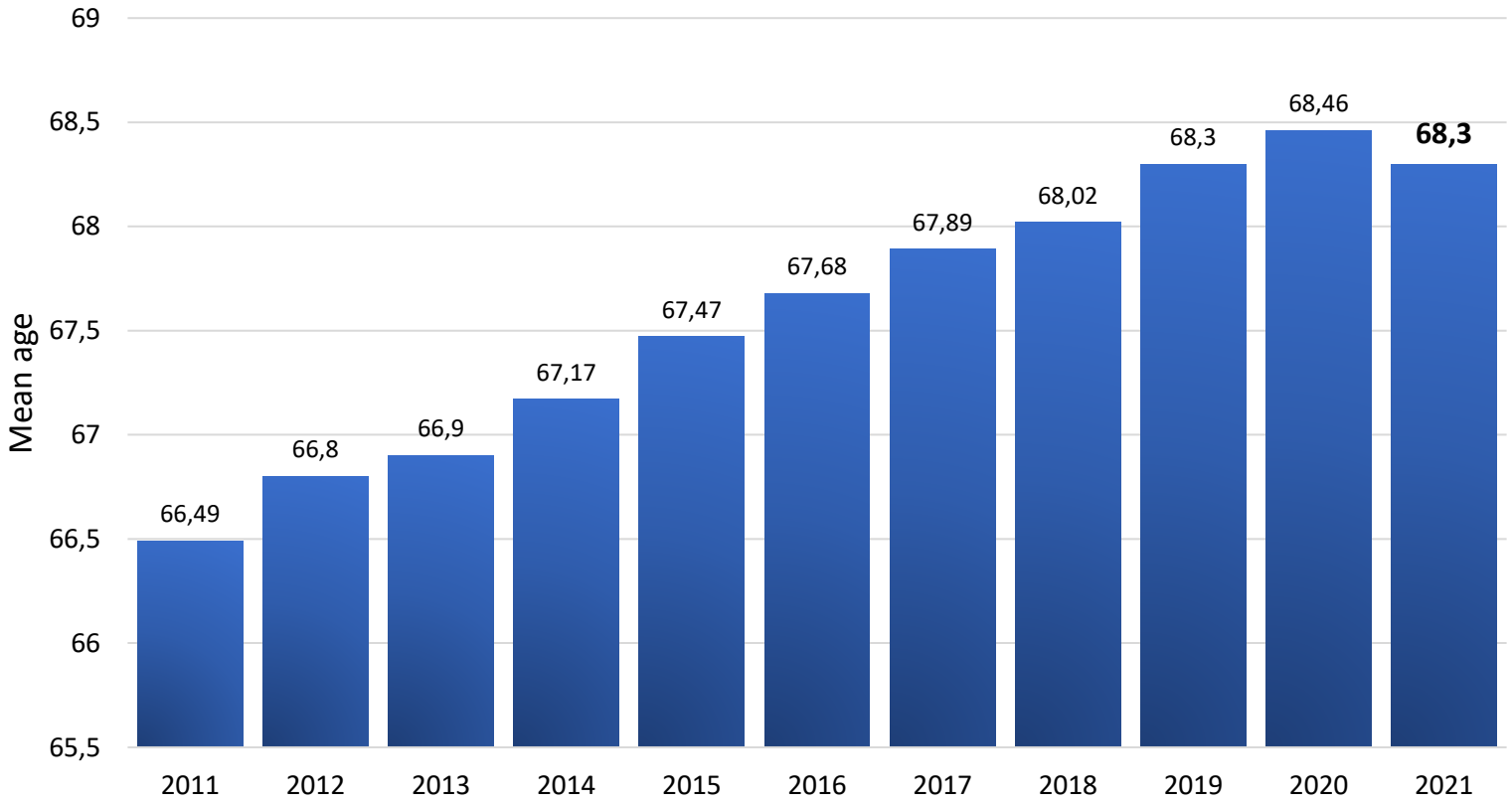
Mean Age of patients treated by hemodialysis
31st of December 2011 – 2021



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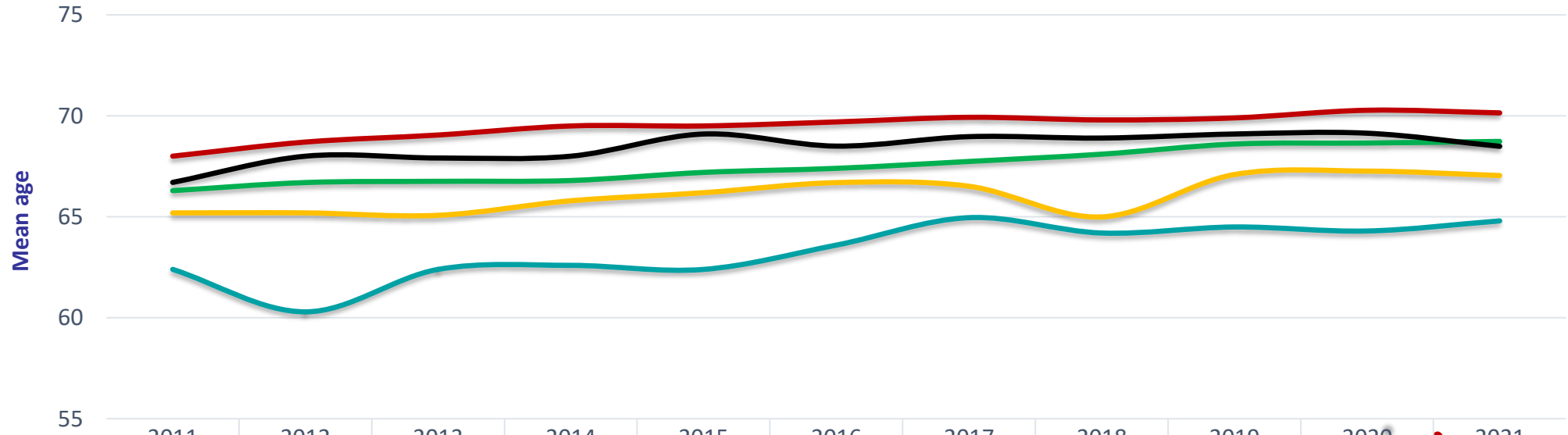
Mean Age of patients treated by hemodialysis
by country region, 31st of December 2011 – 2021



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Islands	62,4	60,3	62,4	62,6	62,4	63,6	65,0	64,2	64,5	64,3	64,8
Lisbon	65,2	65,2	65,1	65,8	66,2	66,7	66,5	65	67,1	67,27	67,05
North	66,3	66,7	66,8	66,8	67,2	67,4	67,7	68,1	68,6	68,65	68,73
South	66,7	68	67,9	68	69,1	68,5	69,0	68,9	69,1	69,14	68,49
Centre	68	68,7	69,1	69,5	69,5	69,7	69,9	69,8	69,9	70,28	70,15

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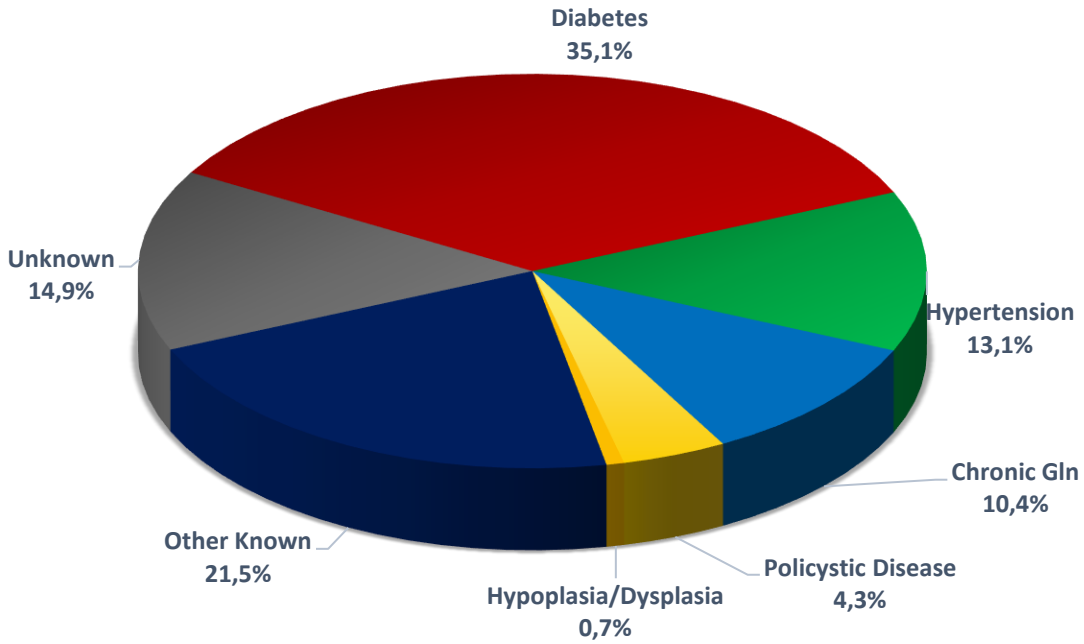
Primary renal disease of patients accepted for hemodialysis *during 2021*



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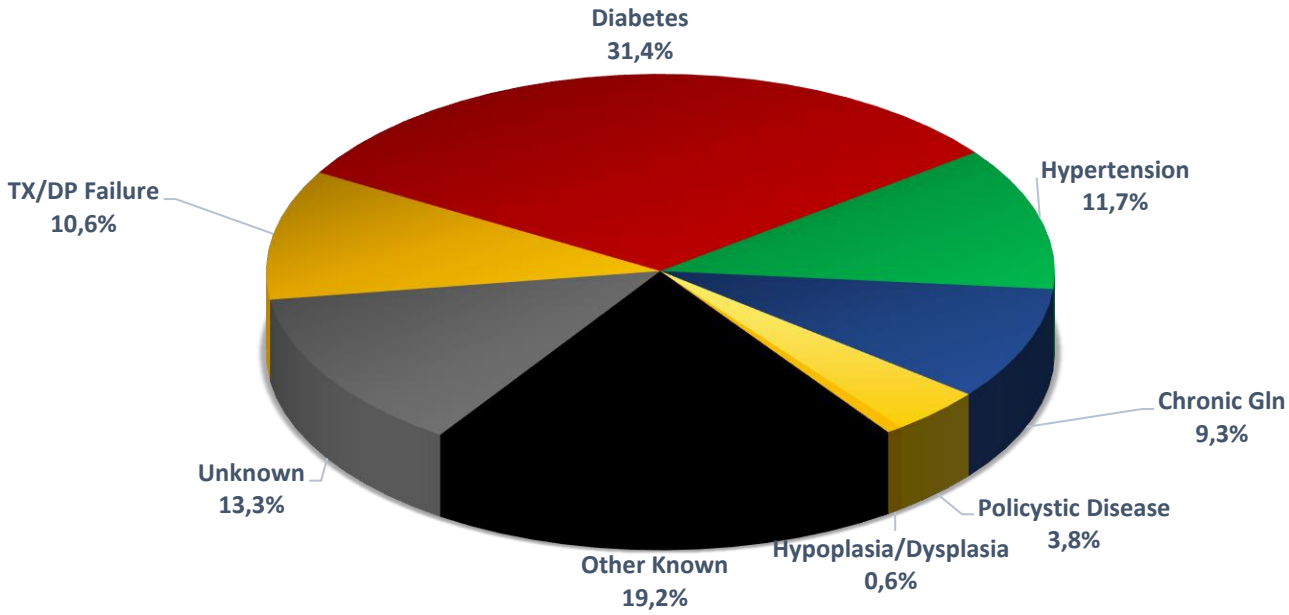
Etiology of All patients accepted for hemodialysis *during 2021*



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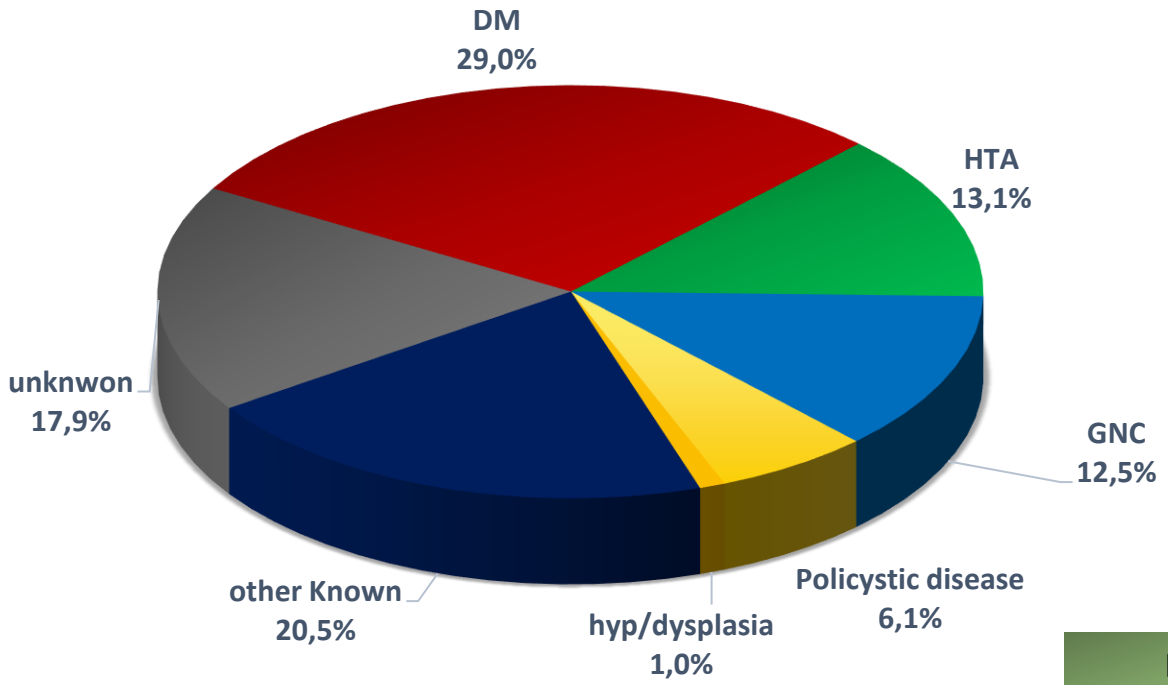
Primary renal disease of prevalent hemodialysis patients
31st December 2021



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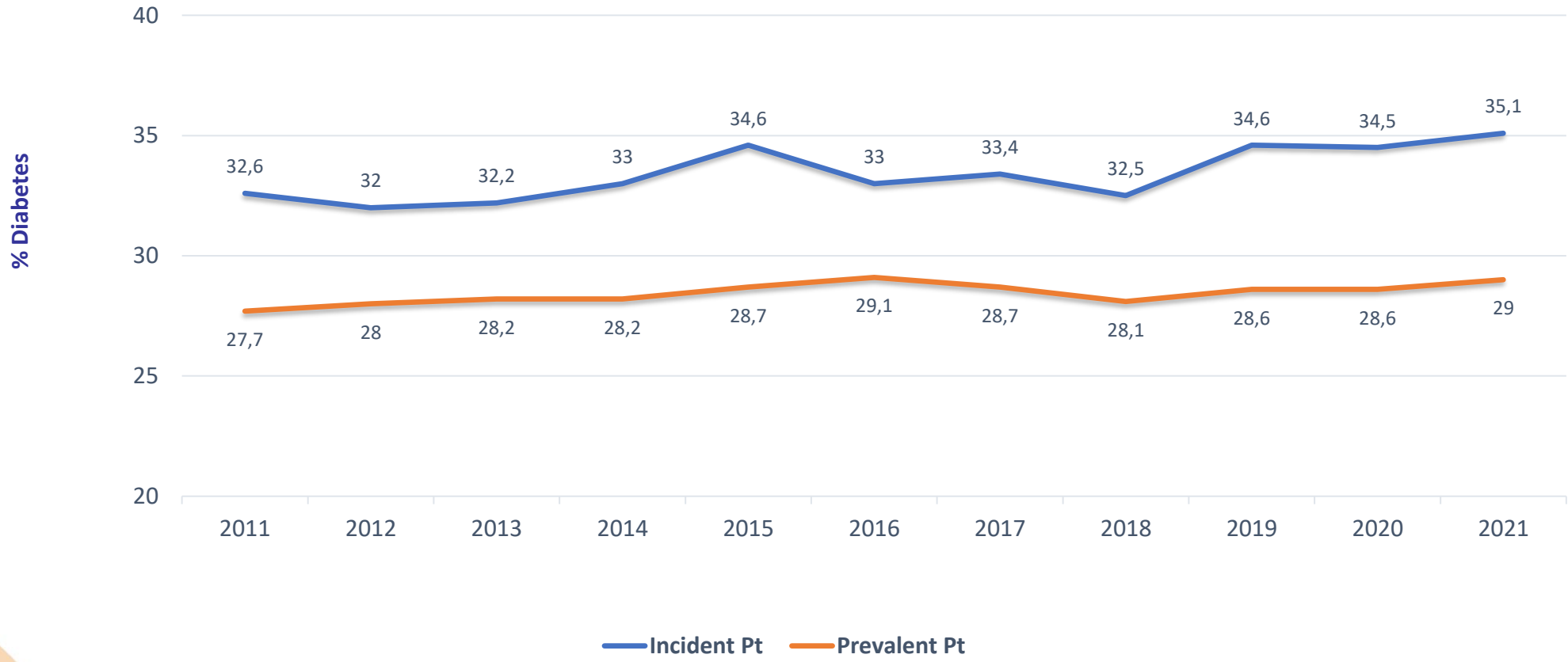
Diabetes as primary renal disease in HD patients
Incident and prevalent (%) *2011 - 2021*



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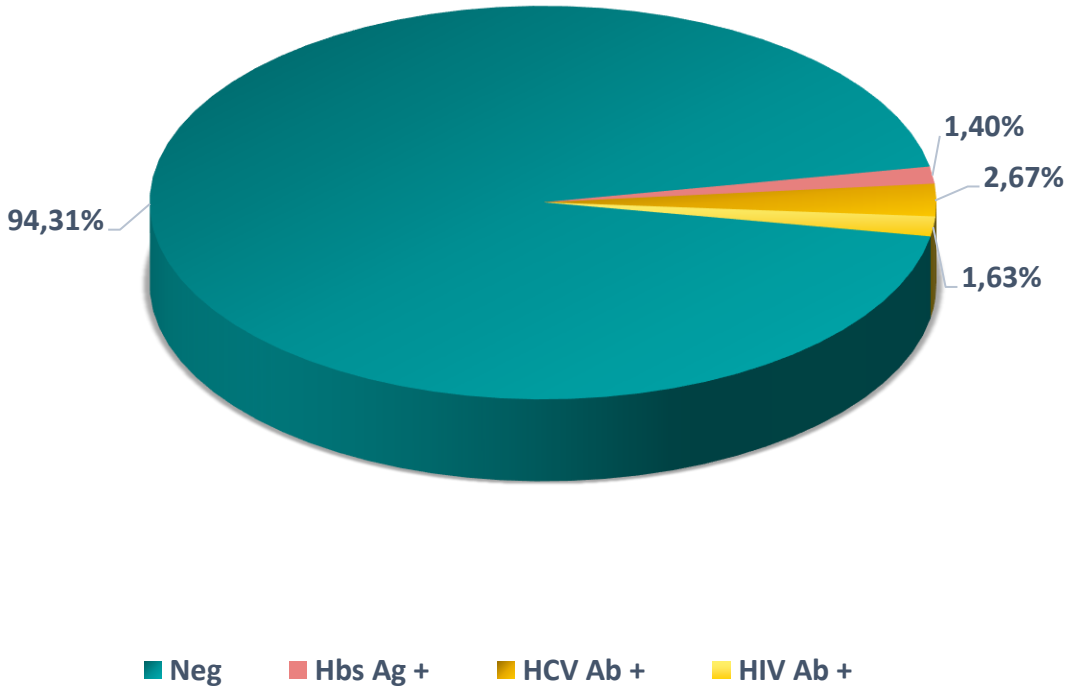
Viral status in HD prevalent patients
31st December 2021



N = 12601

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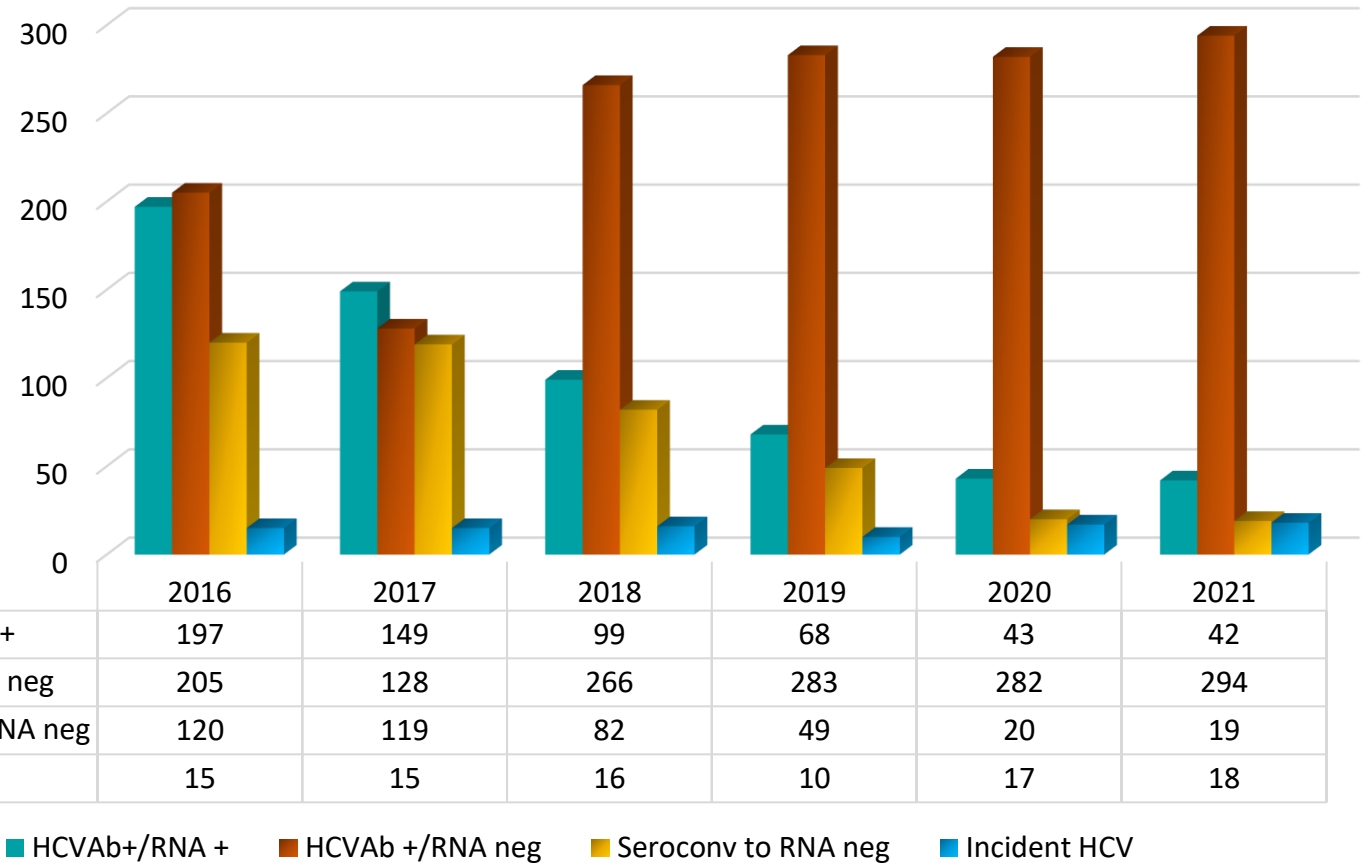
Hepatitis C viral status in HD prevalent pts

31st December 2016 – 2021



	2016	2017	2018	2019	2020	2021
HCVAb+/RNA +	197	149	99	68	43	42
HCVAb +/RNA neg	205	128	266	283	282	294
Seroconv to RNA neg	120	119	82	49	20	19
Incident HCV	15	15	16	10	17	18

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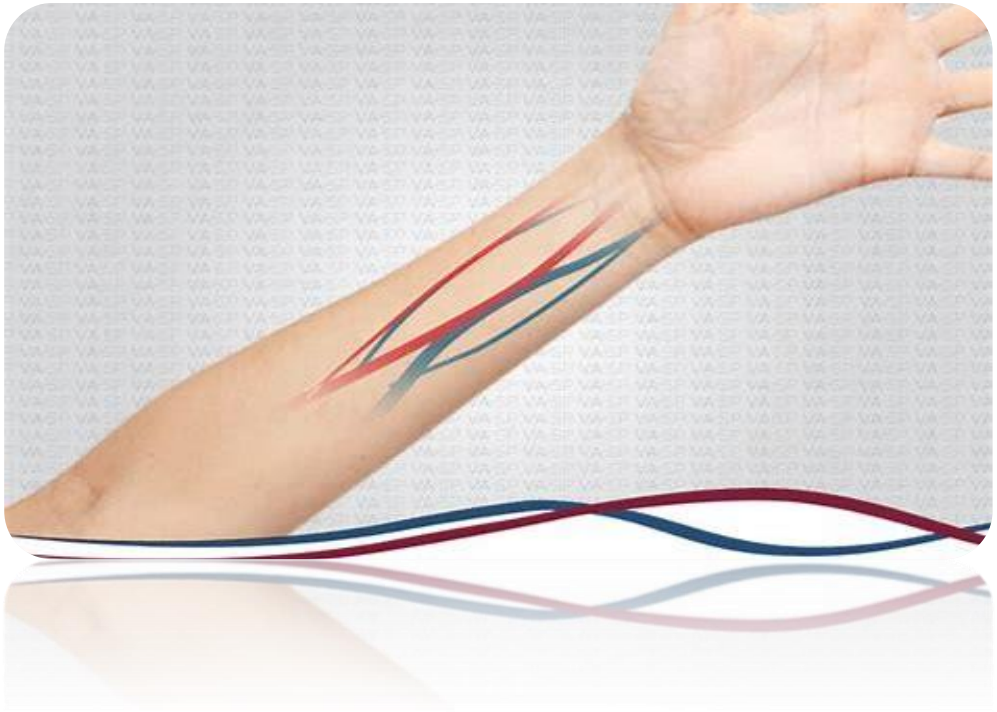
Vascular access



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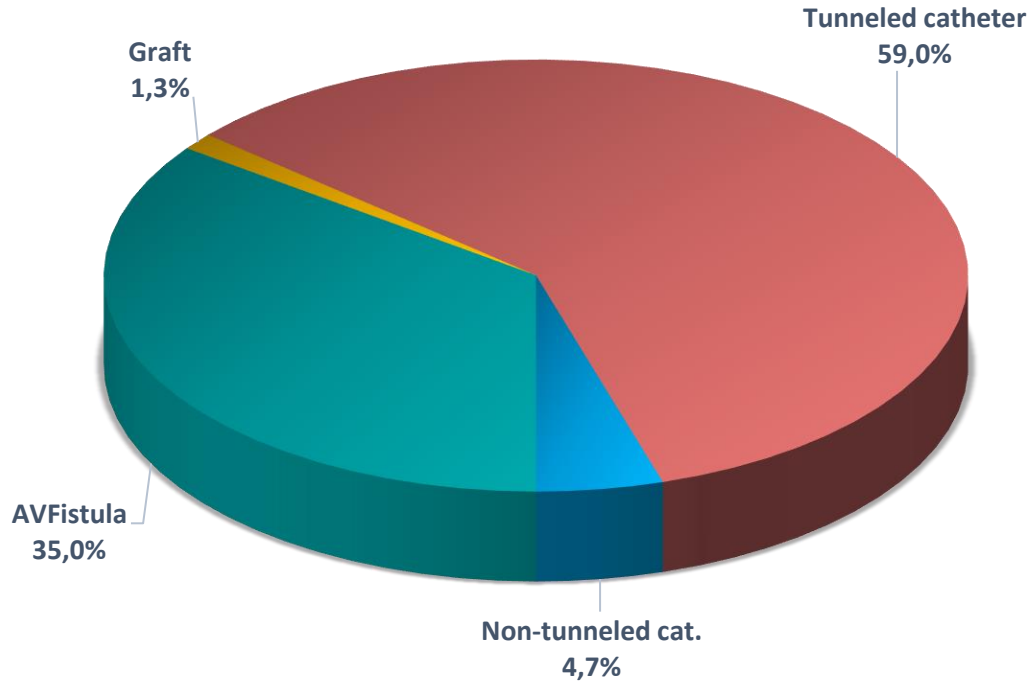
Vascular access of HD incident patients *during 2021*



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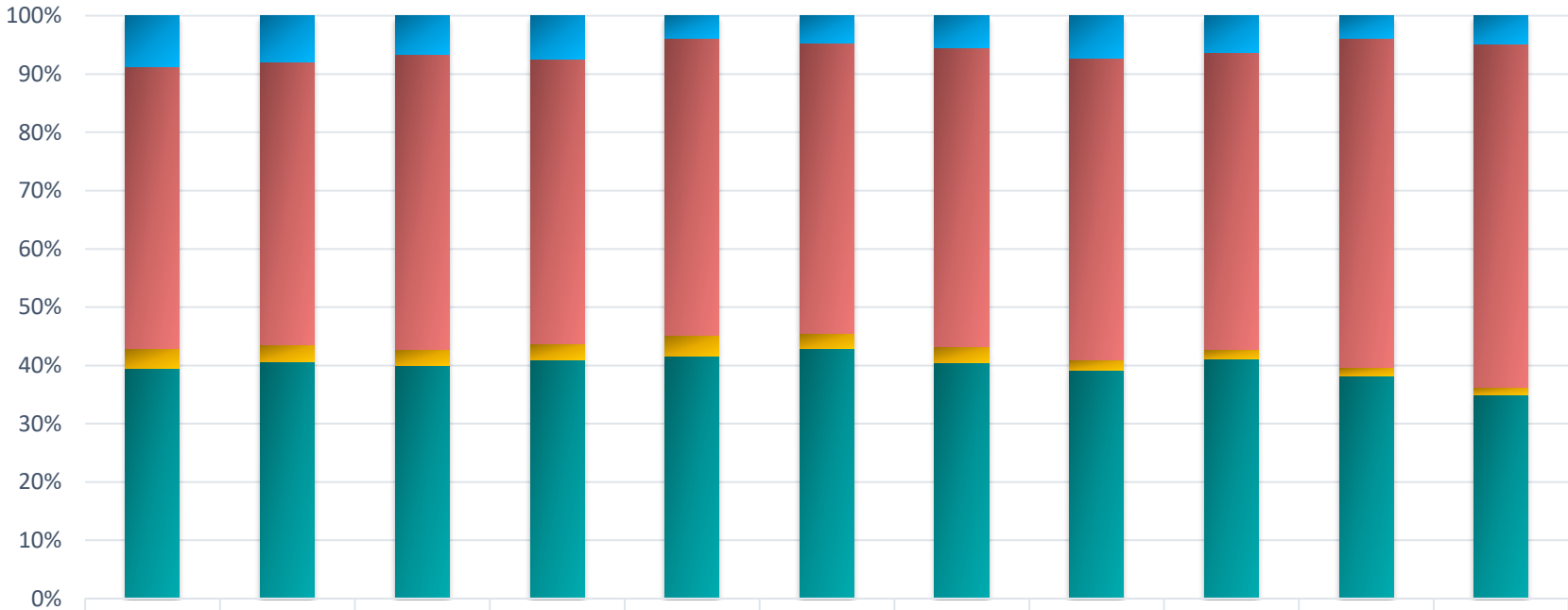
Vascular access of HD incident patients
2011 – 2021



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Non-tunneled cat.	188	163	143	163	81	103	117	173	148	80	105
Tunneled cat.	1033	1007	1101	1088	1068	1093	1094	1222	1196	1185	1309
Graft	71	61	61	60	74	59	57	45	40	30	28
AVFistula	844	844	870	912	872	940	862	926	965	800	777

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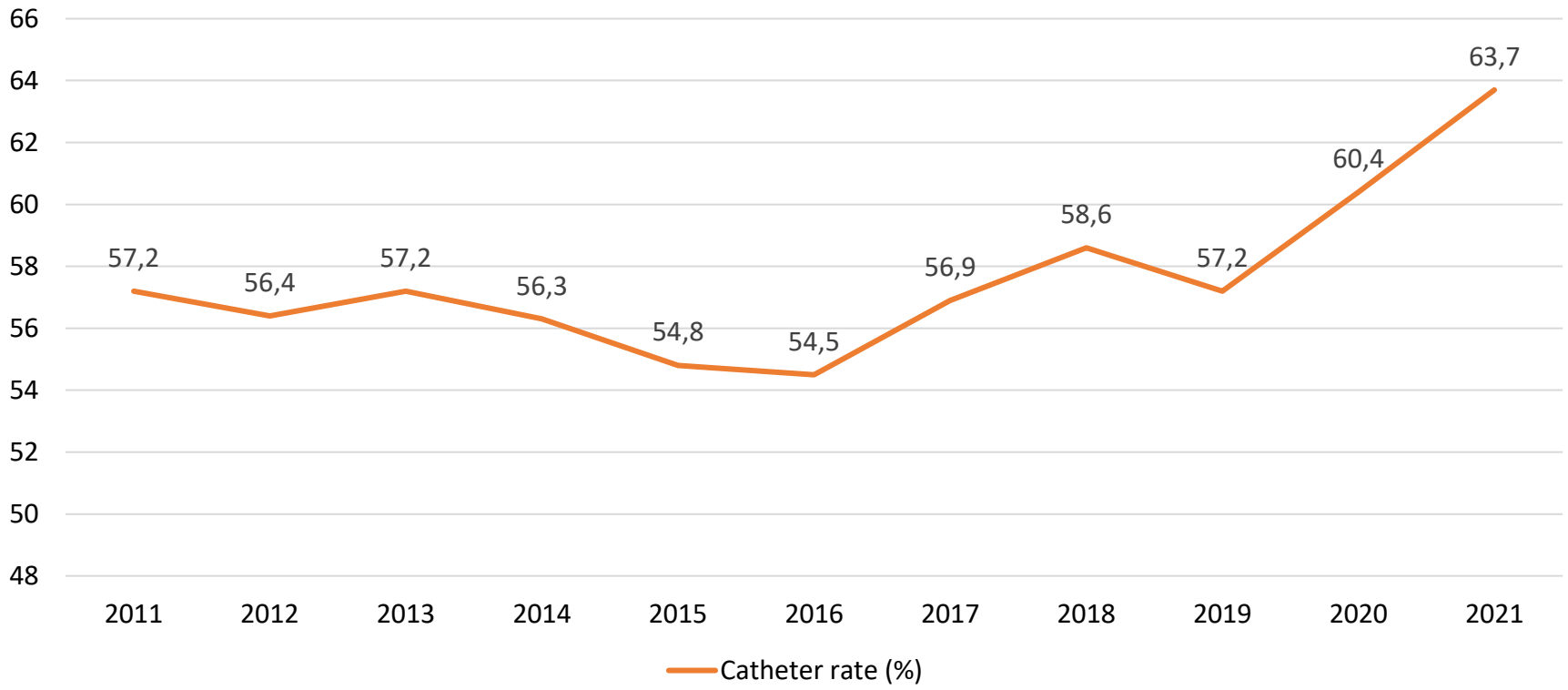
Catheter rate (%) in the first HD session of incident patients
2011 – 2021



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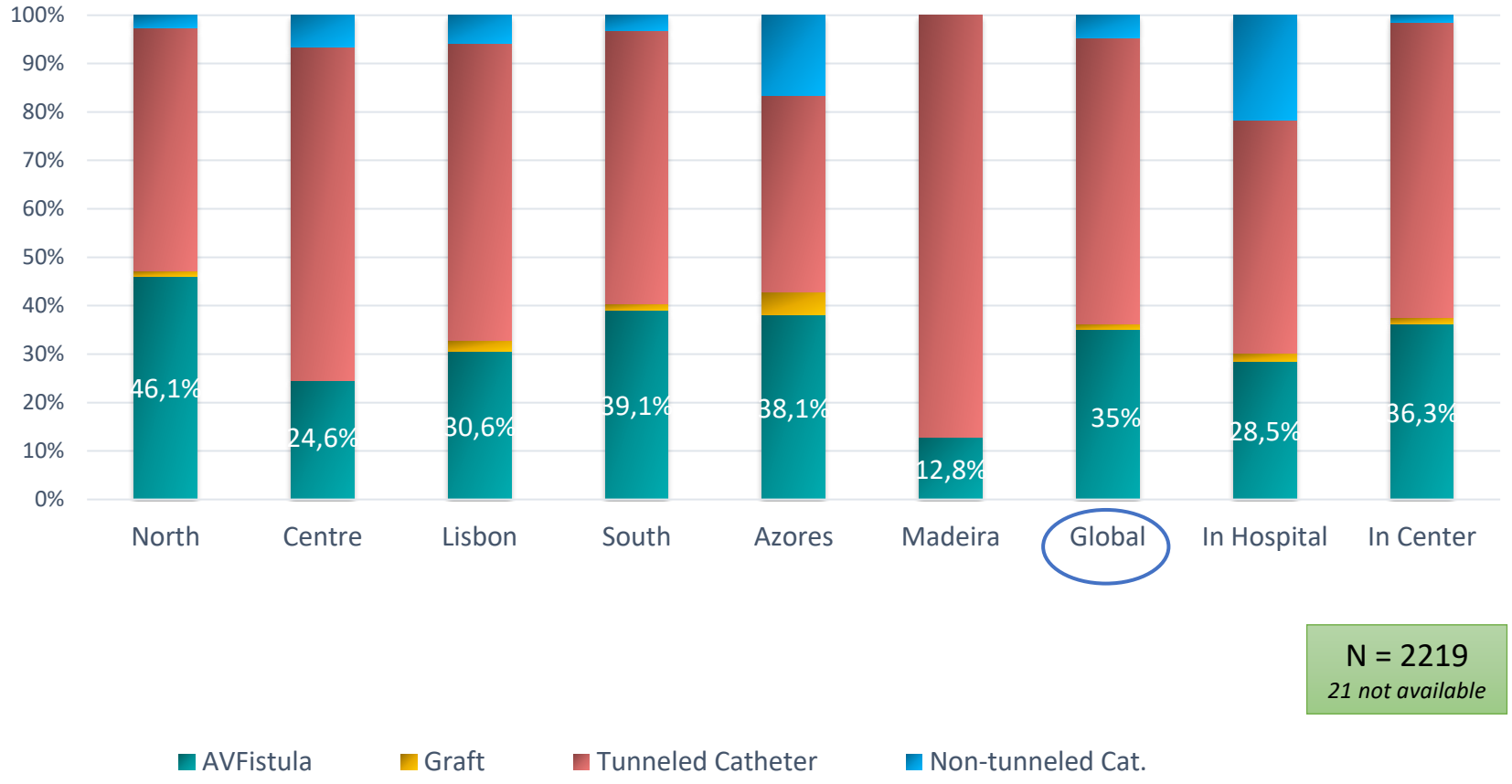
Vascular access of HD incident patients
by country region and facility type



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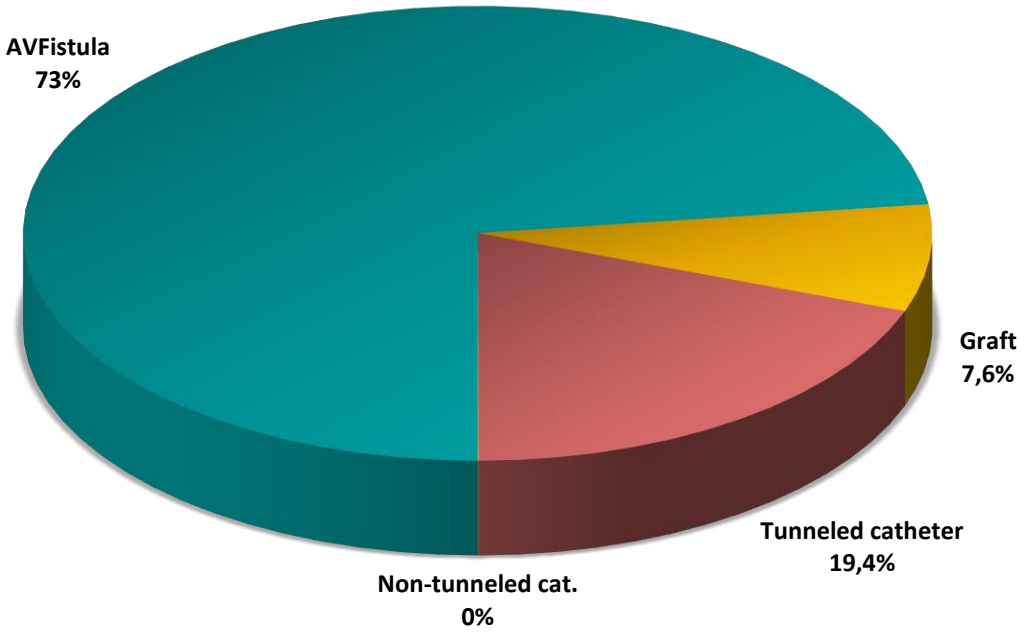
Vascular access of HD prevalent patients
31st December 2021



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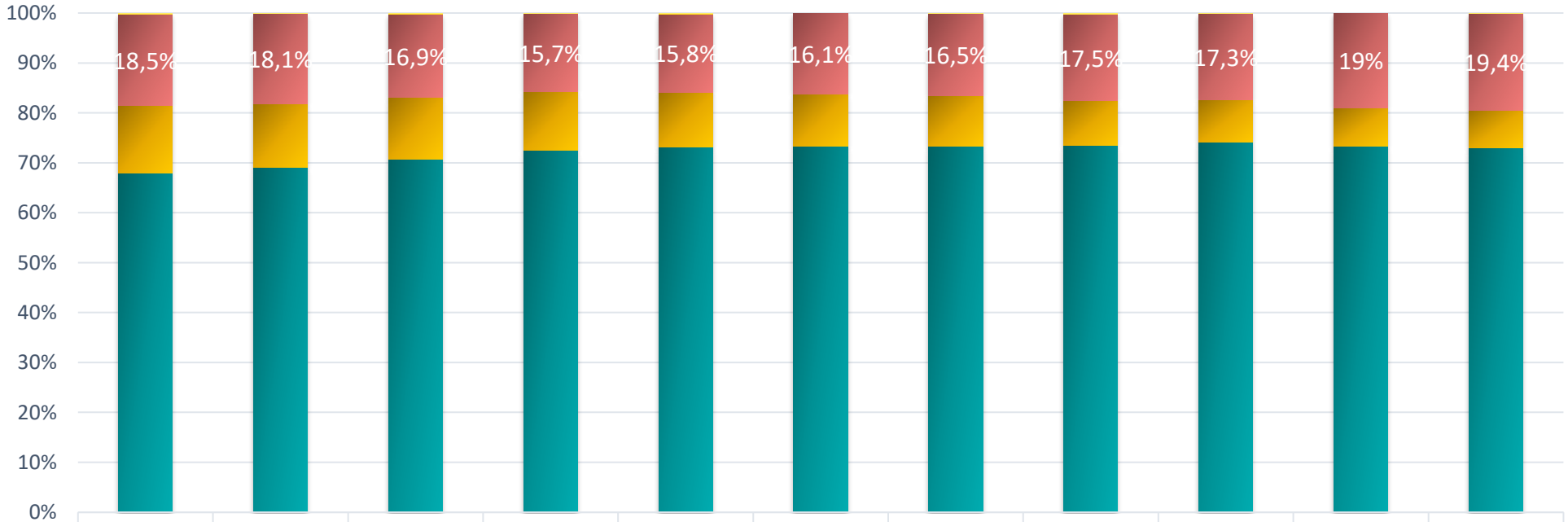
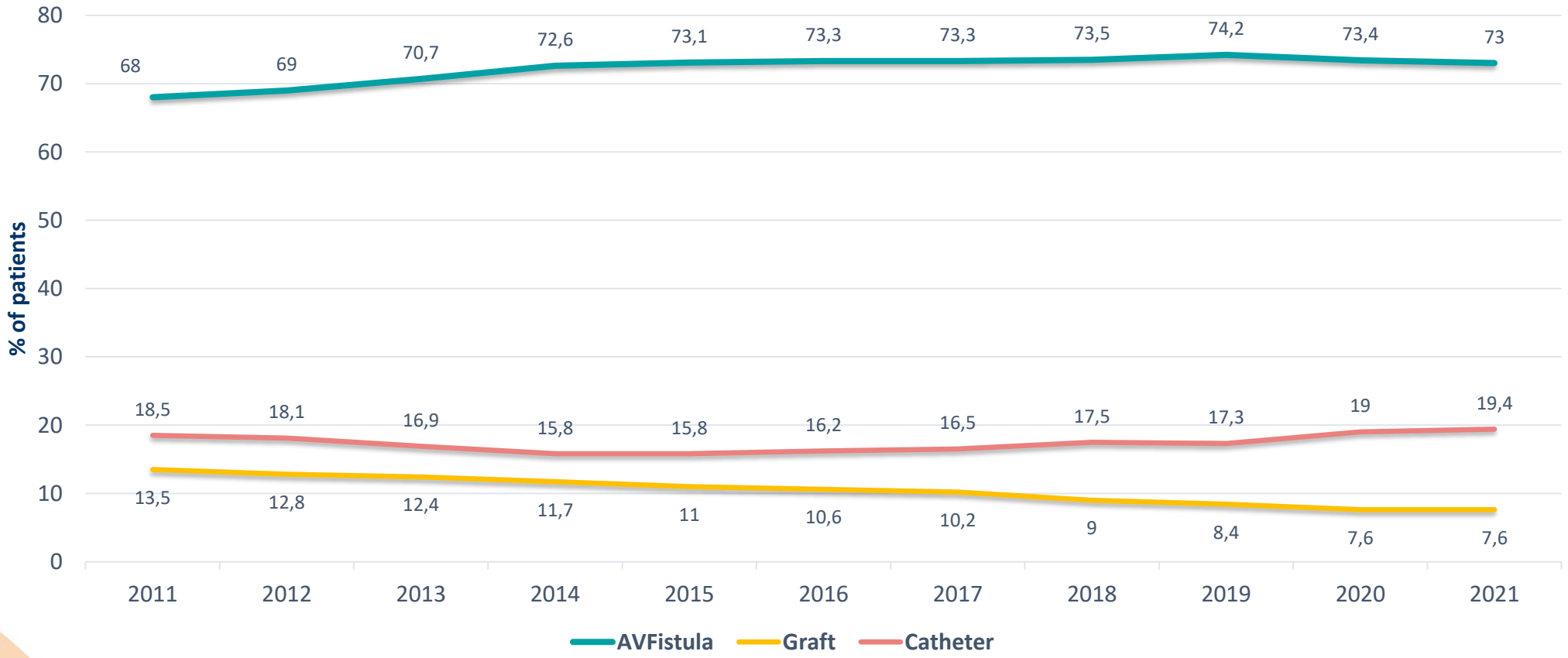
Vascular access of HD prevalent patients
31st December, 2011 - 2021



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Non-Tunneled Cat	25	16	23	15	24	2	10	35	6	0	3
Tunneled Catheter	1905	1889	1834	1770	1804	1895	1971	2109	2170	2371	2444
Graft	1402	1349	1358	1317	1273	1239	1216	1101	1049	950	959
AVFistula	7077	7257	7750	8202	8434	8598	8782	8978	9283	9137	9193

Vascular access of prevalent patients (%)
31st December, 2011 - 2021



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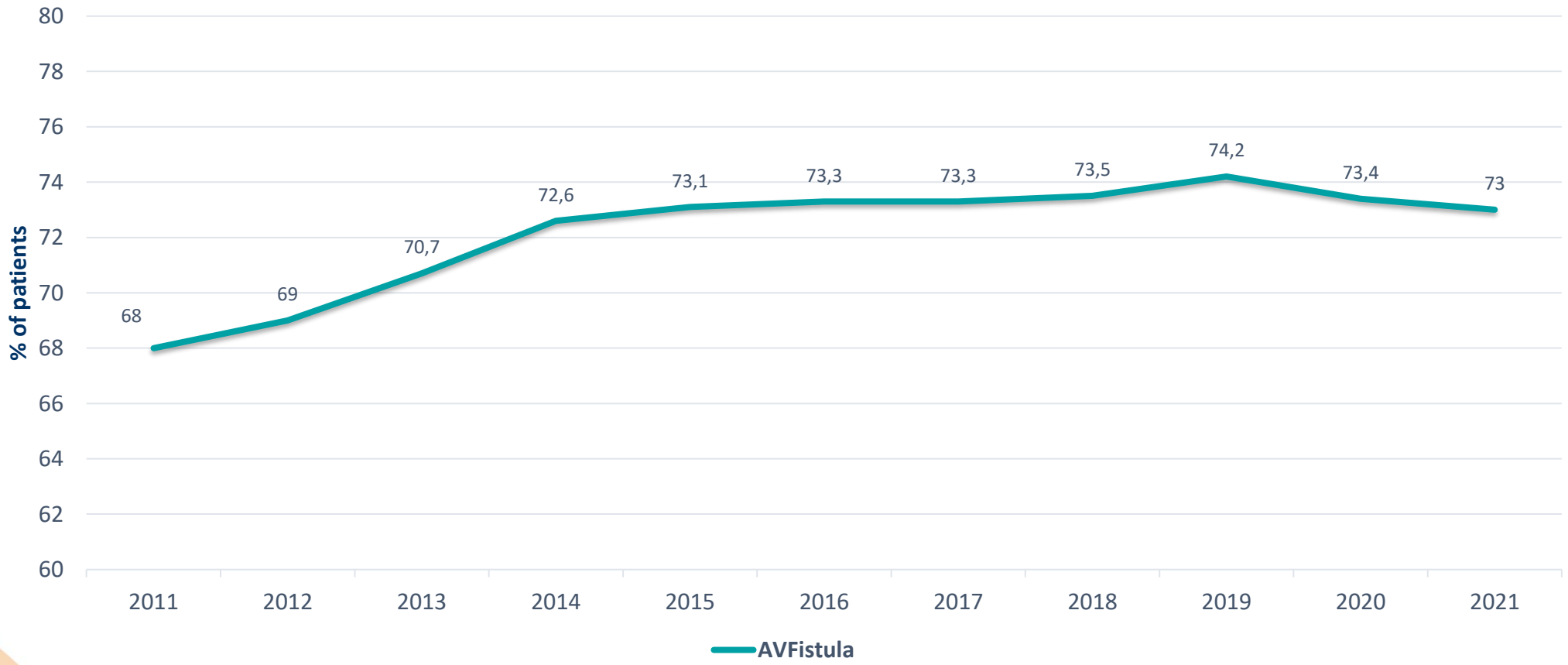
AV Fistula rate of prevalent patients (%)

31st December, 2011 - 2021



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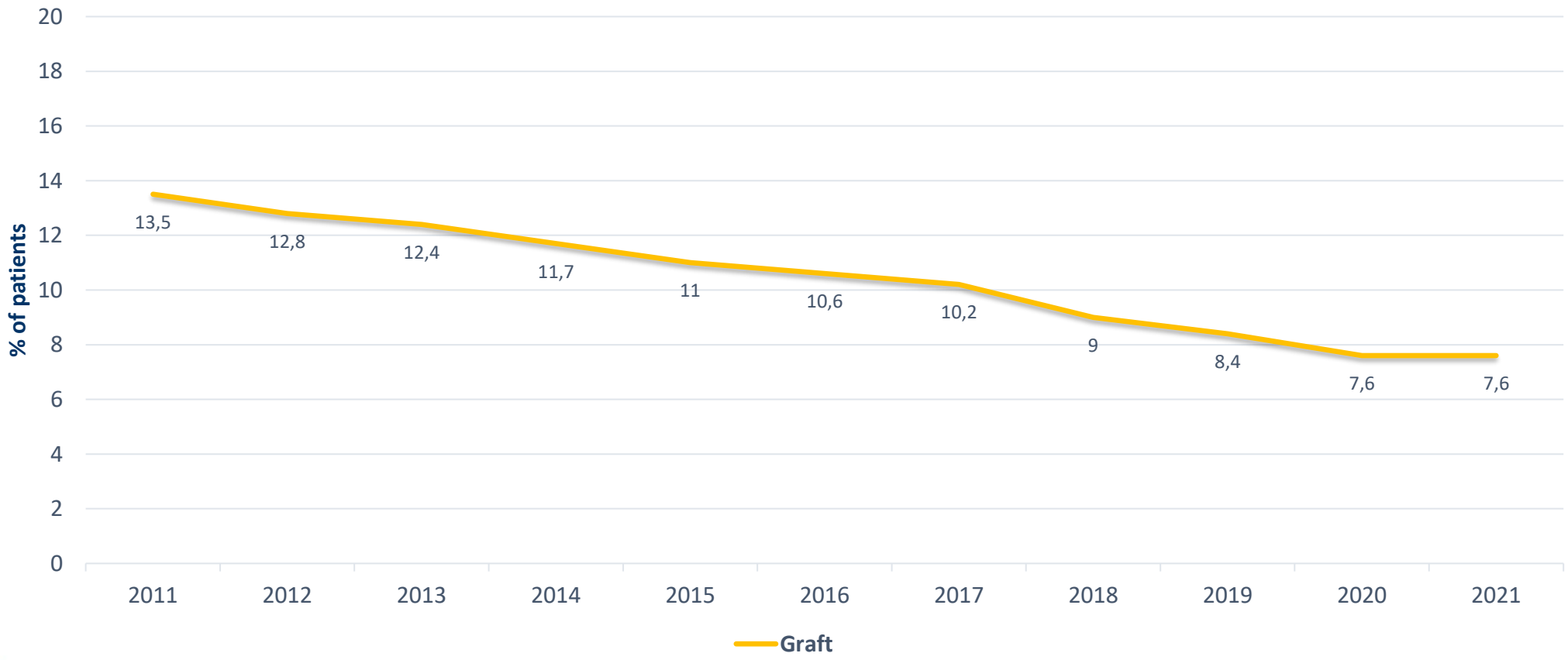
Graft rate of prevalent patients (%)
31st December, 2011 - 2021



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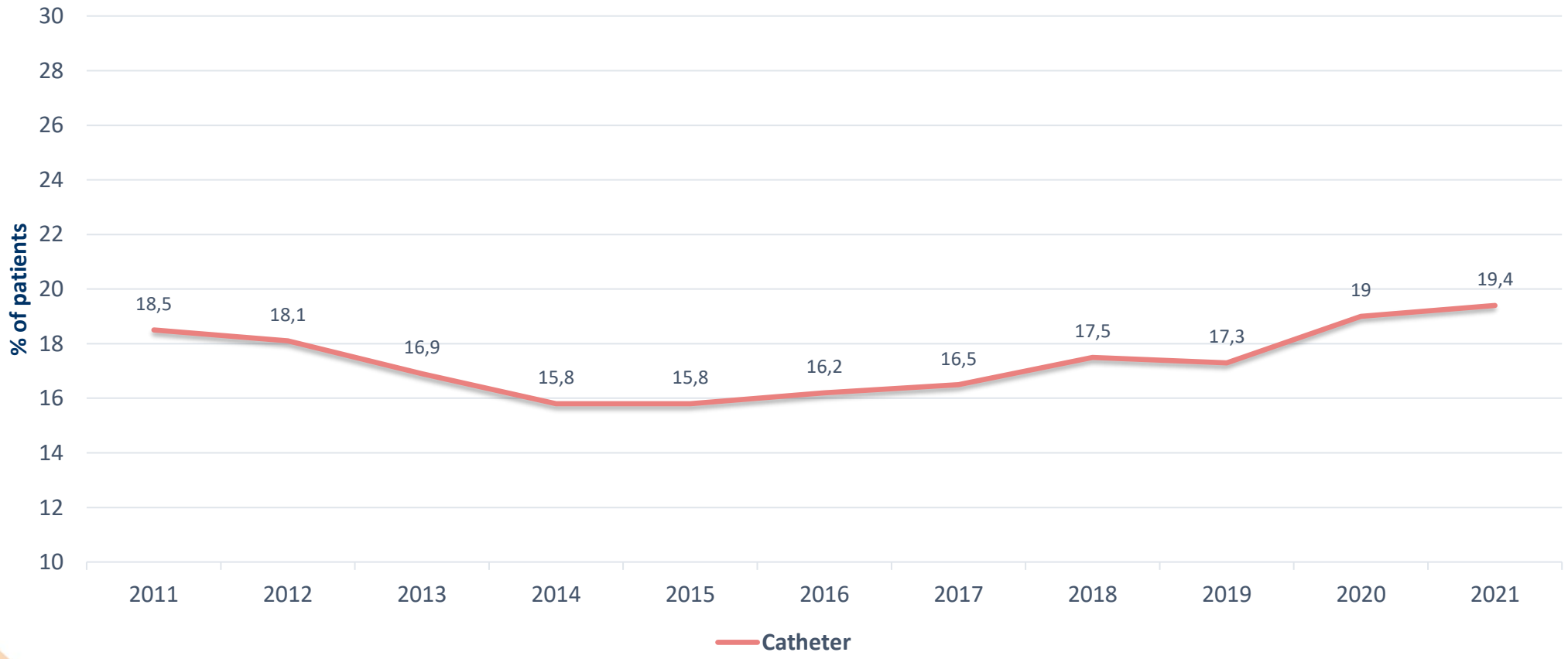
Catheter rate of prevalent patients (%)
31st December, 2011 - 2021



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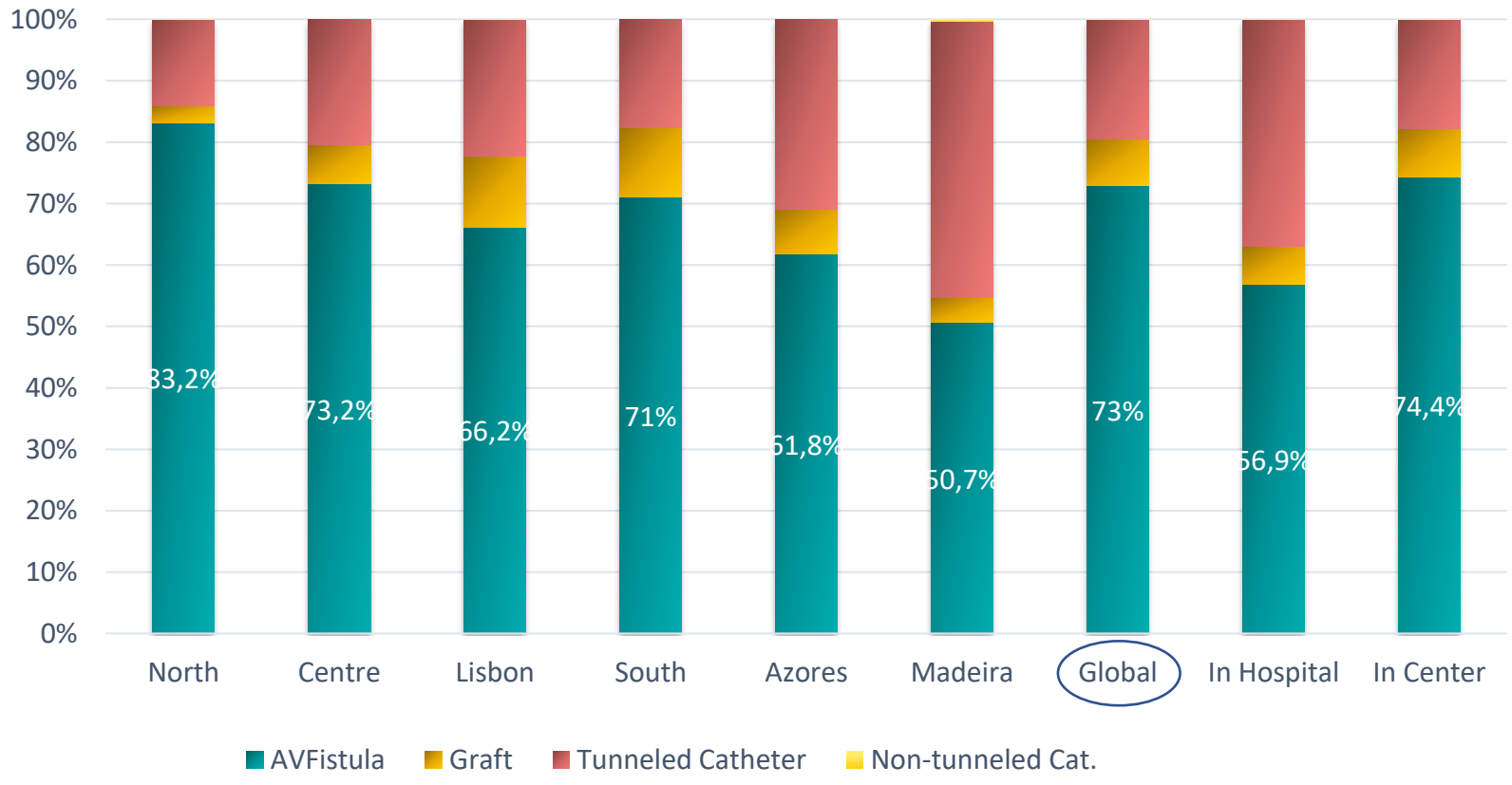
Vascular access of HD prevalent patients
by country region and facility type, 31st of December 2021



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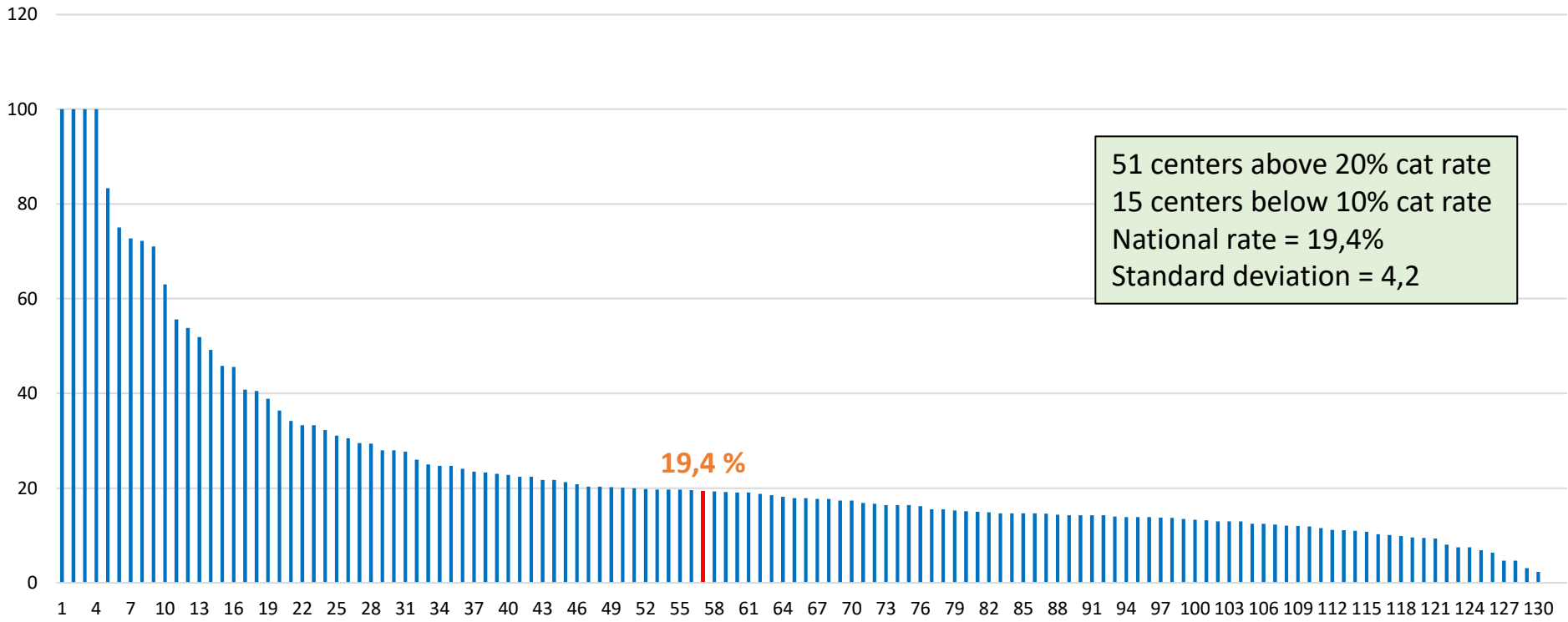
Catheter rate of prevalent patients (%)
31st December 2021



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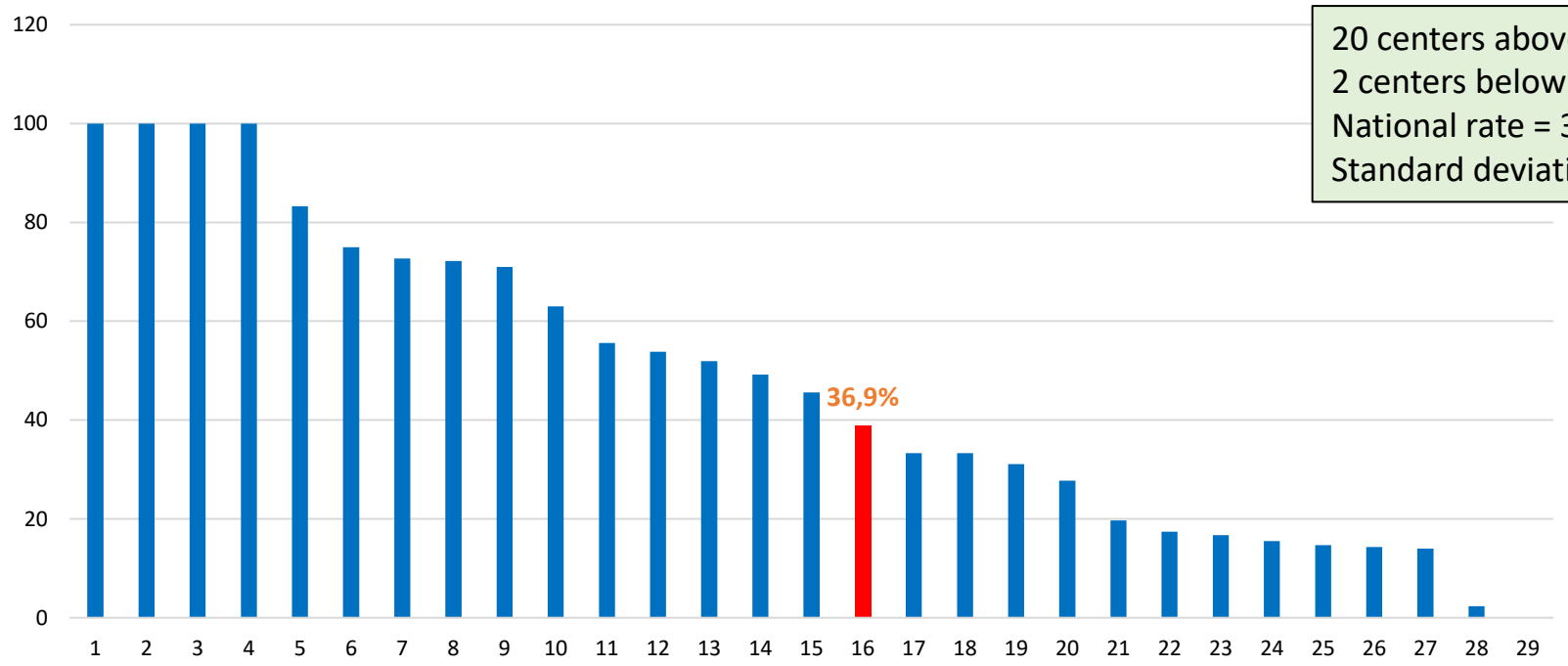
Catheter rate of prevalent patients (%)

In Hospital HD patients - 2021



20 centers above 20% cat rate
2 centers below 10% cat rate
National rate = 36,9 %
Standard deviation = 22,3

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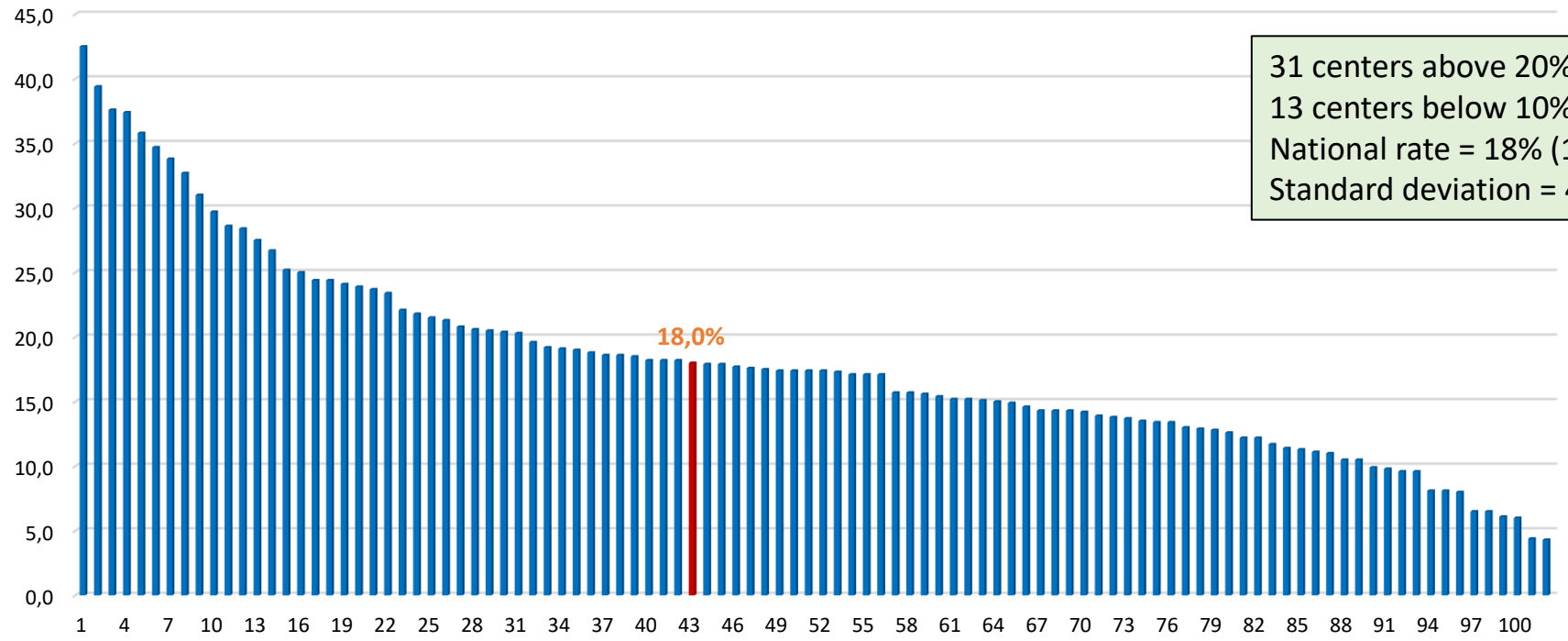
Catheter rate of prevalent patients (%)

In Center HD patients - 2021



31 centers above 20% cat rate
13 centers below 10% cat rate
National rate = 18% (17,8% 2020)
Standard deviation = 4,3

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Sociedade Portuguesa de Nefrologia

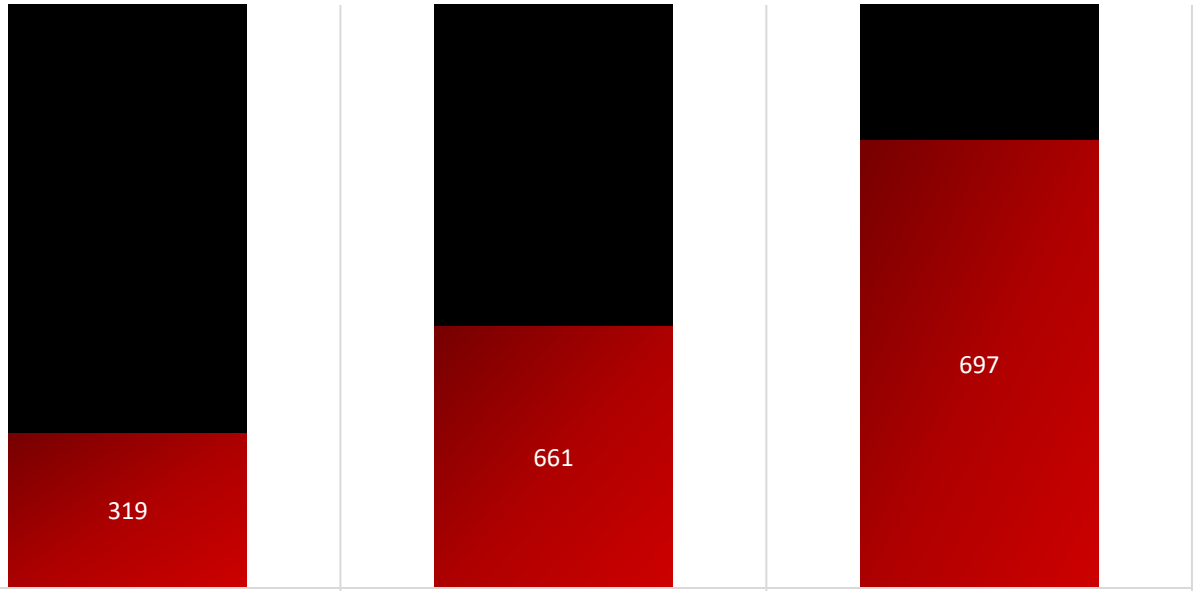
Mortality - hemodialysis

Sociedade Portuguesa de Nefrologia

Deaths in hemodialysis
by age group in 2021

* 80,9% of **1677** patients that died in 2021 were more than 65 years old and 41,5% more than 80 years

* 6,7 % of deaths occurred during the first 90 days after starting dialysis
* Mortality in the first 90 days was 4,45% (4,6% em 2020)



	< 65 years	65 - 80 years	>80 years
Prevalent	4462	5211	2928
Died	319	661	697

N: 1677

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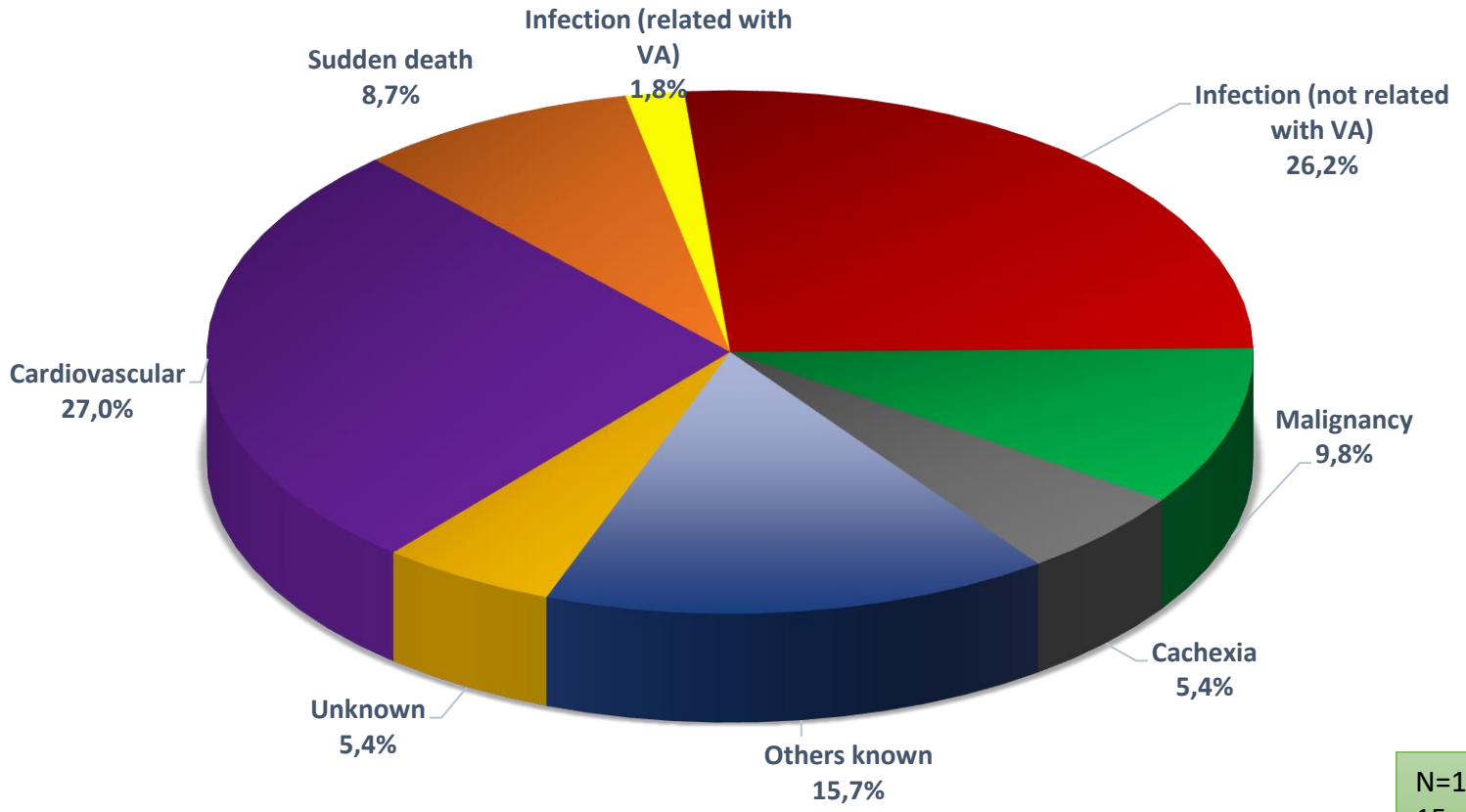
Death causes in HD patients *during 2021*



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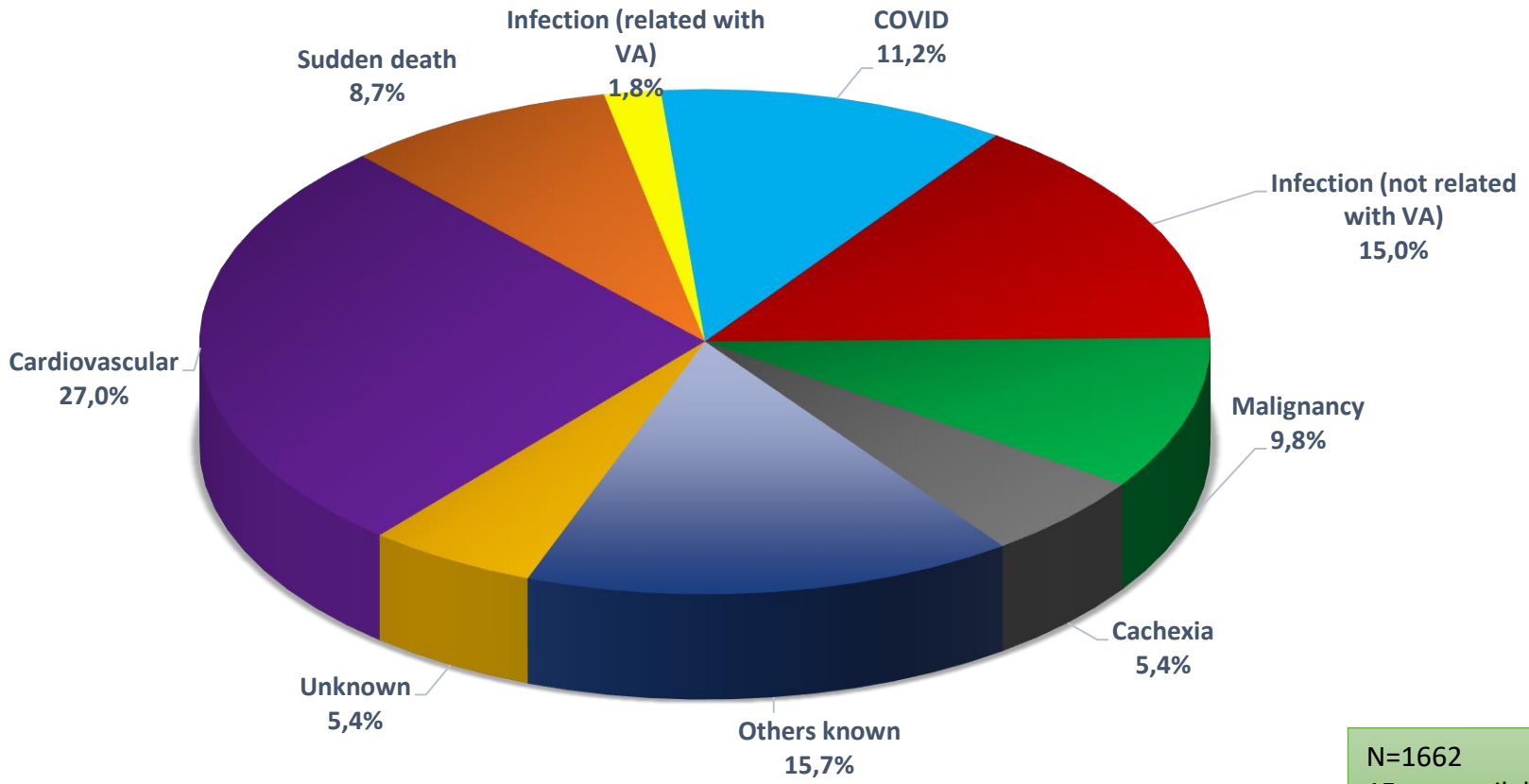
Death causes in HD patients *during 2021*



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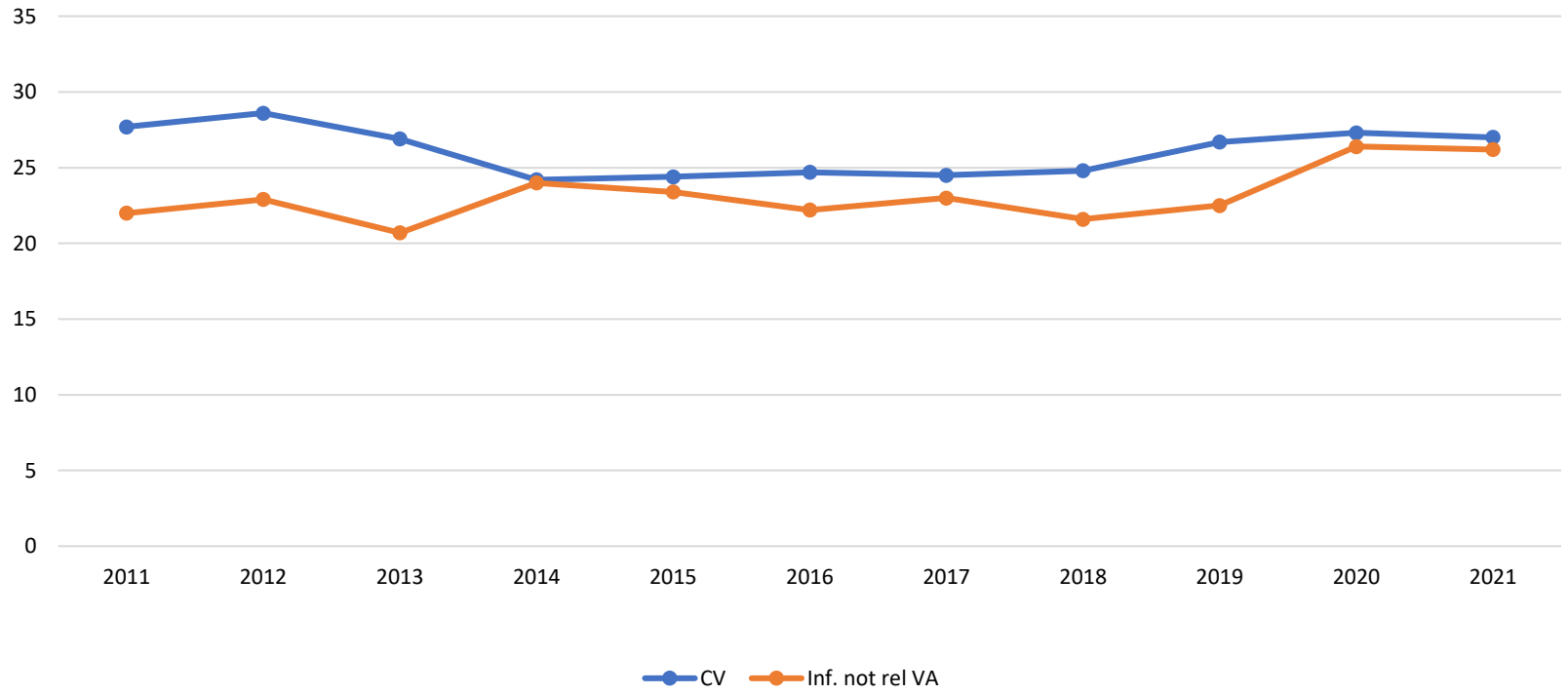
Cardiovascular and Infection deaths in hemodialysis (%)
2011 - 2021



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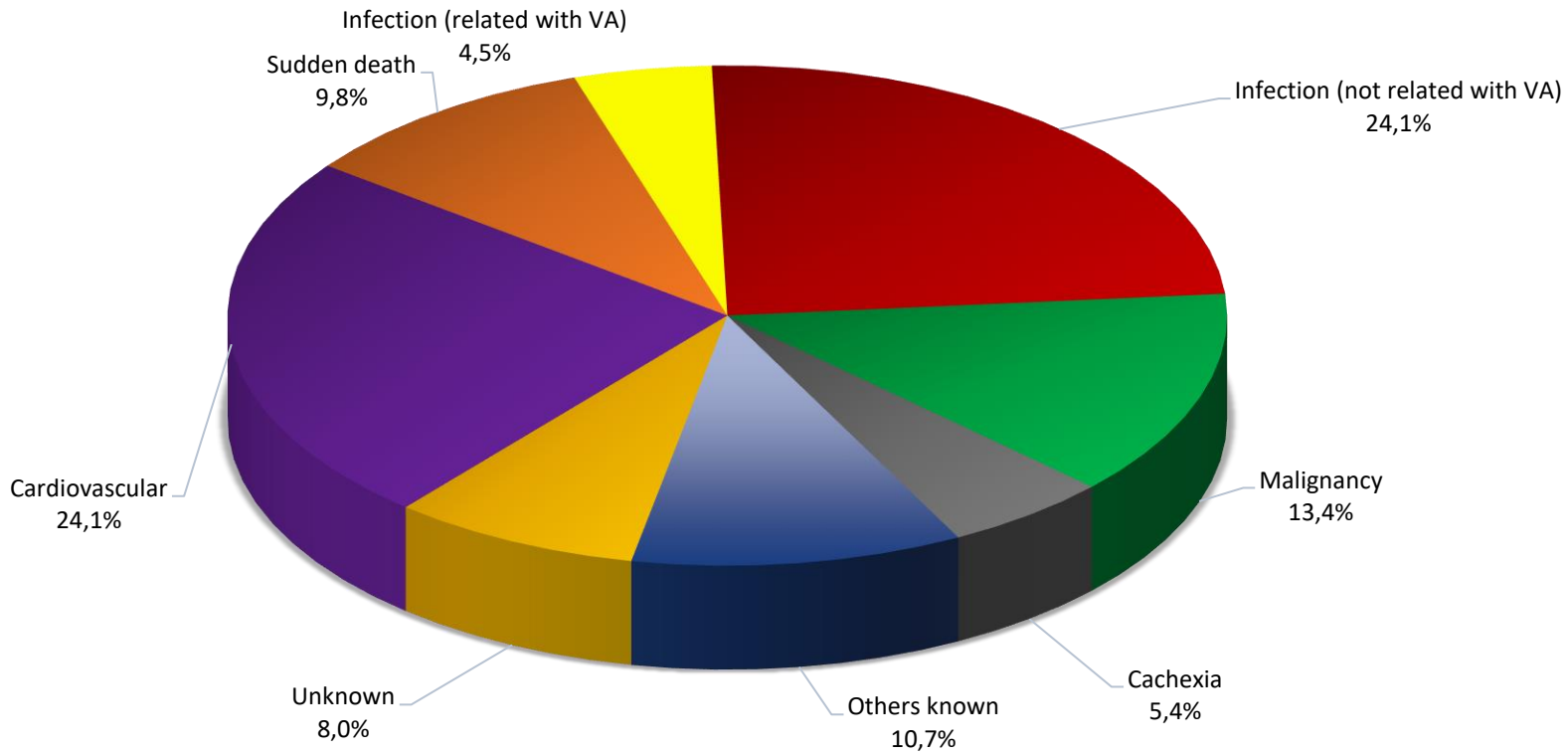
Death causes during the first 90 days of HD
2021



N=112

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HD patients movement in 2021

	IN		OUT
First treatment	2240	Deaths	1677
Transplant failure	127	Transplanted	318
PD into HD	137	HD into PD	44
		Stop treat. or recovery	79
		Paliative Care	153
		?	90

GROSS MORTALITY RATE = 13,4%

(90d mortality = 5%)

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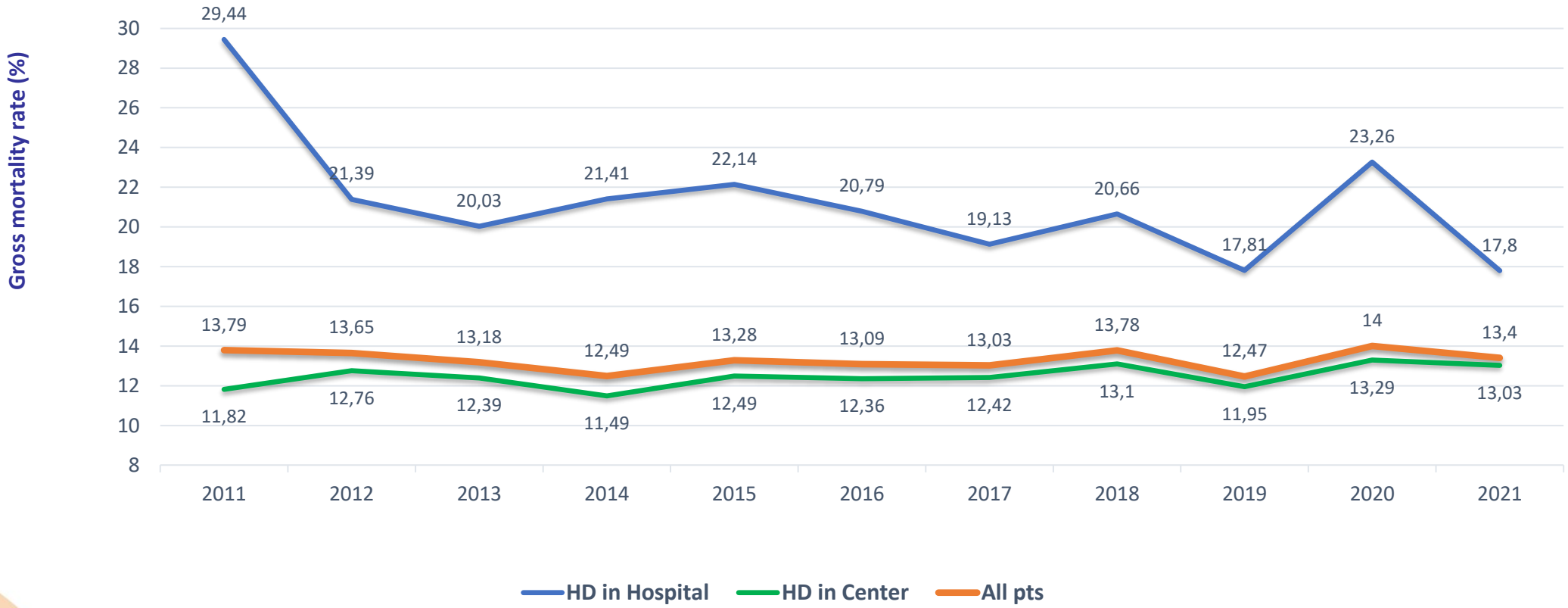
Mortality rates – hemodialysis

2021

National gross mortality rate = **13,4%** (90 day mortality = 4,45%)	
Hemodialysis ***in hospital***	**17,8%** (90 day mortality = 8,2%)
Hemodialysis ***in center***	**13,03%** (90 day mortality = 3,68%)

Gross mortality rate in hemodialysis

2011 - 2021



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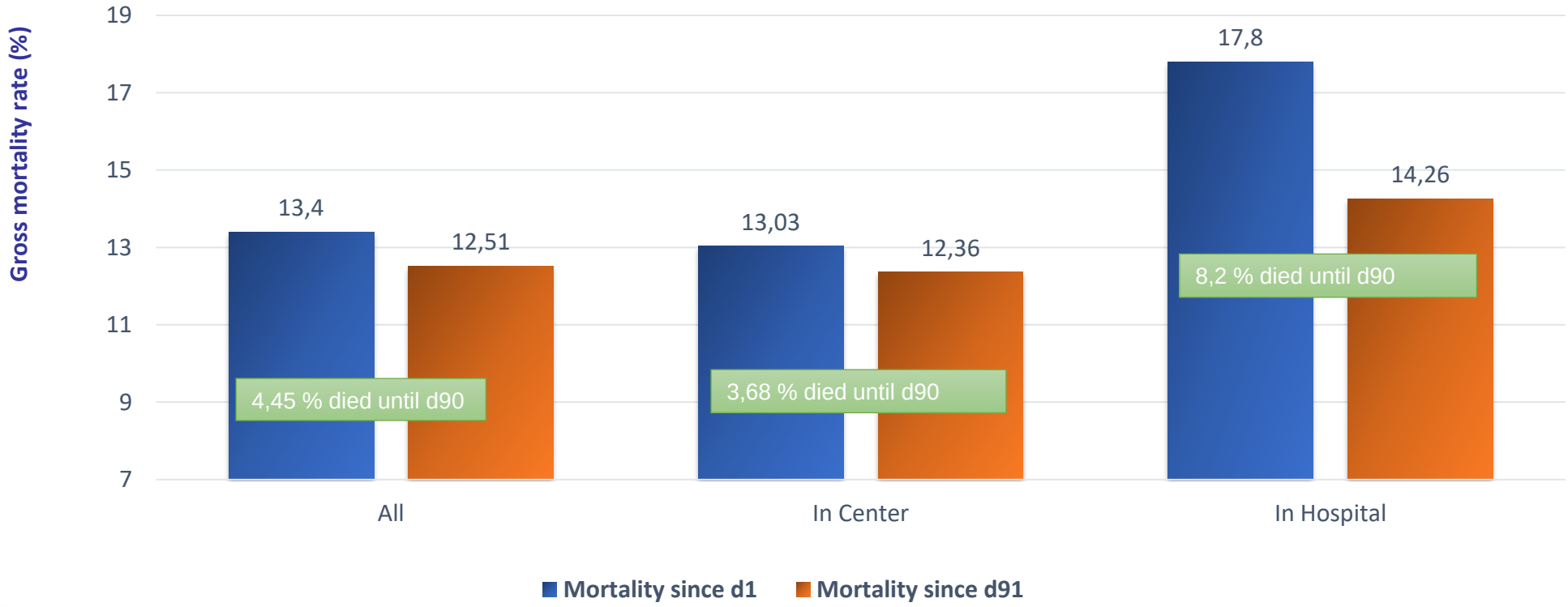
Gross mortality rate

Impact of deaths until day 90, 2021



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Gross mortality rates – hemodialysis

since d1 and d91 by country region, 2021

	Mean Age	Mortality since d1	Mortality since d91	Deaths until d90 (% of incident)
Global	**68,3**	**13,4%**	**12,51%**	**4,45%**
North	68,73	11,88%	11,1%	3,86%
Center	**70,15**	14,09%	12,78%	5,68%
South	68,49	15,38%	14,26%	5,41%
Lisbon	67,05	13,92%	13,25%	3,69%
Azores	65,2	13,60%	12,59%	4,17%
Madeira	64,61	6,32%	6,32%	0%

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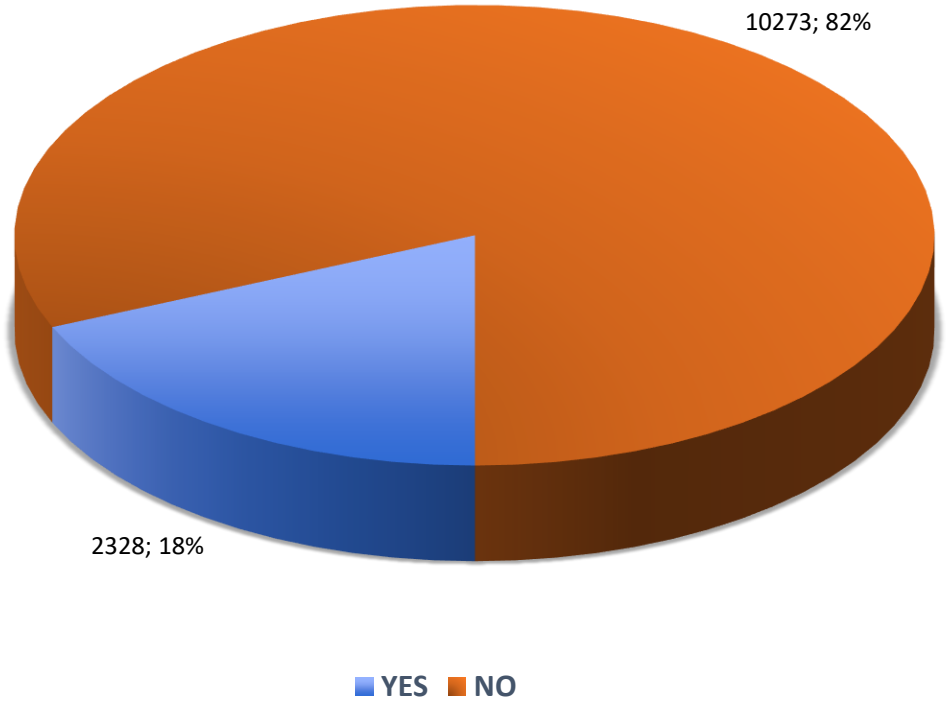
Waiting list for renal transplantation

Hemodialysis patients, 2021



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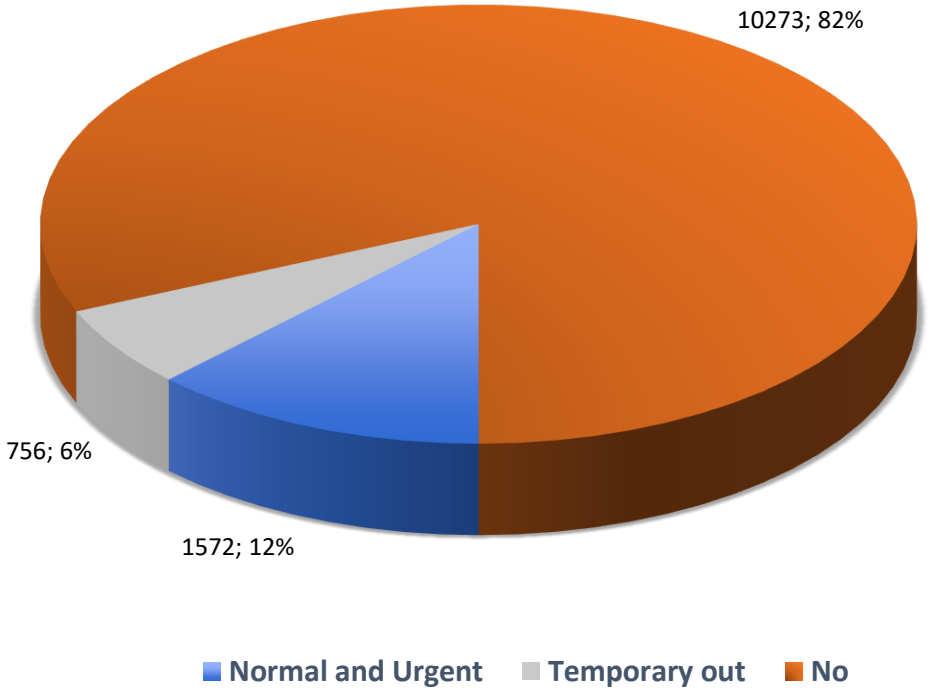
Waiting list for renal transplantation

HD patients, Active and temporary contraindication - 2021

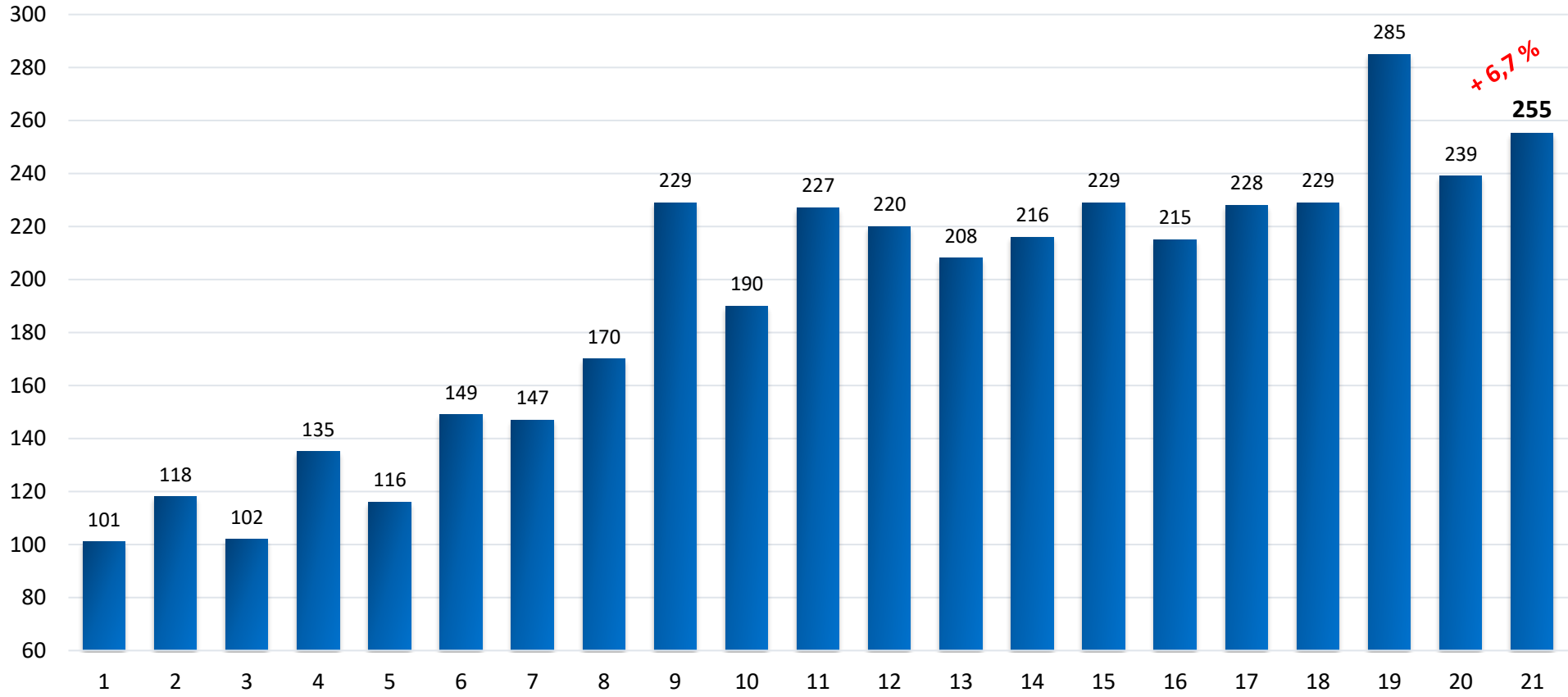


Sociedade Portuguesa de Nefrologia

PERITONEAL DIALYSIS

Sociedade Portuguesa de Nefrologia

New patients starting peritoneal dialysis
2001 - 2021



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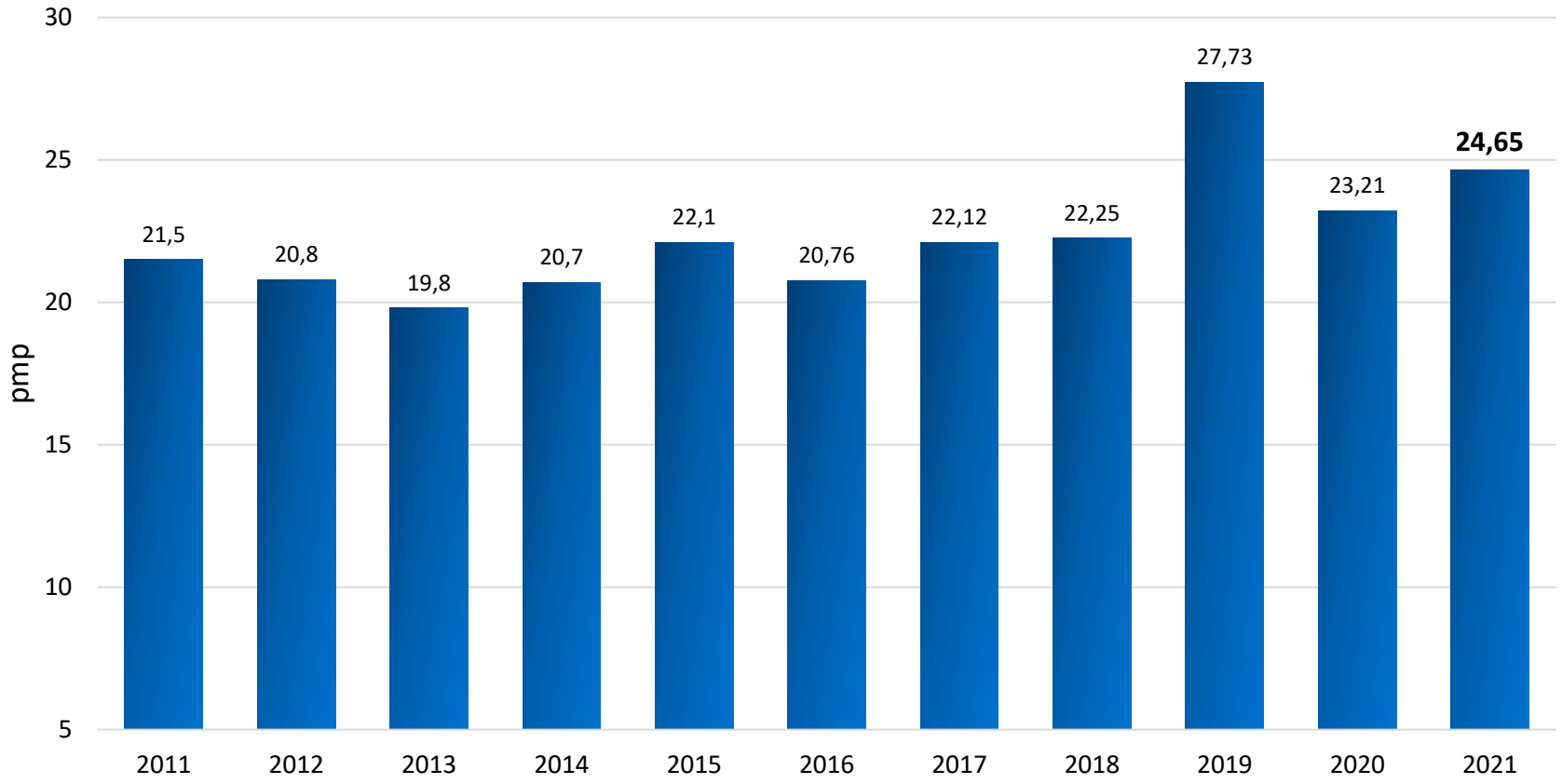
Incident patients accepted for peritoneal dialysis
per million population 2011 - 2021



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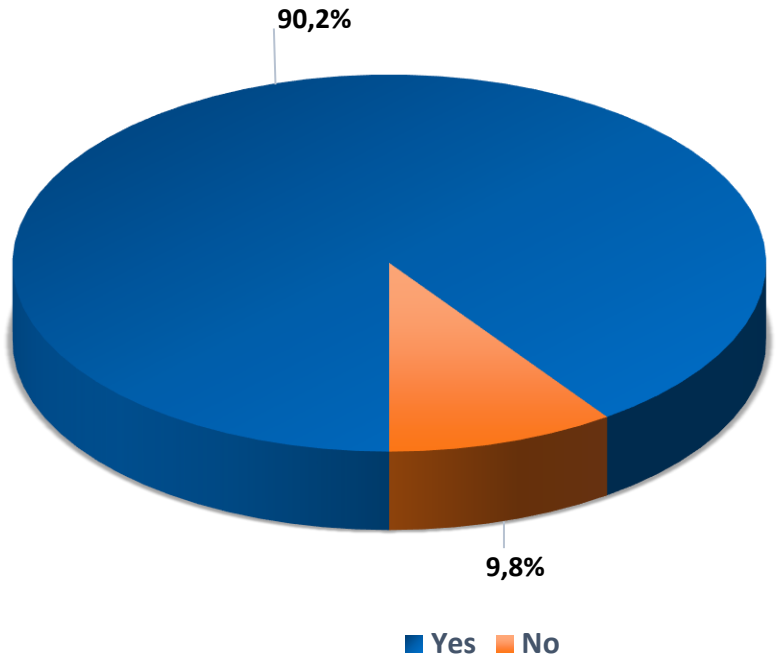
Previous follow-up by nephrology (> 3 months)

PD patients, *31st of December 2021*



N = 255

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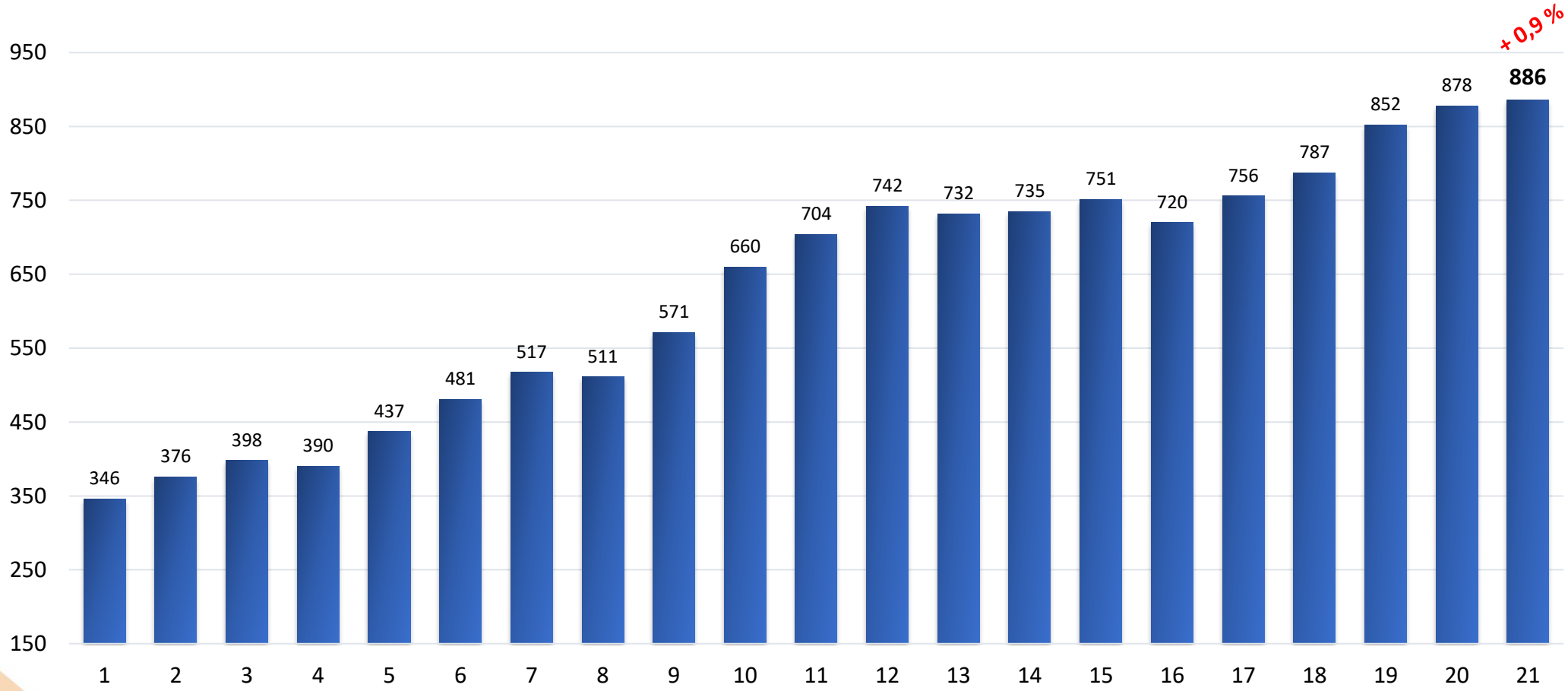
Patients treated by peritoneal dialysis

Count at 31st of December each year, 2001 – 2021



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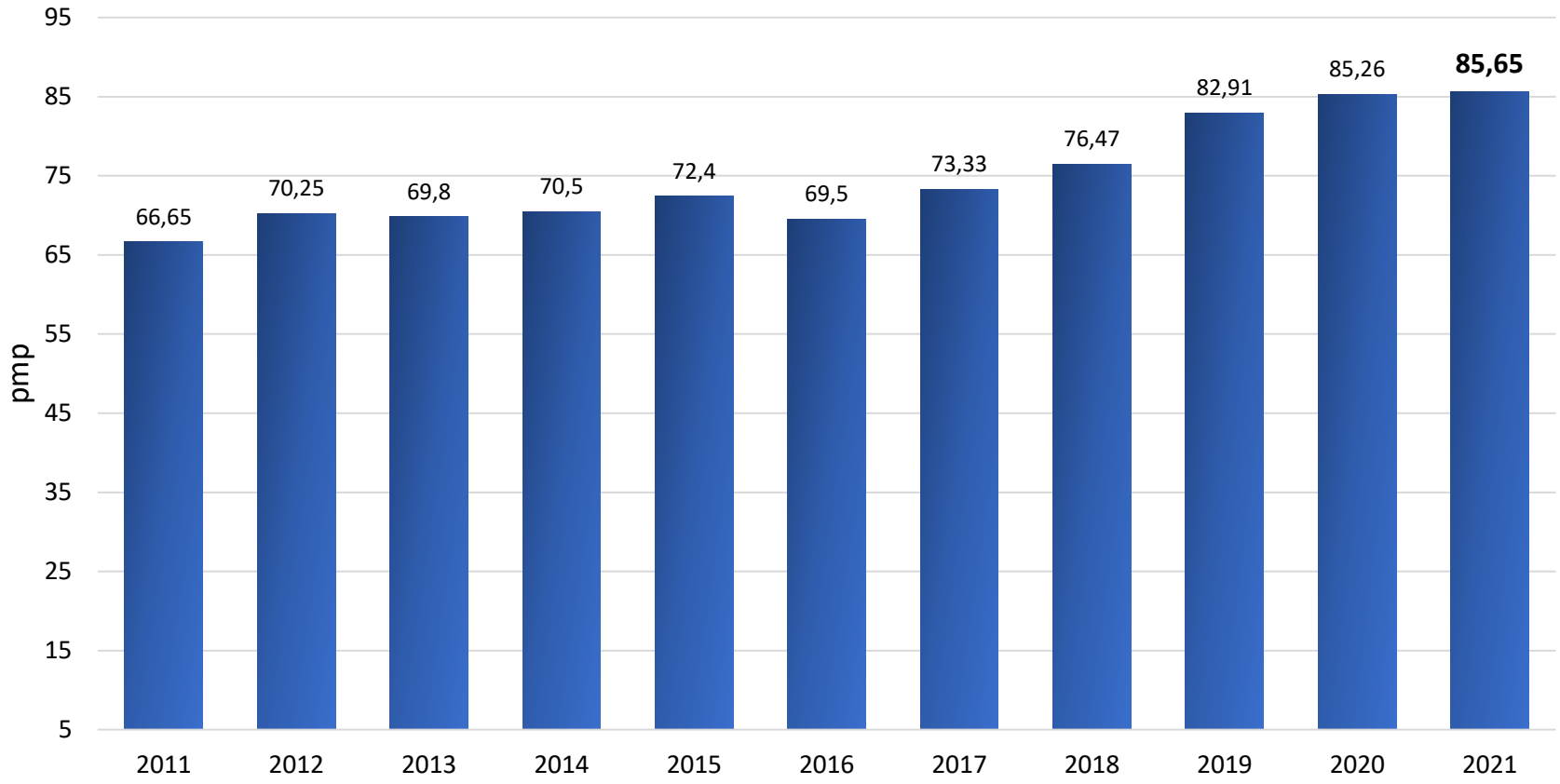
Prevalent patients treated by peritoneal dialysis
per million population 2011 - 2021



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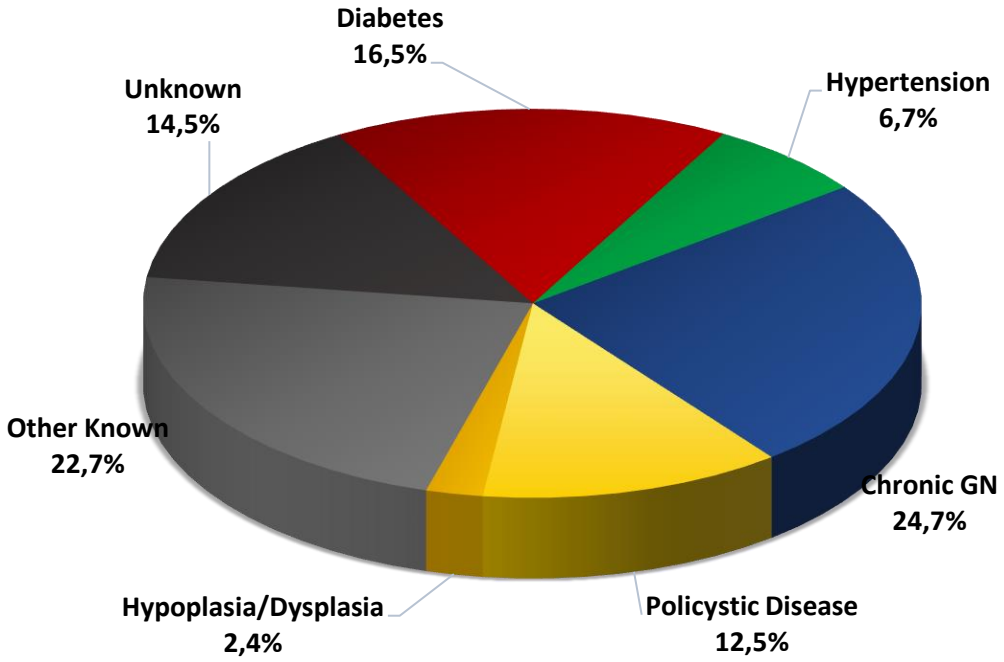
Primary renal disease of patients accepted for peritoneal dialysis *during 2021*



N = 255

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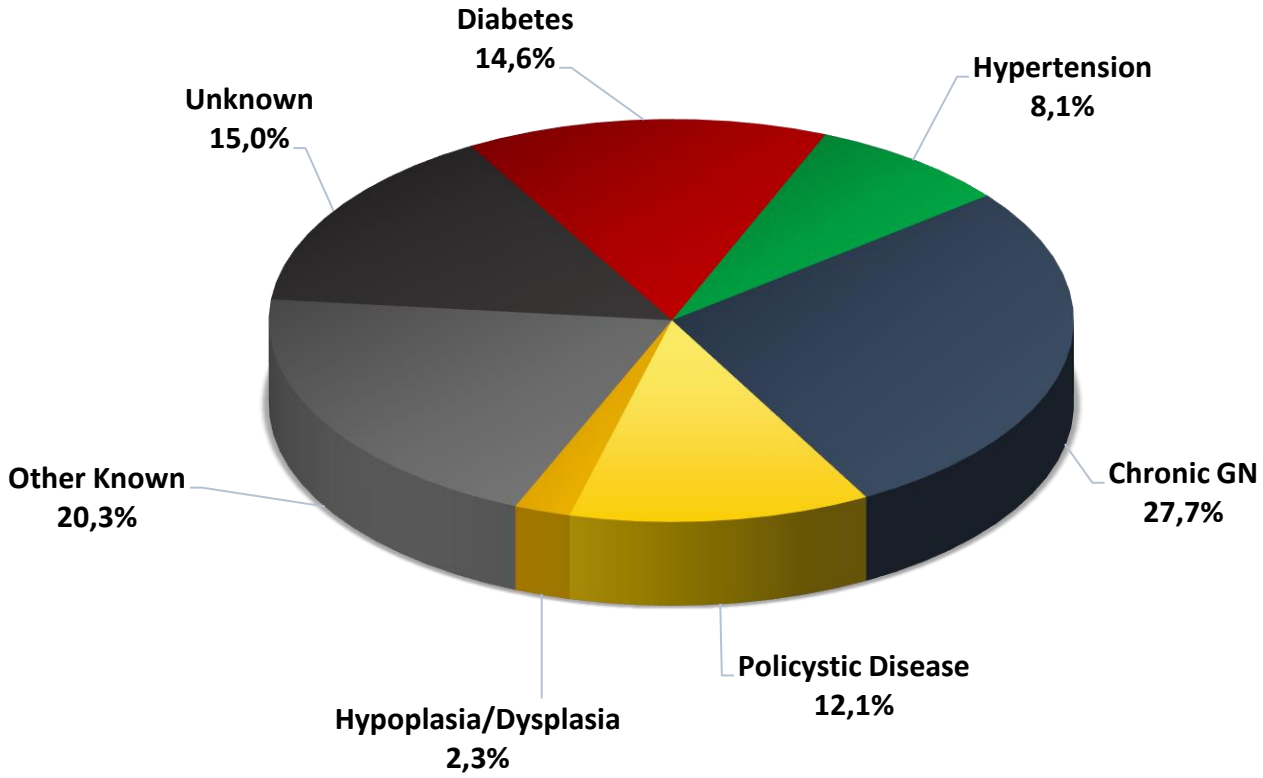
Primary renal disease of prevalent peritoneal dialysis patients
31st December 2021

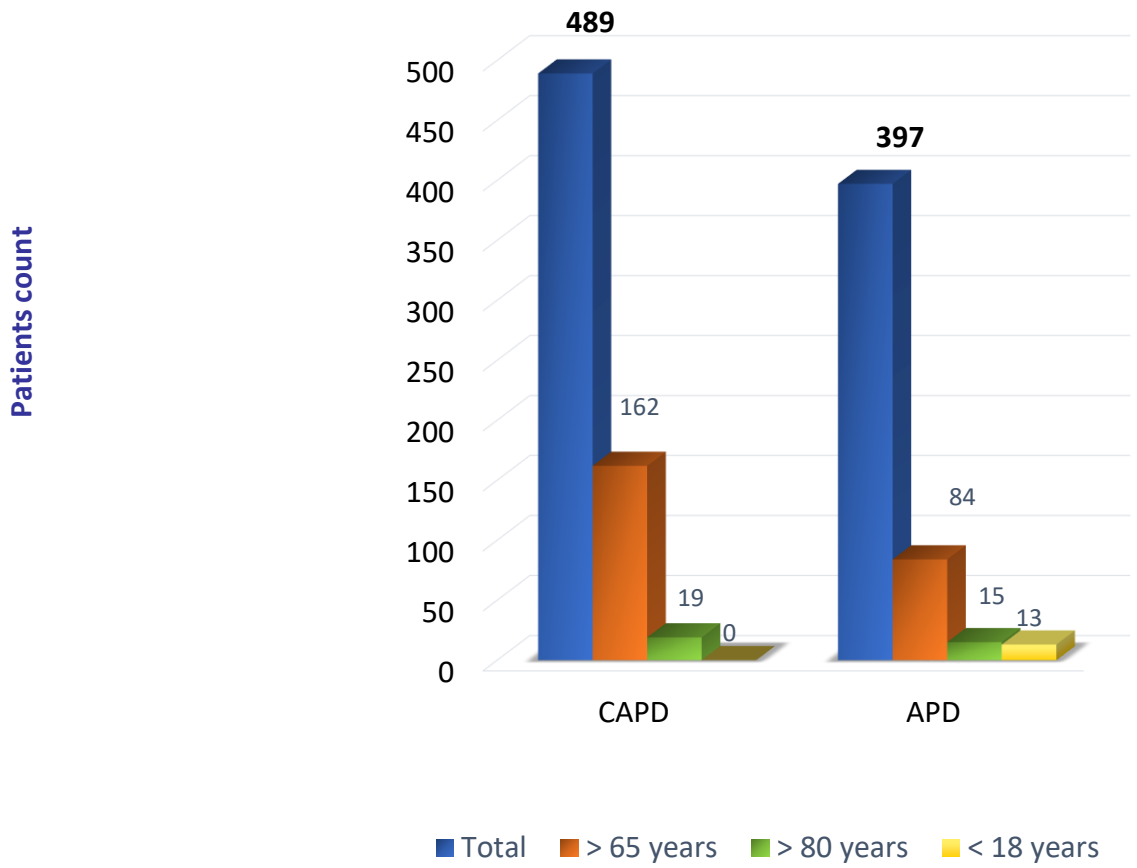


N = 886

Sociedade Portuguesa de Nefrologia

Patients treated by peritoneal dialysis

Manual vs automated, 31st of December 2021



N = 886
APD:44,8%
Age>65 years:27,7%;
Age>80years:3,8%

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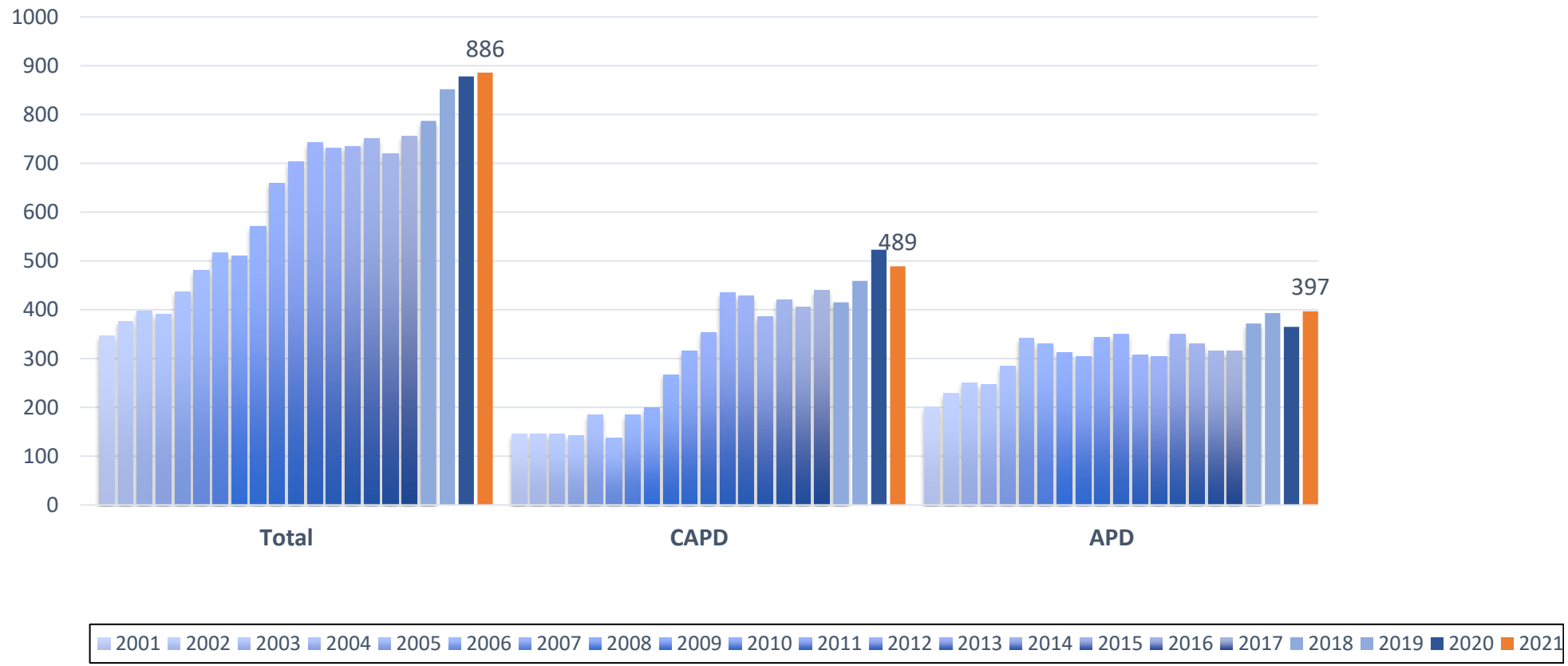
Patients treated by peritoneal dialysis

Manual vs automated, 31st December 2001 - 2021



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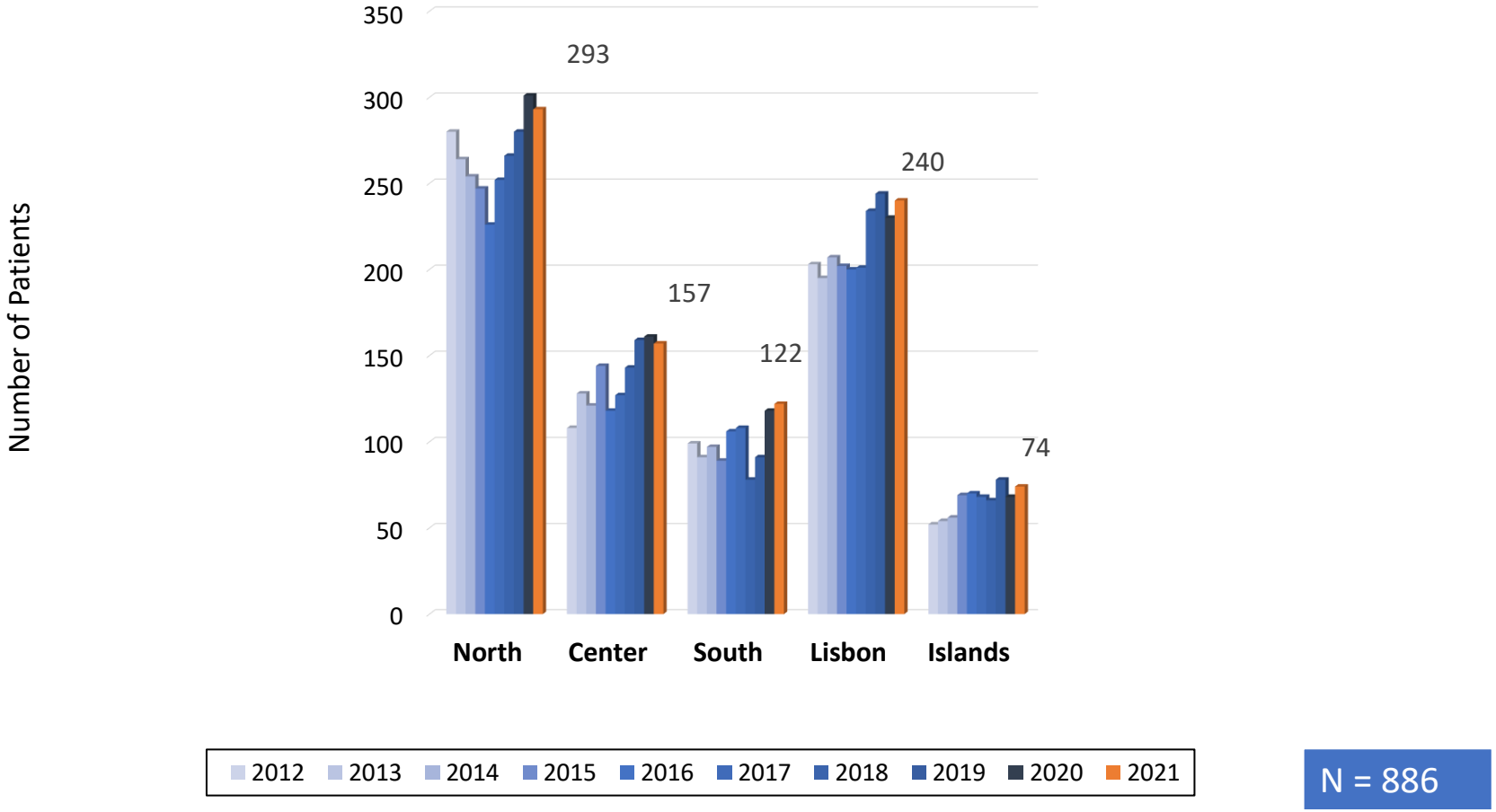
Patients treated by peritoneal dialysis
by region, 31st of December 2012 to 2021



N = 886

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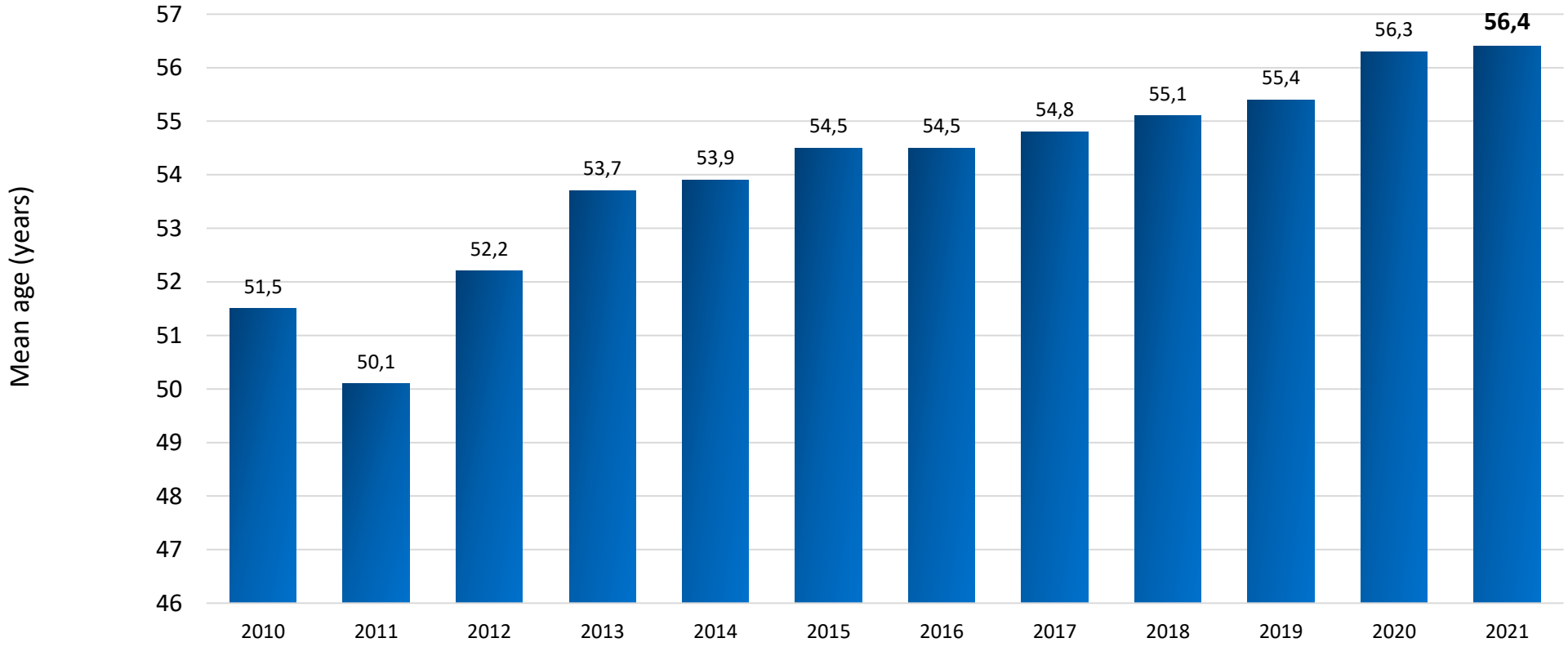
Mean Age of patients treated by peritoneal dialysis
31st of December 2011 – 2021



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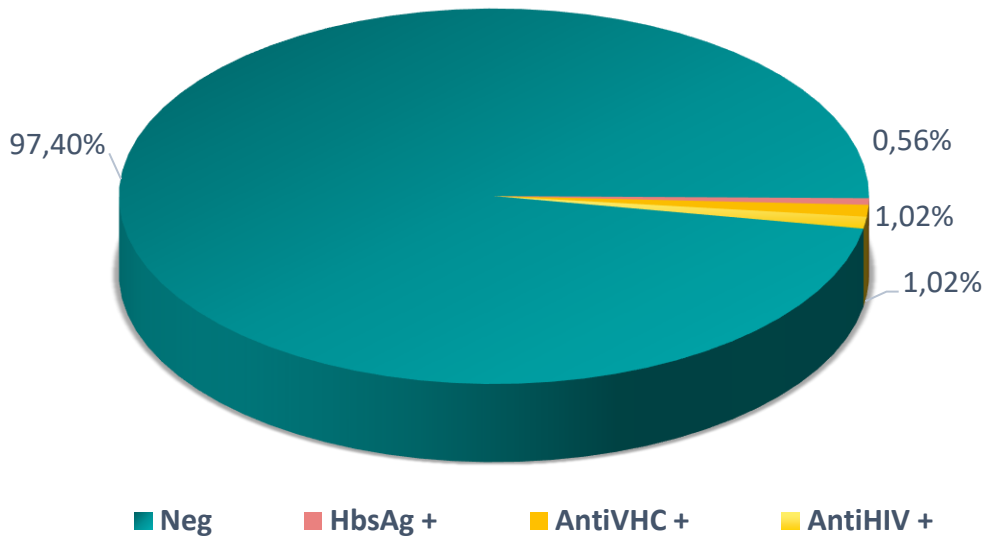
Viral status in PD prevalent patients
31st December 2021



N = 886

Sociedade Portuguesa de Nefrologia

PD patients movement in 2021

	IN		OUT
New patients	255	Death	49
KTr failure	25	Transplant	109
HD to PD	44	PD to HD	137
		Renal Recovery	15
		Suspension Paliative Care	4 2
Mortality rate = 4,86 % (90 d mortality = 1,2%)			

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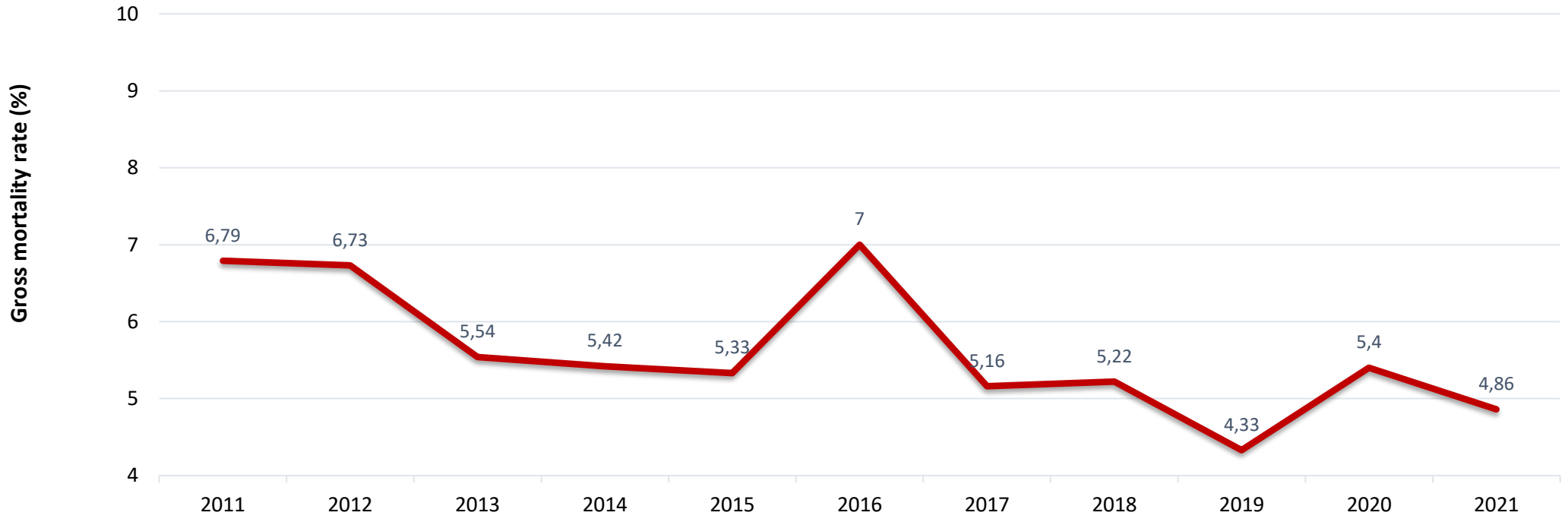
Gross mortality rate in peritoneal dialysis

2011 - 2021



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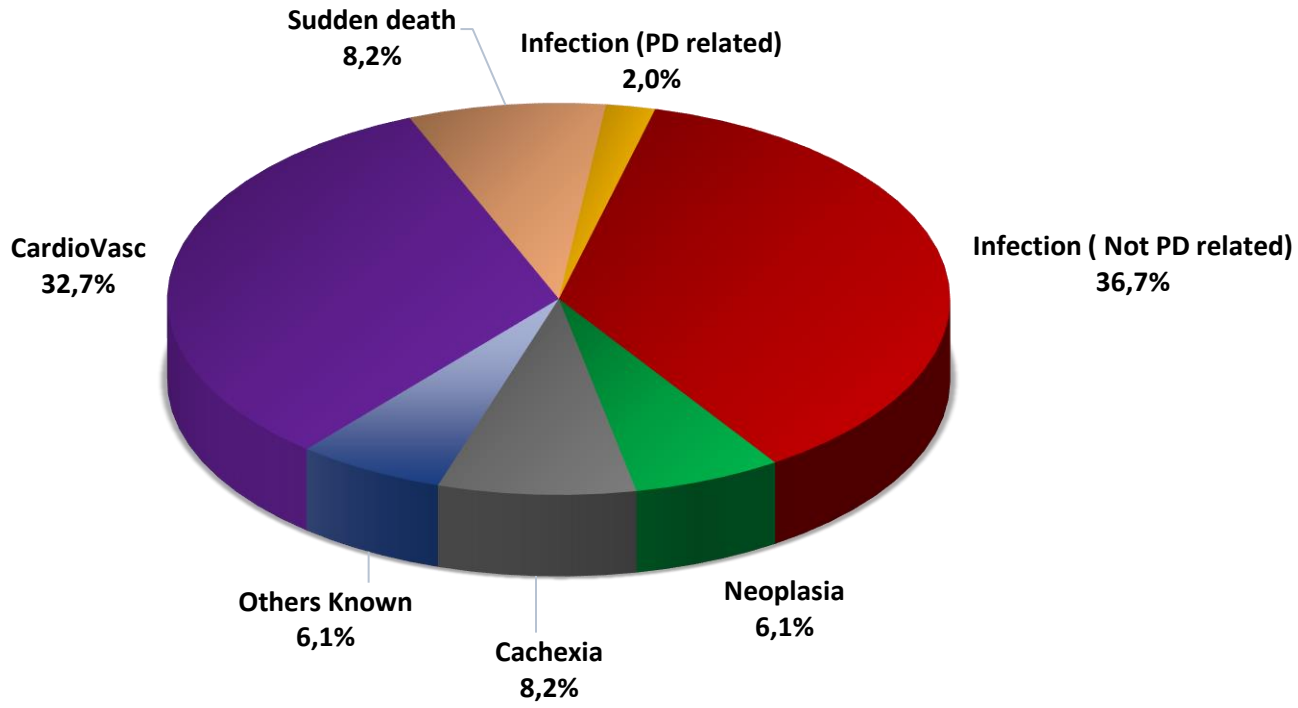
Death causes in PD patients
2021

N = 49
4 patients died until day 90; 1,2% of incidente patients and 8% of all deaths



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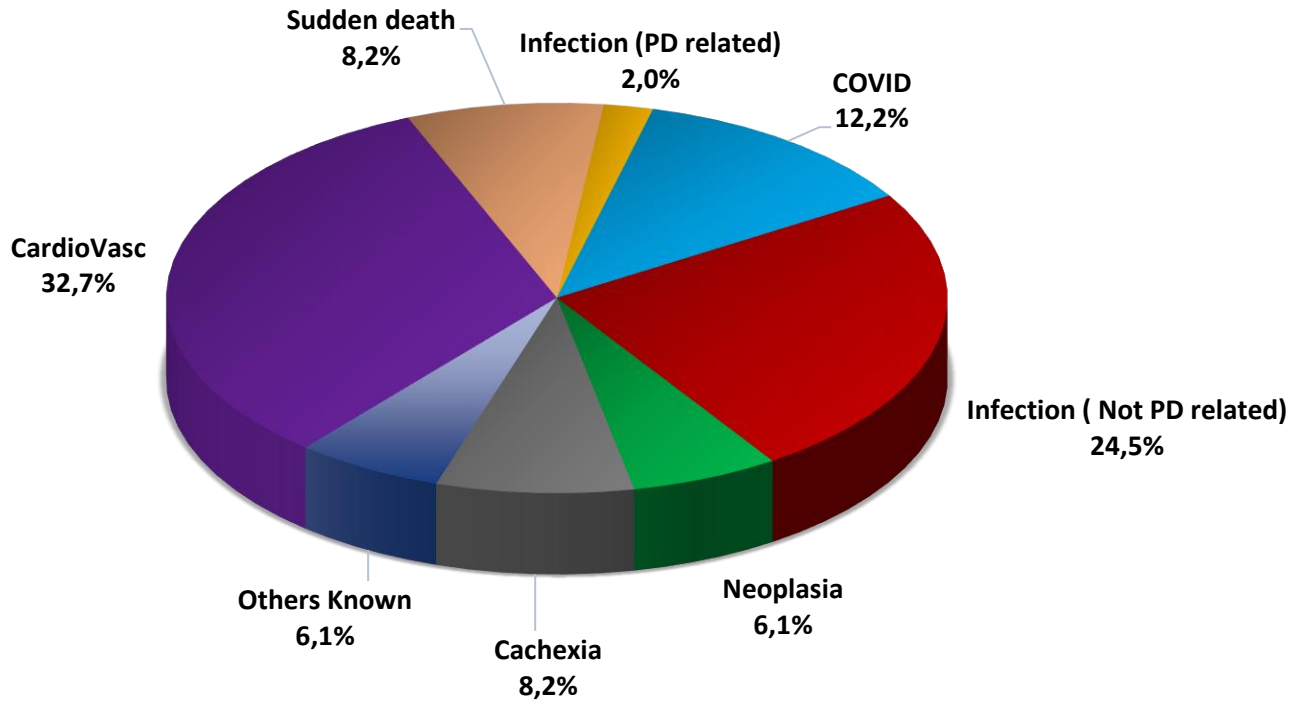
Sociedade Portuguesa de Nefrologia

Death causes in PD patients
2021

N = 49
4 patients died until day 90; 1,2% of incidente patients and 8% of all deaths



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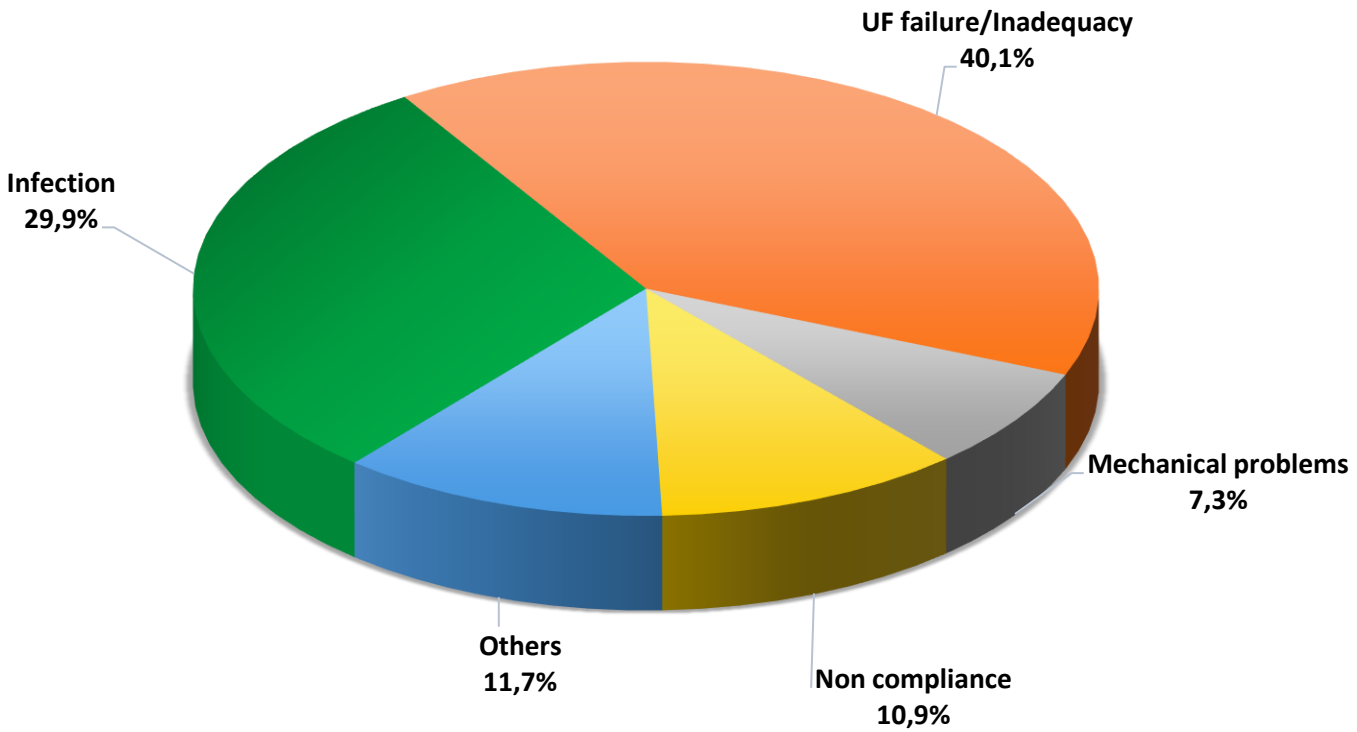
Reasons for PD withdraw
2021



N = 137

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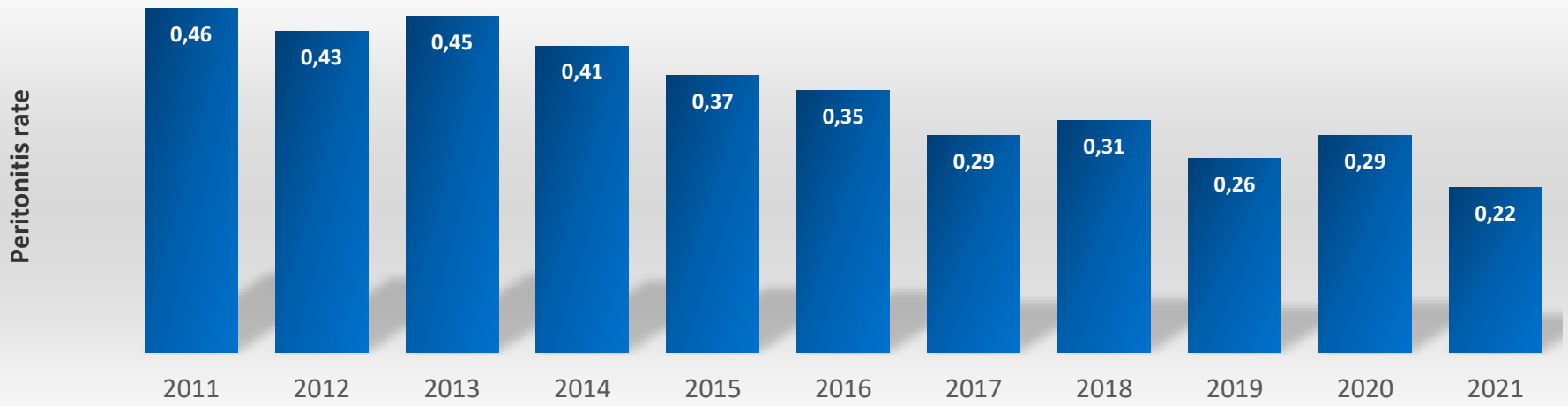
Peritonitis episodes
2021

N = 221

0,22 episodes / patients-2021



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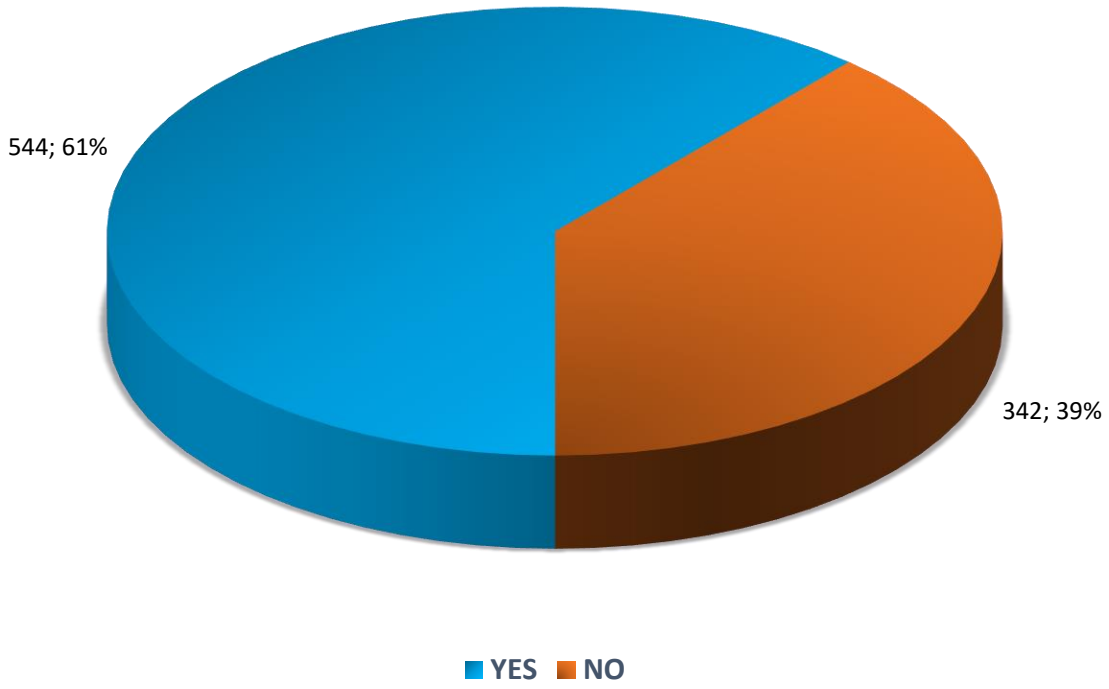
PD patients in waiting list for renal transplantation
2021



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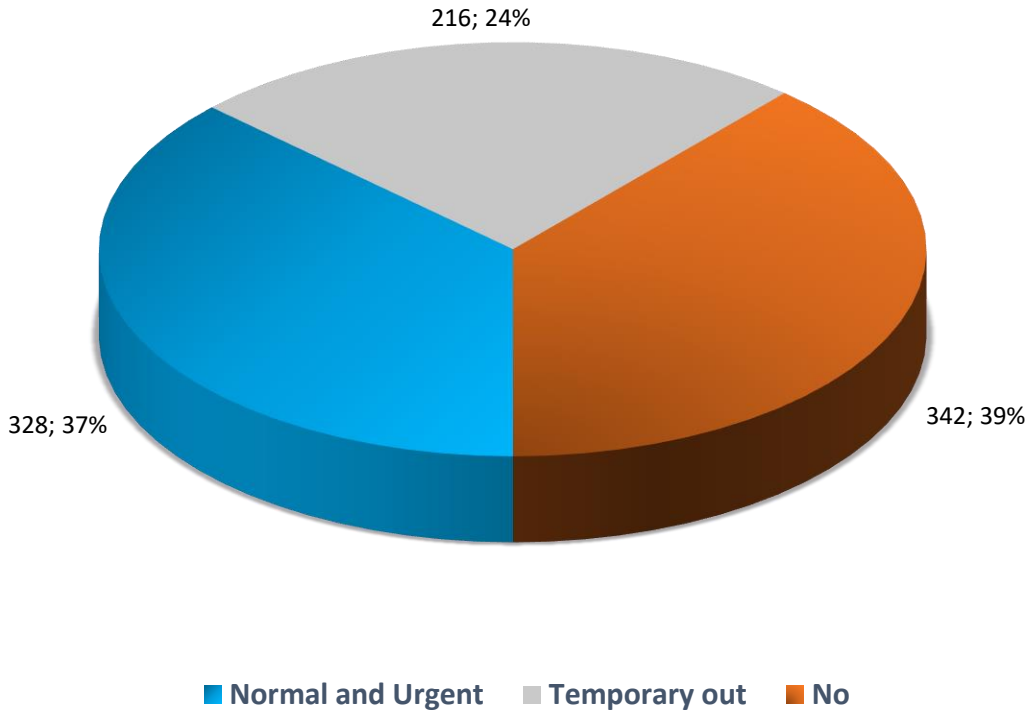
PD patients in waiting list for renal transplantation
Active ant temporary contraindication for transplantation



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RENAL TRANSPLANTATION

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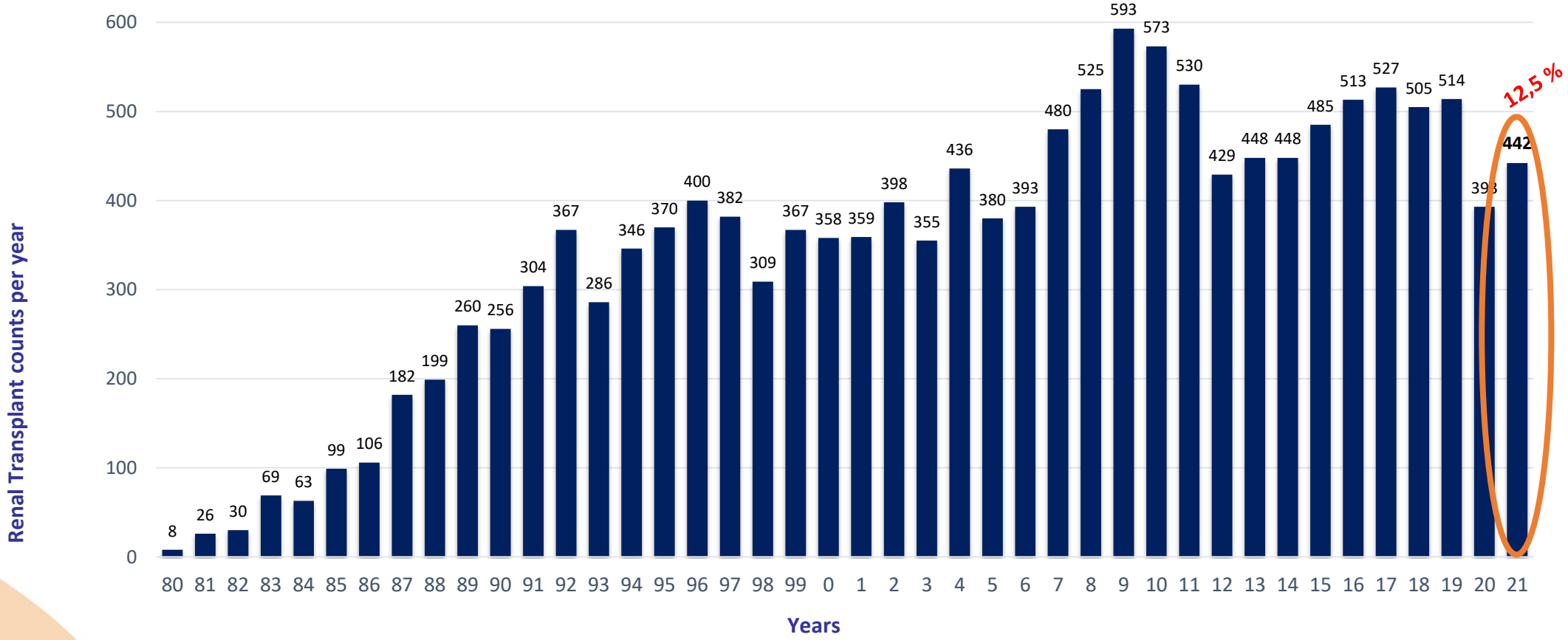
Renal Transplants performed 1980-2021

Total = 14505



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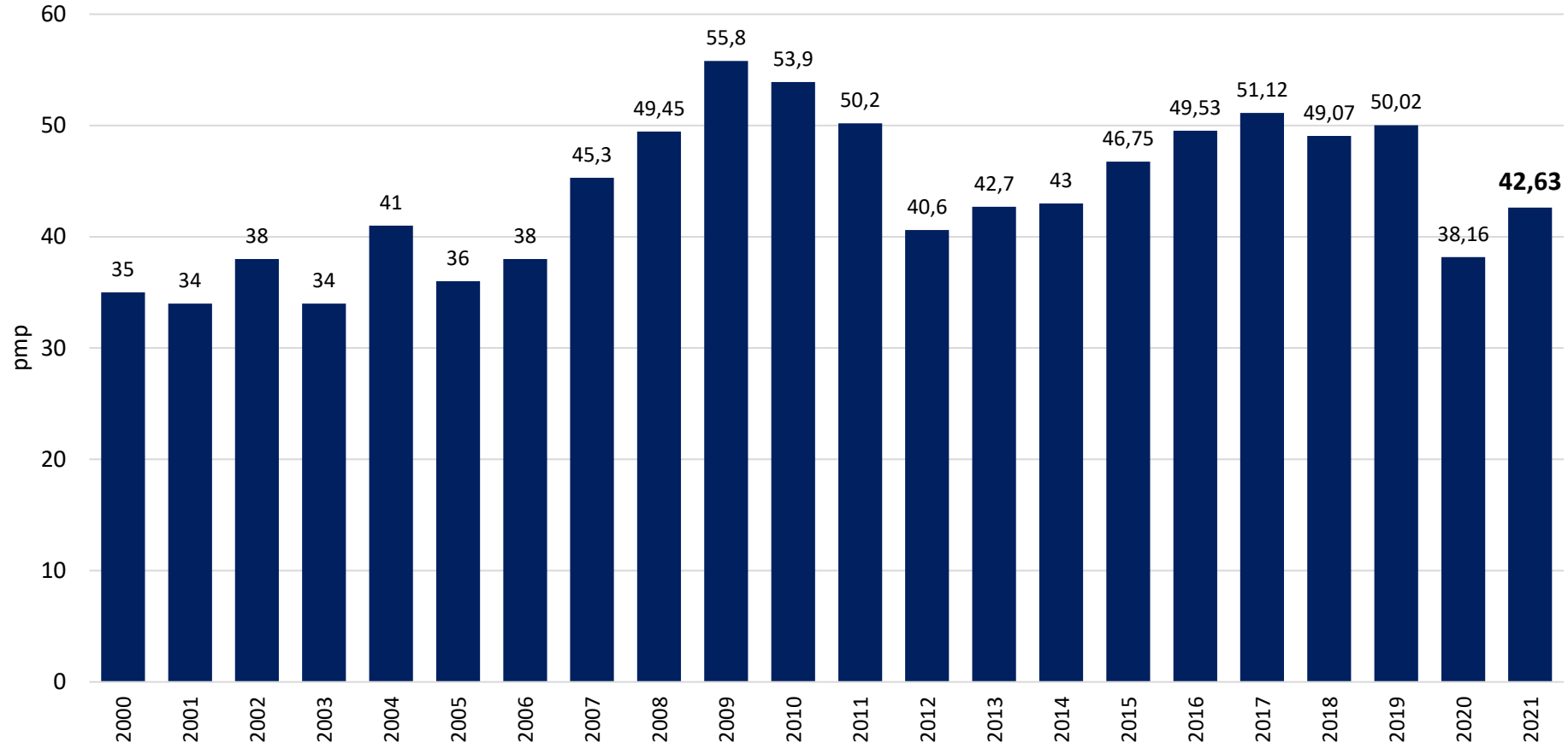
Renal Transplants Performed
per million population, 2000 - 2021



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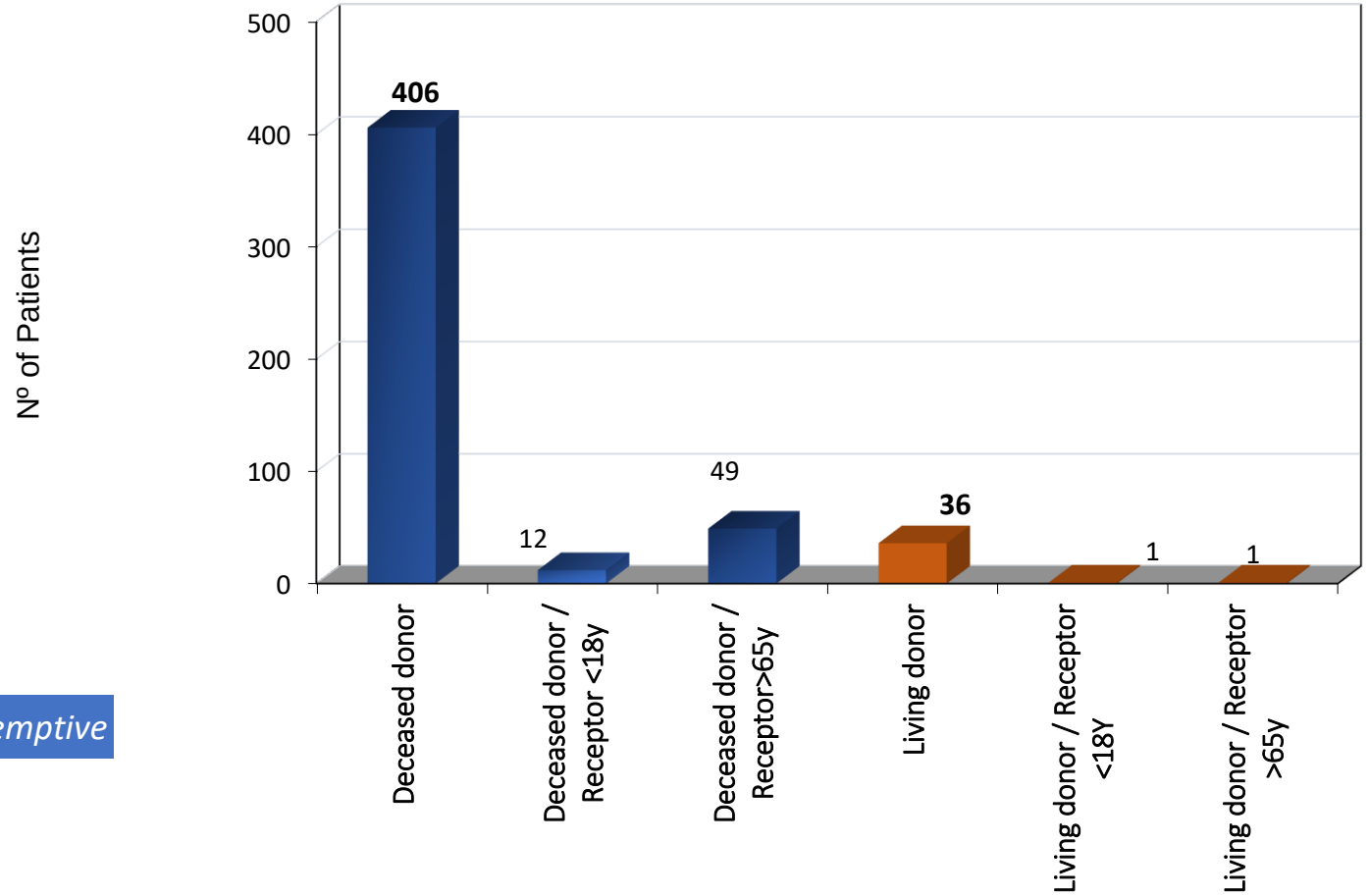
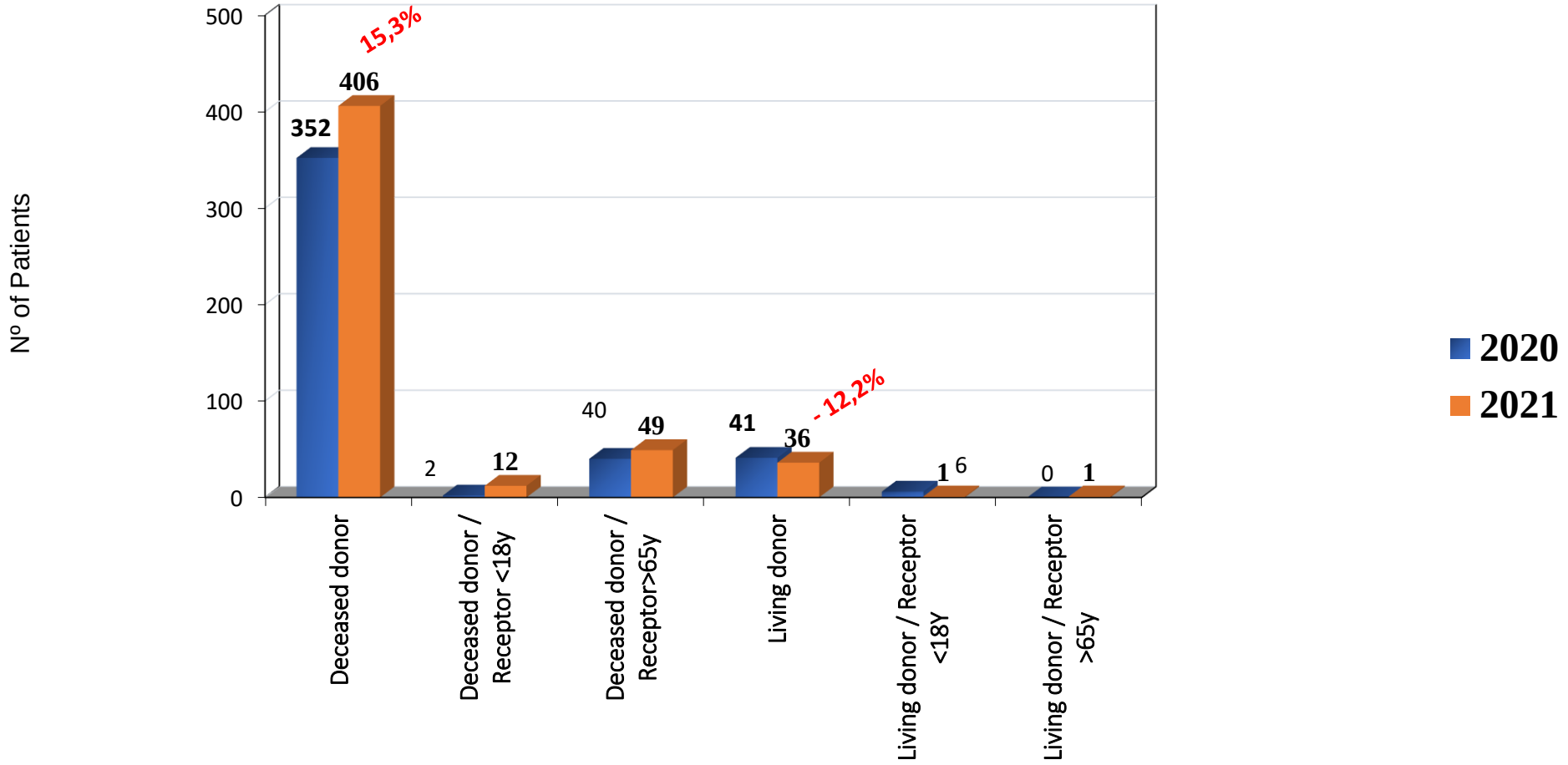
Renal transplantation activity characterization 2021



15 pre-emptive

Renal transplantation activity characterization 2021



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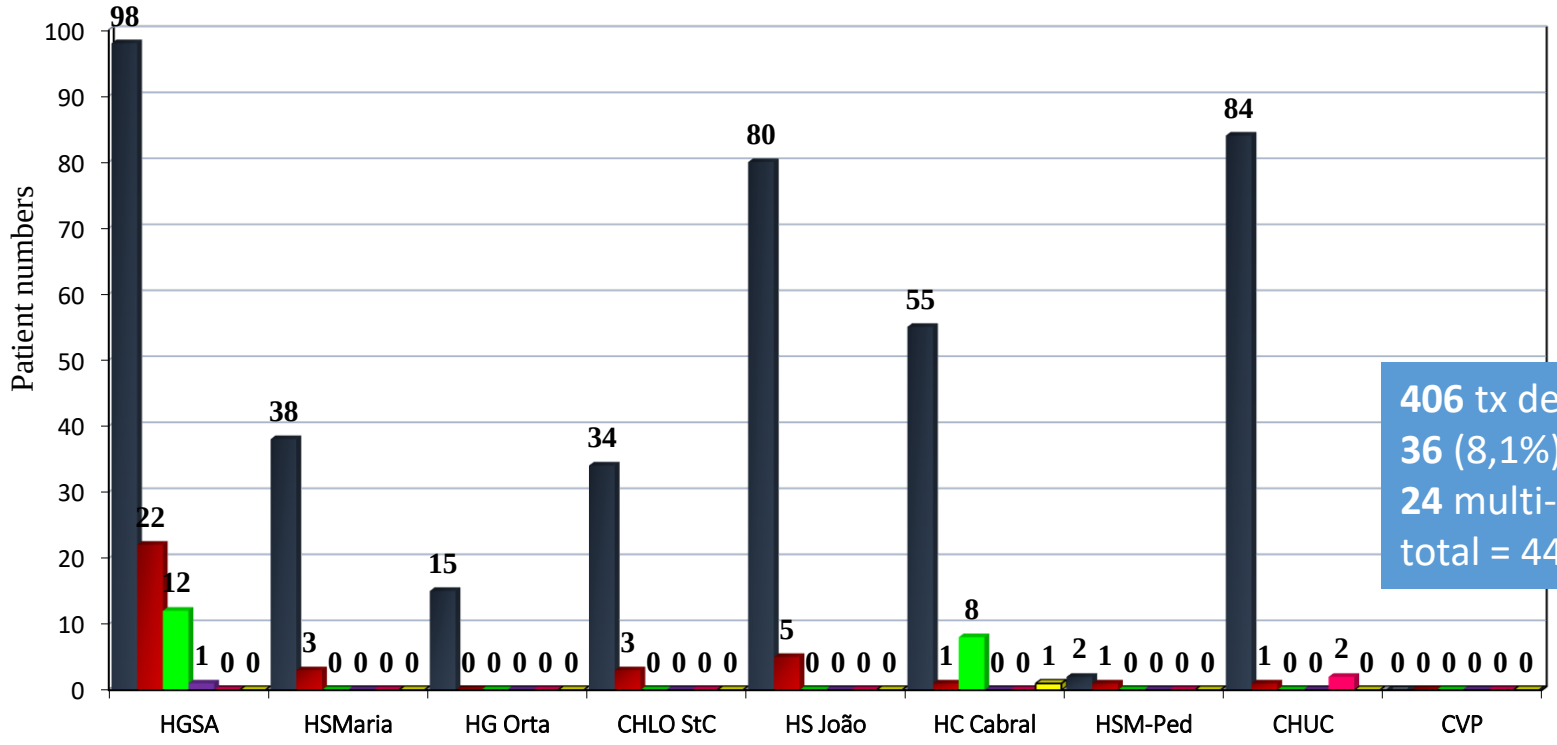
Portuguese Transplant Centers Activity
2021



406 tx deceased donor
36 (8,1%) live donor
24 multi-organ transplants
total = 442

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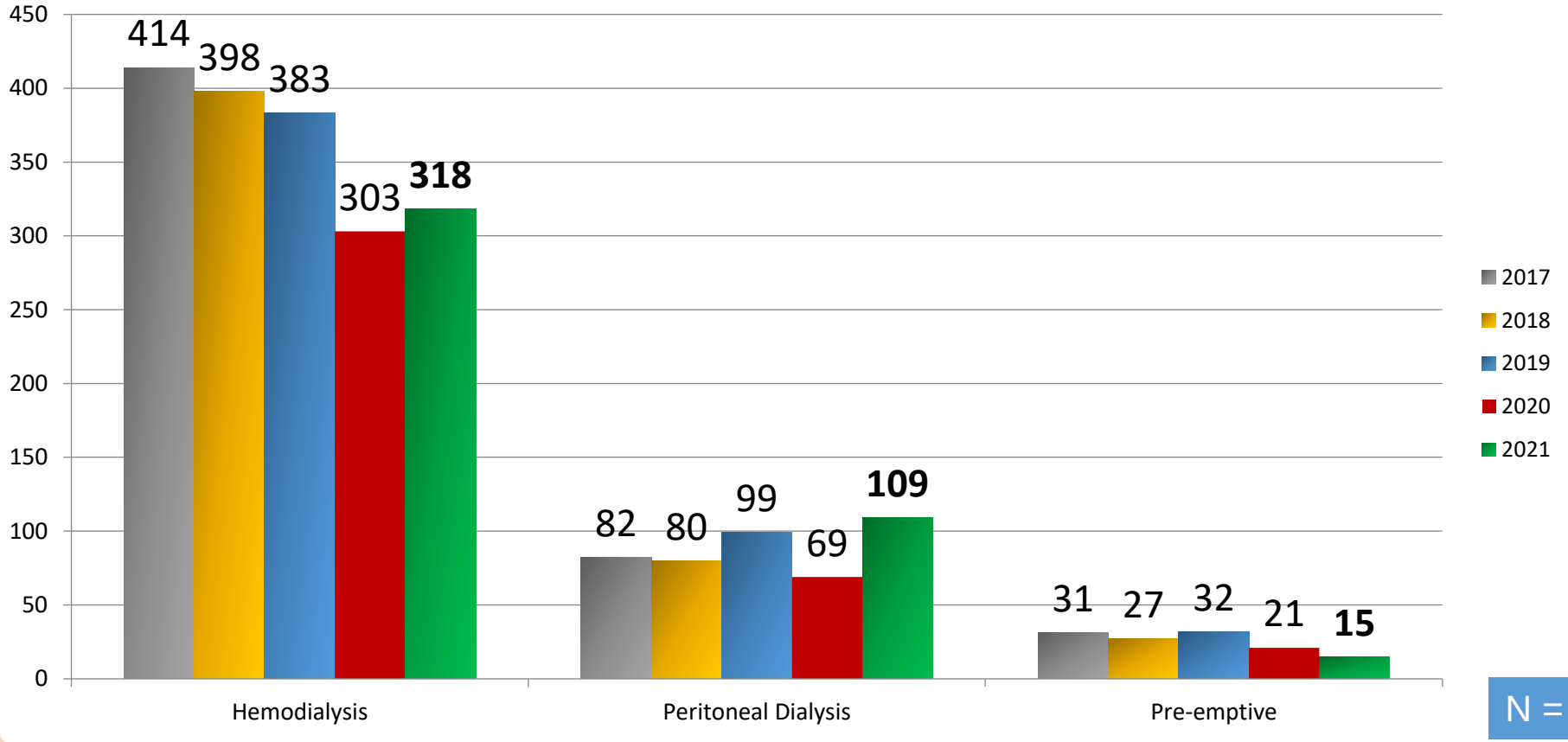
Renal Transplanted Patients

Previous renal replacement therapy, 2017-2021



N = 442 (2021)

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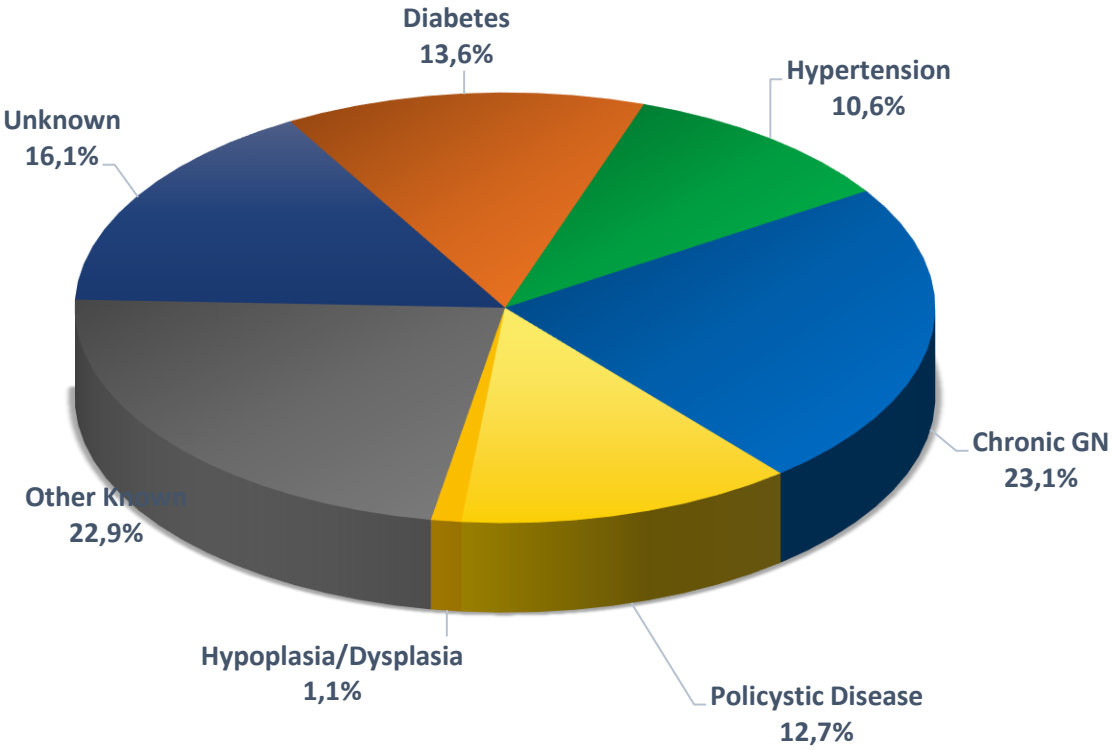
Primary renal disease of renal transplanted patients *during 2021*



N = 442

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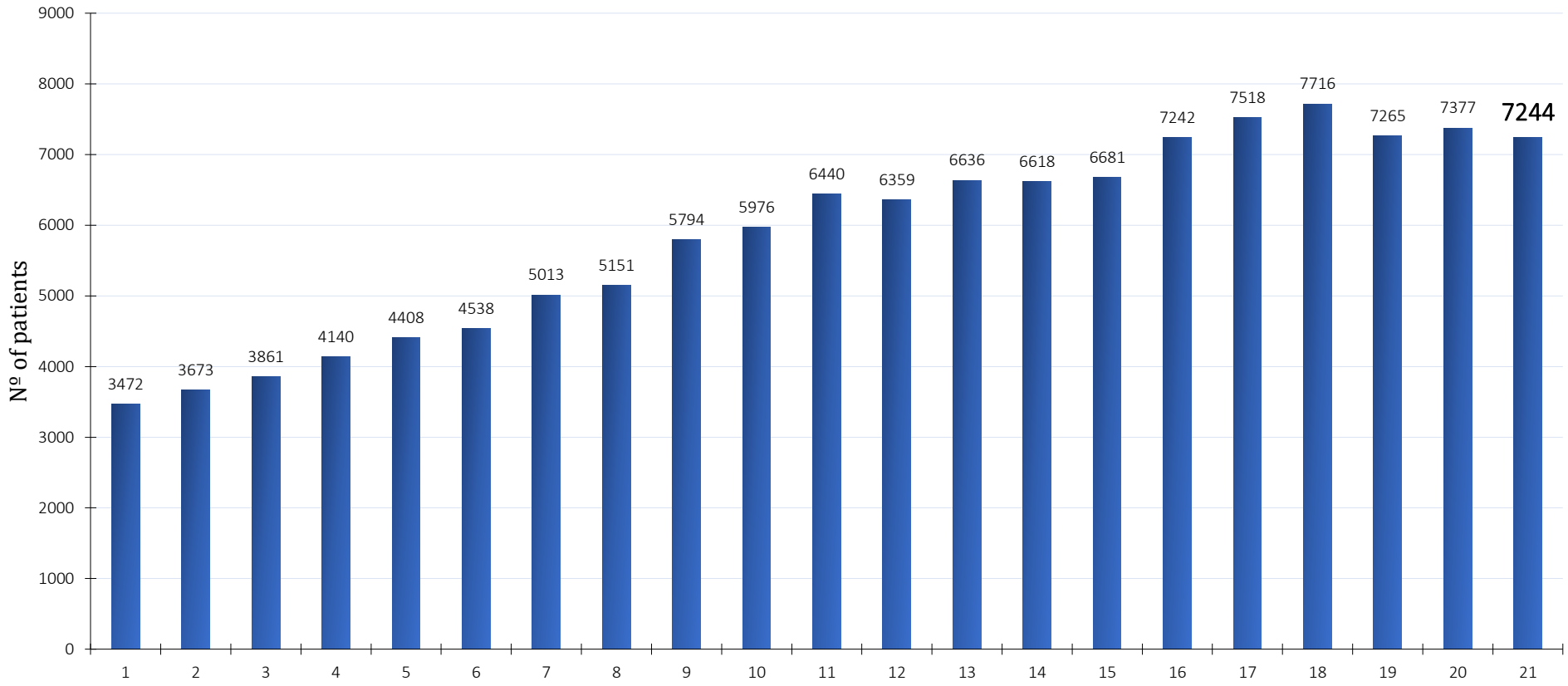
Patients with functioning graft and annual growth

31st December 2001 - 2021



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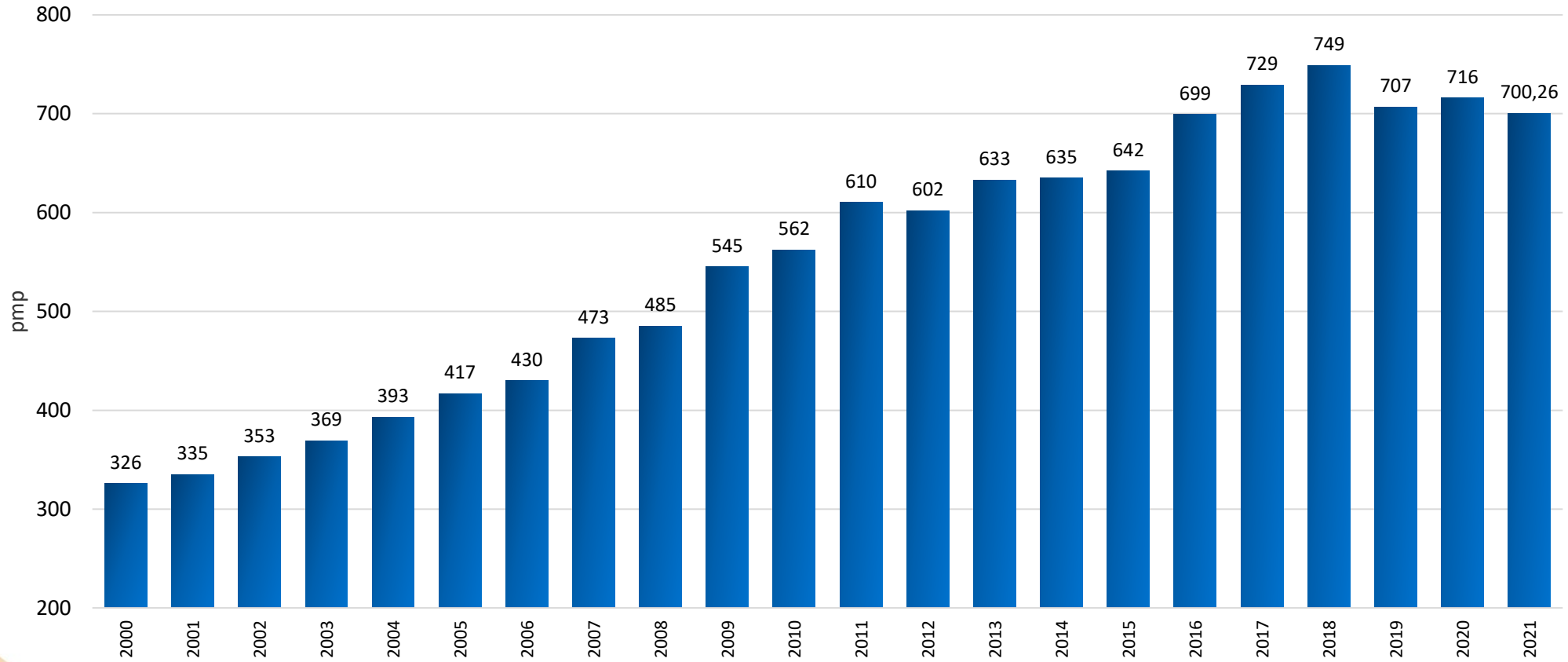
Prevalence of CKD patients with functioning graft

cumulative per million population end of each year 2001 - 2021



N = 7244

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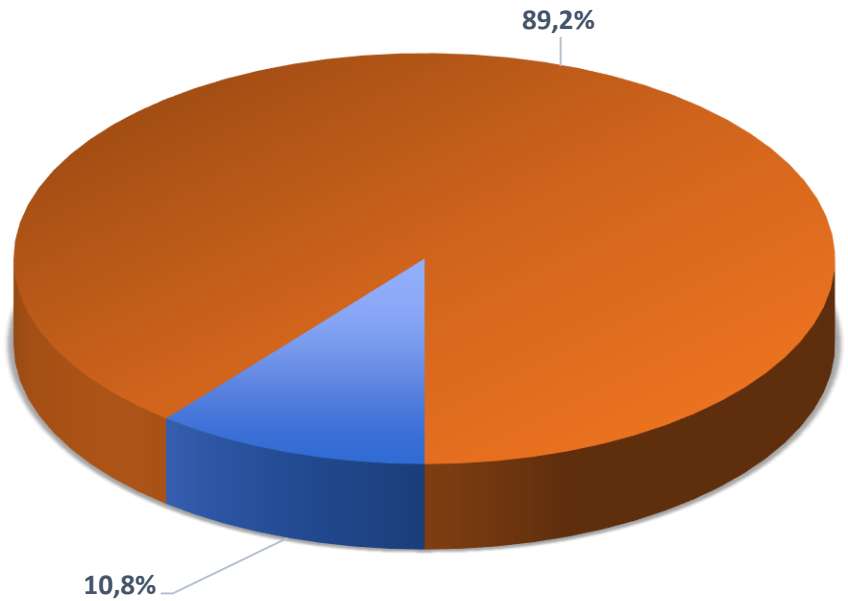
Renal transplantation: living vs deceased donor

2021



N = 7244

Renal transplantation activity
1980 - 2021

2021: 178 patients died with functioning graft;
127 transferred to HD / 25 transferred to PD

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CONSERVATIVE KIDNEY CARE

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Conservative Kidney Care 2021

- Questionnaires for Hospital Units (29)
- 14 Hospital Units (48%)
- 10 – Dedicated Team (CKC) (35%)
- 5 – with specialized elements in Palliative Care
- 6 – Articulation with in-hospital palliative care
- 4 – Articulation with community palliative care

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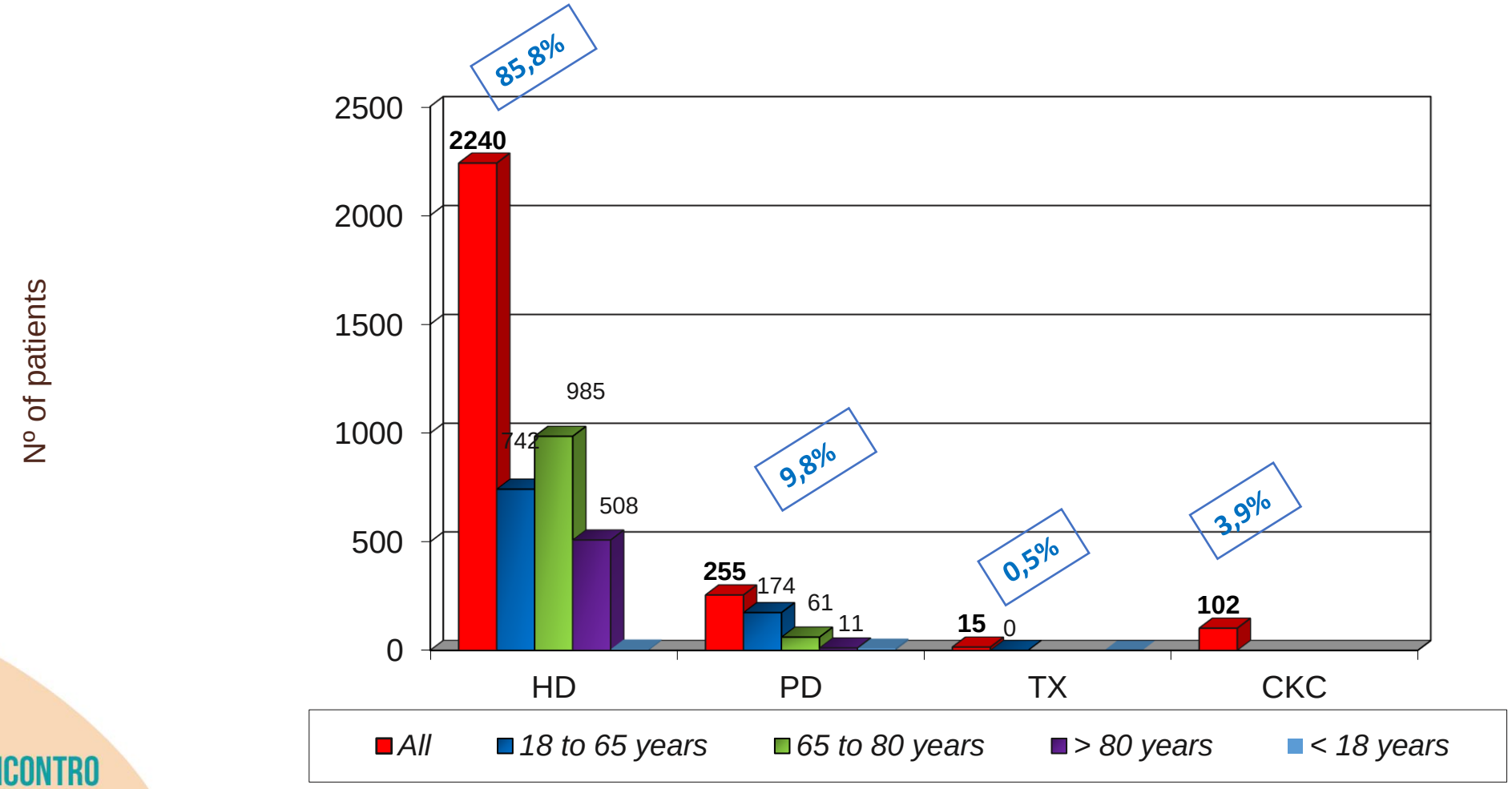
New patients starting RRT during 2021 *(n=2612)*



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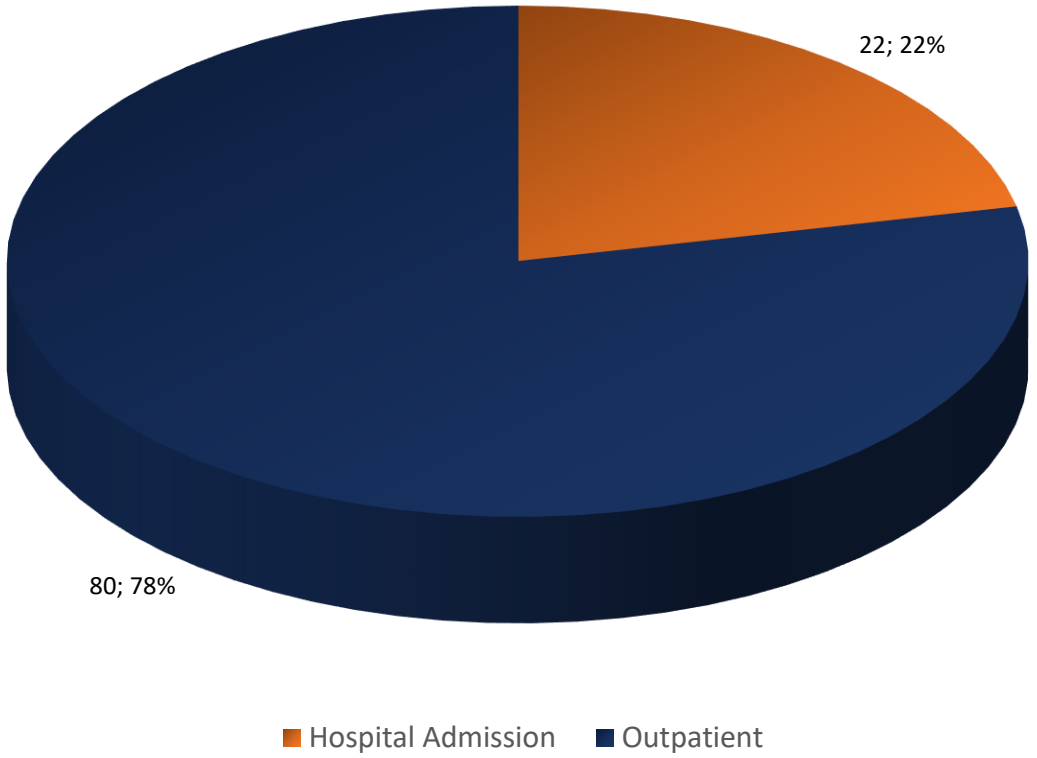
Conservative Kidney Care 2021 *(n=102)*
Hospital Admission



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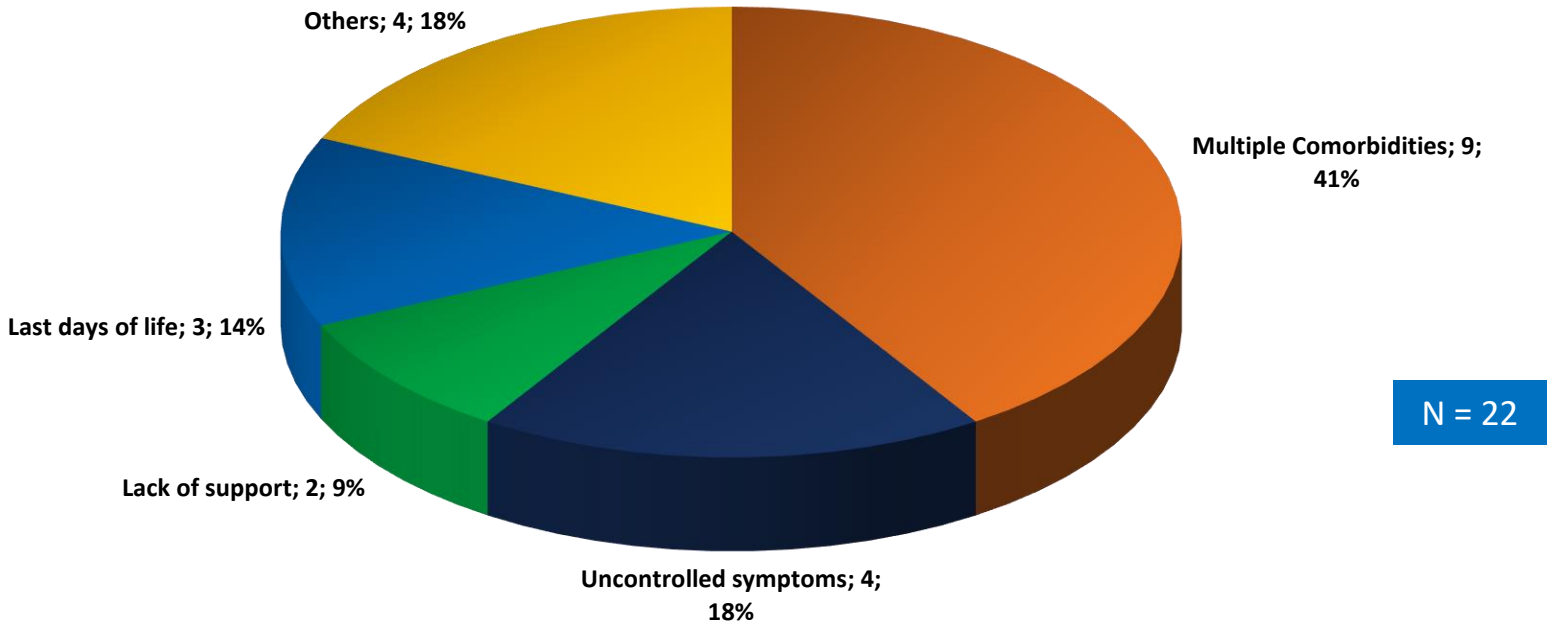
Conservative Kidney Care 2021

Hospital Admission - Reasons



N = 22

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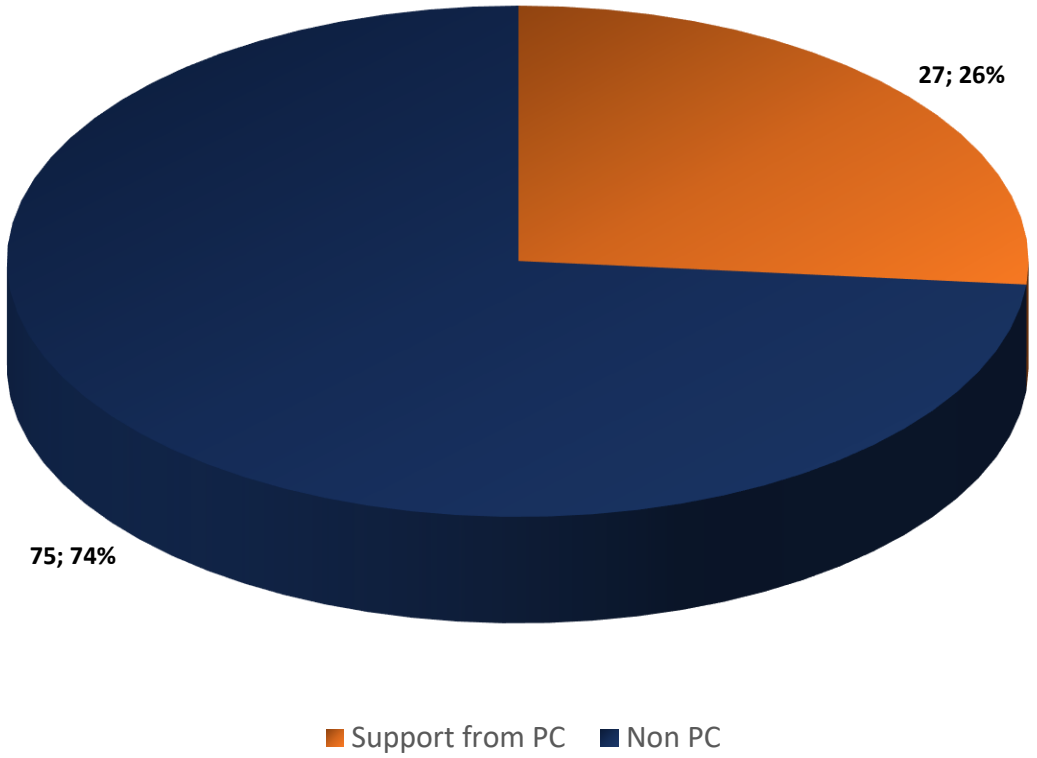
Conservative Kidney Care 2021 *(n=102)*
Differentiated Support from Palliative Care



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CKC patients movement in 2021

	IN
New patients	102
HD to CKC	153
DP to CKC	2
	257

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Portuguese Registry of Dialysis and Transplantation 2021

- ✓ Aumento de 6,6% na incidência de novos doentes a iniciar Diálise (em relação a 2020)
- ✓ A incidência de novos doentes a iniciar TSFR continua muito elevada > 200 pmp

- ✓ Aumento de 1,1% na Prevalência de doentes em diálise (em relação a 2020)
- ✓ A prevalência de doentes sob TSFR continua muito elevada > 2000 pmp

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Portuguese Registry of Dialysis and Transplantation 2021

Hemodiálise

- ✓ Aumento da incidência (6,6%) e da Prevalência (1,1%) em relação a 2020
- ✓ A idade média não aumentou (68,3 anos)
- ✓ Maior % de doentes a iniciar HD por CVC (63,7%) e a taxa de CVC nos doentes prevalentes atingiu os 19,4%
- ✓ Diminuição da taxa de mortalidade em relação a 2020 (13,4%)

Diálise Peritoneal

- ✓ Aumento da incidencia de novos doentes (6,7% em relação a 2020)
- ✓ A prevalência continua a aumentar (0,9% em relação a 2020)
- ✓ A taxa de mortalidade diminuiu em relação a 2020
- ✓ A mais baixa taxa de peritonites até ao momento

Transplantação Renal

- ✓ A incidência aumentou 12,5% em relação a 2020
- ✓ Redução da incidência de tx com dador vivo (12,2% em relação a 2020)
- ✓ Pool de doentes transplantados continua a crescer

Portuguese Registry of Dialysis and Transplantation 2021

Tratamento Conservador da DRC

- ✓ Apenas 35 % das Unidades Hospitalares têm um equipa dedicada ao TC
- ✓ Apenas 50% destas Unidades têm elementos com especialização em Cuidados Paliativos
- ✓ Dos 102 doentes incidentes no TC ¼ necessitou de Cuidados Paliativos diferenciados
- ✓ A suspensão de Diálise parece não estar articulada com as Equipas de TC

Sociedade Portuguesa de Nefrologia

Gabinete do Registo da Doença Renal Crónica da Sociedade Portuguesa de Nefrologia

Ana Galvão

Rui Filipe

Maria João Carvalho

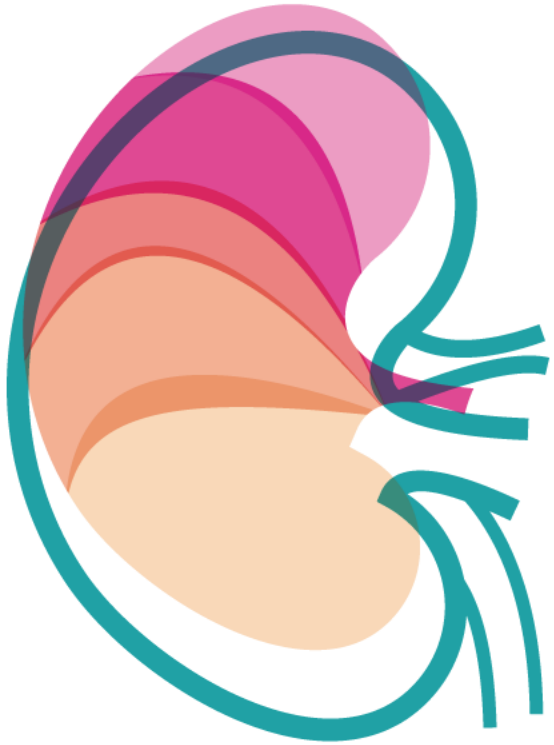
Rita Leal

Marta Neves

Manuel Amoedo

Gil Silva

Obrigada



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XXXVI CONGRESSO PORTUGUÊS DE NEFROLOGIA

SPN Sociedade Portuguesa de Nefrologia

SPNEFRO.PT

XXXVI CONGRESSO APEDT

APEDT

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