

ENCONTRO RENAL

PORTO PALÁCIO 16 - 18 NOV 2023

XXXVII
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PORTUGUÊS
DE NEFROLOGIA



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APEDT



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RENAL** 16 - 18
PORTO PALÁCIO NOV 2023

Portuguese Registry of Kidney Replacement Therapy 2022

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



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APEDT



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

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



Abbreviators

CKD – Chronic Kidney Disease

HD - Haemodialysis

PD - Peritoneal Dialysis

KTr - Kidney Transplant

PMP - Per Million Population

KRT - Kidney Replacement Therapy

Pts – patients

Nº - number

CKC – Conservative kidney Care

VA – Vascular Access

AVFistula – Arteriovenous fistula

Cat. – Catheter

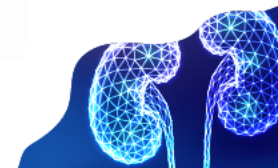
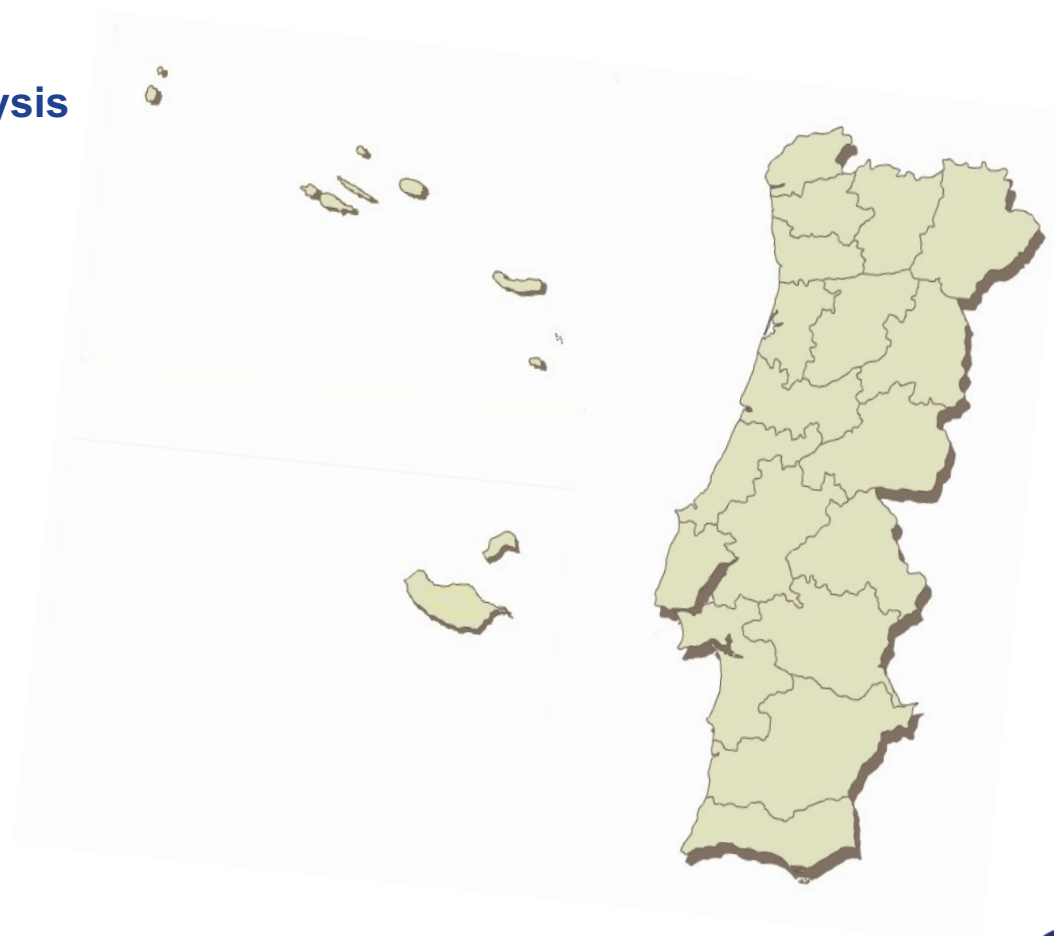
CVC – Central Vein Catheter

ERA – European Renal Association

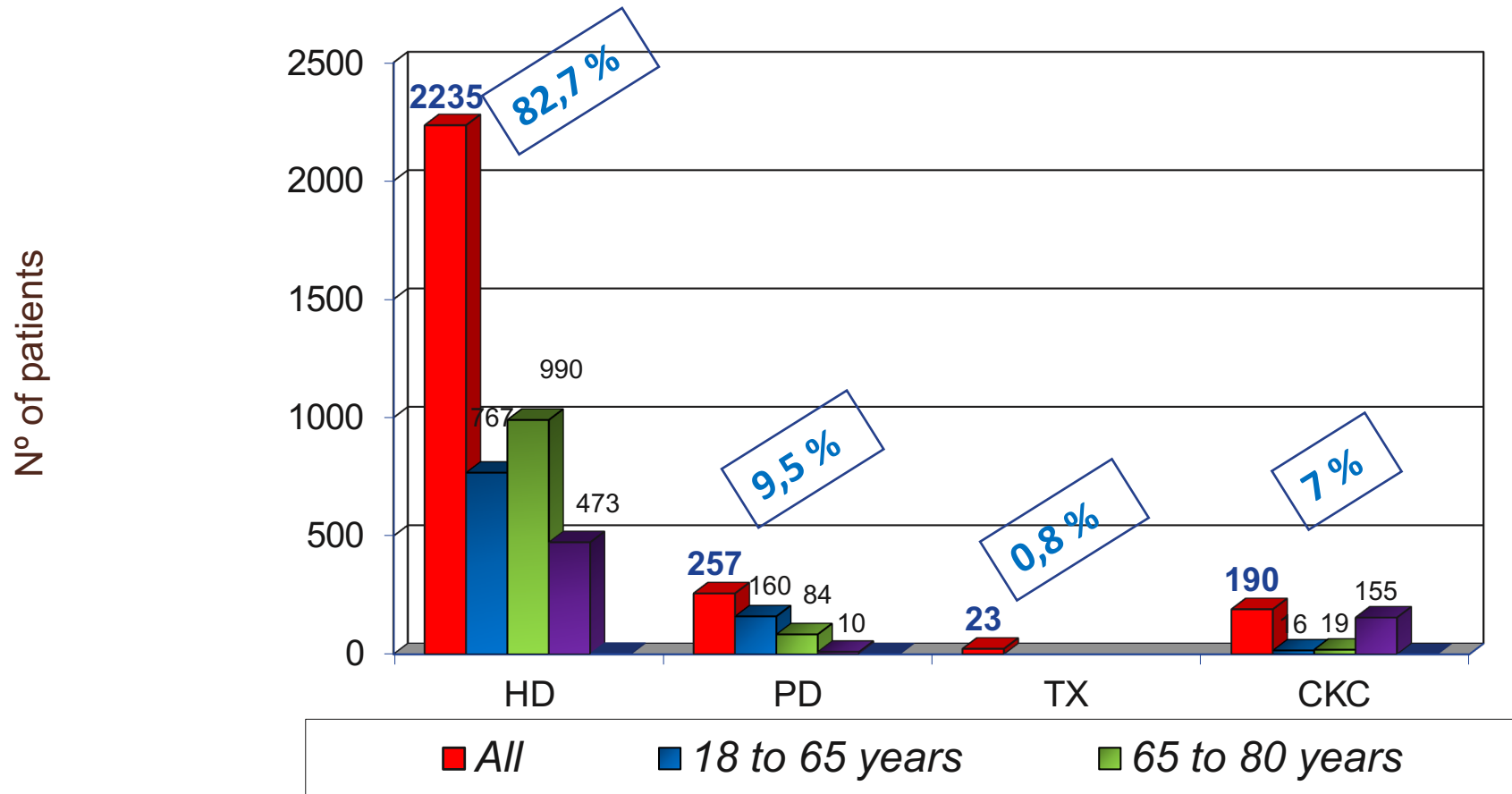


Portuguese Registry of Kidney Replacement Therapy 2022

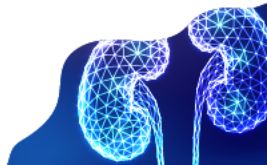
- Questionnaires for Hemodialysis (HD), Peritoneal Dialysis (PD)
- Conservative Kidney Care (CKC) and Kidney Transplantation
- 135 Hemodialysis Centers
- 26 Peritoneal Dialysis Units
- 8 adult and 1 pediatric kidney transplantation centers
- 100% response rate



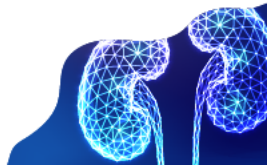
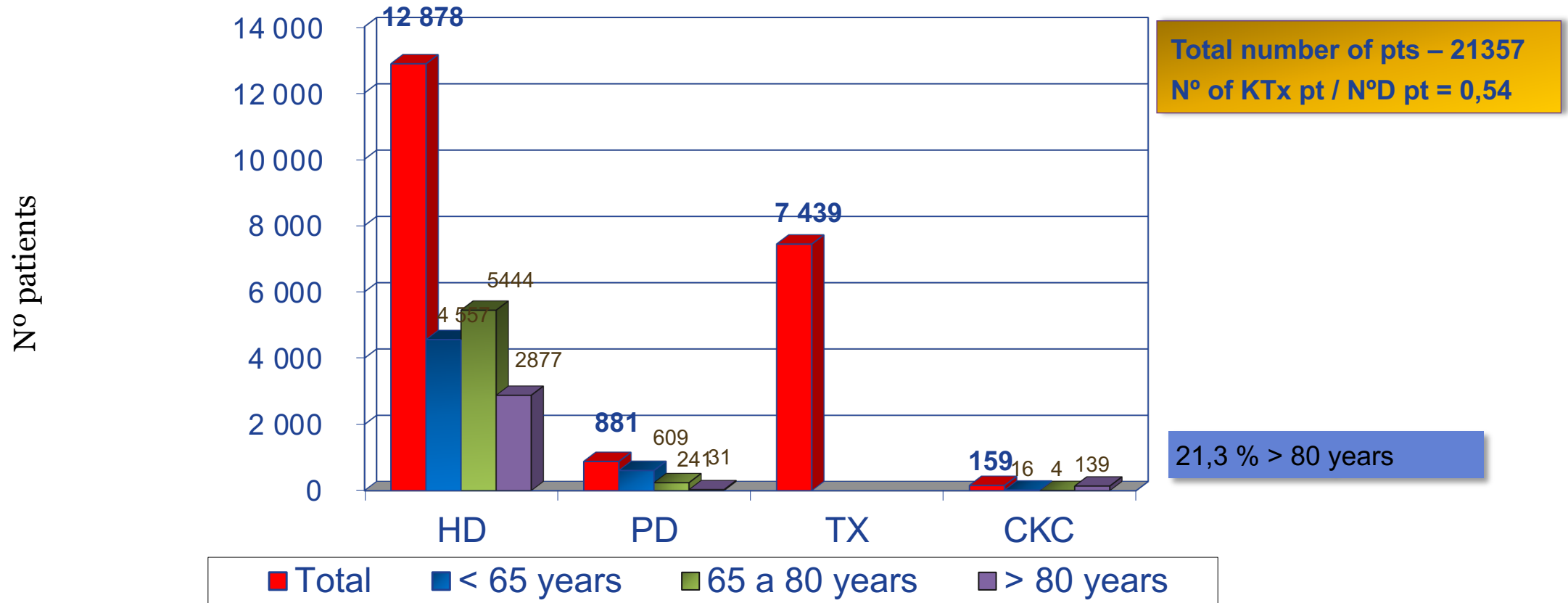
New patients starting KRT during 2022 (n=2705)



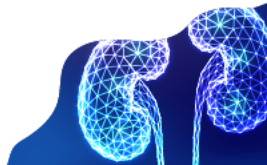
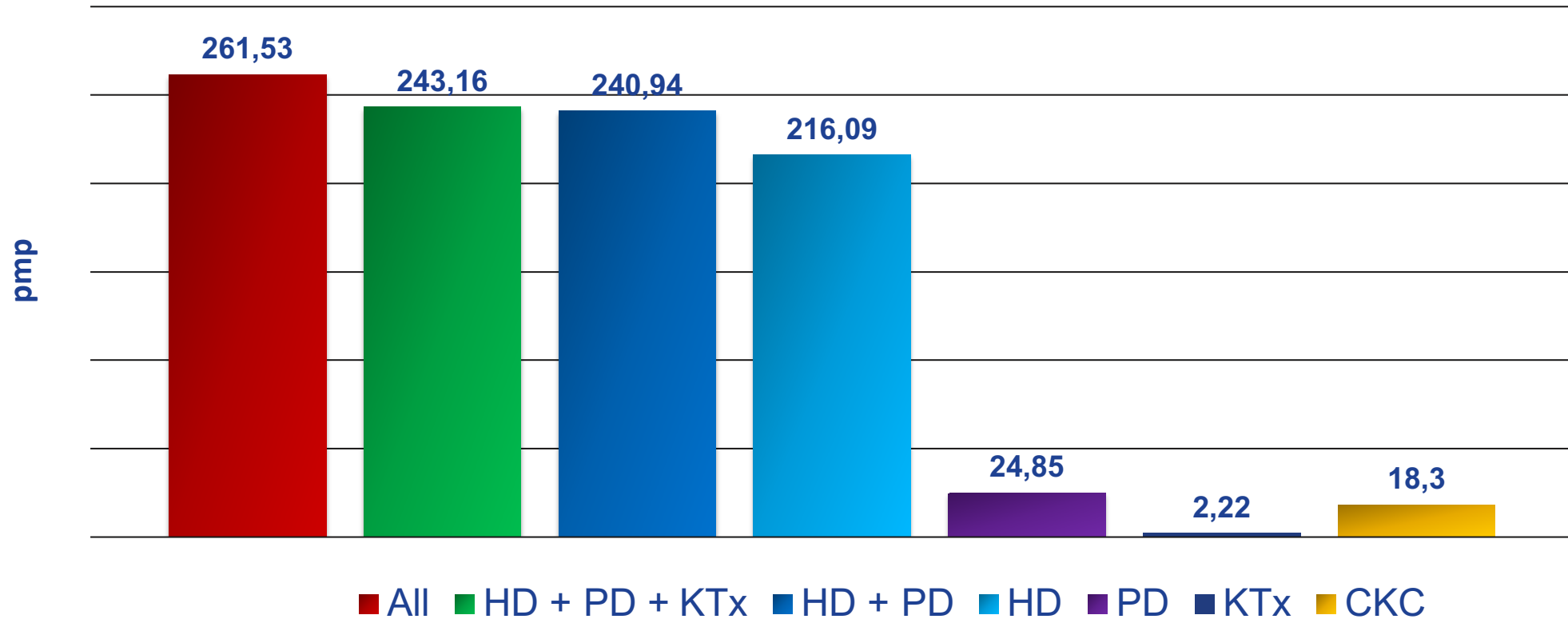
23,6 % > 80 years



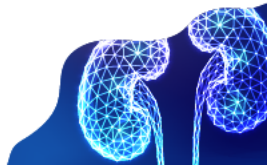
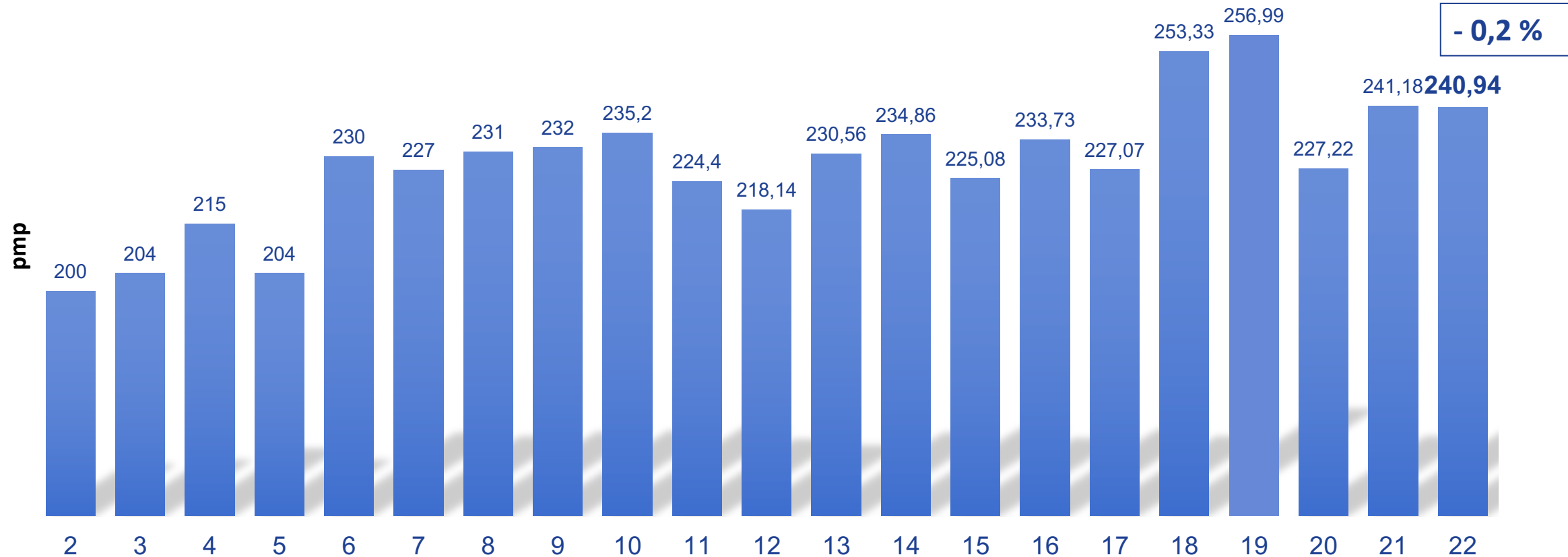
Prevalent patients on KRT 31st December 2022



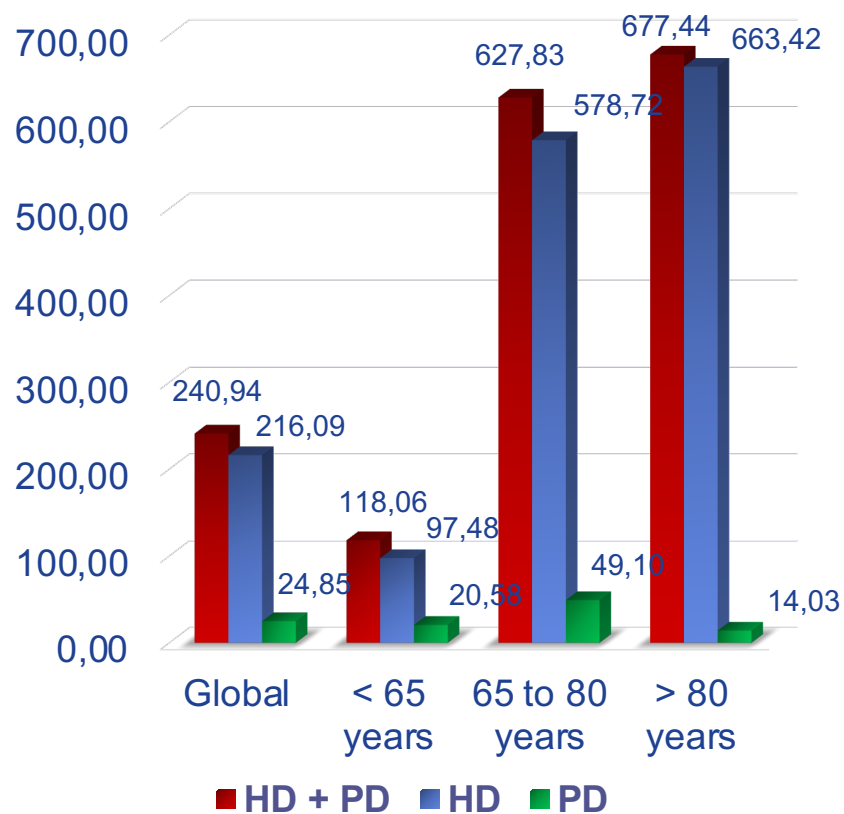
Incident patients accepted for KRT (PMP) during 2022



Incident patients accepted for dialysis *HD and PD per million population 2002 - 2022*



Incident patients accepted for dialysis *HD and PD per million population by age group during 2022*



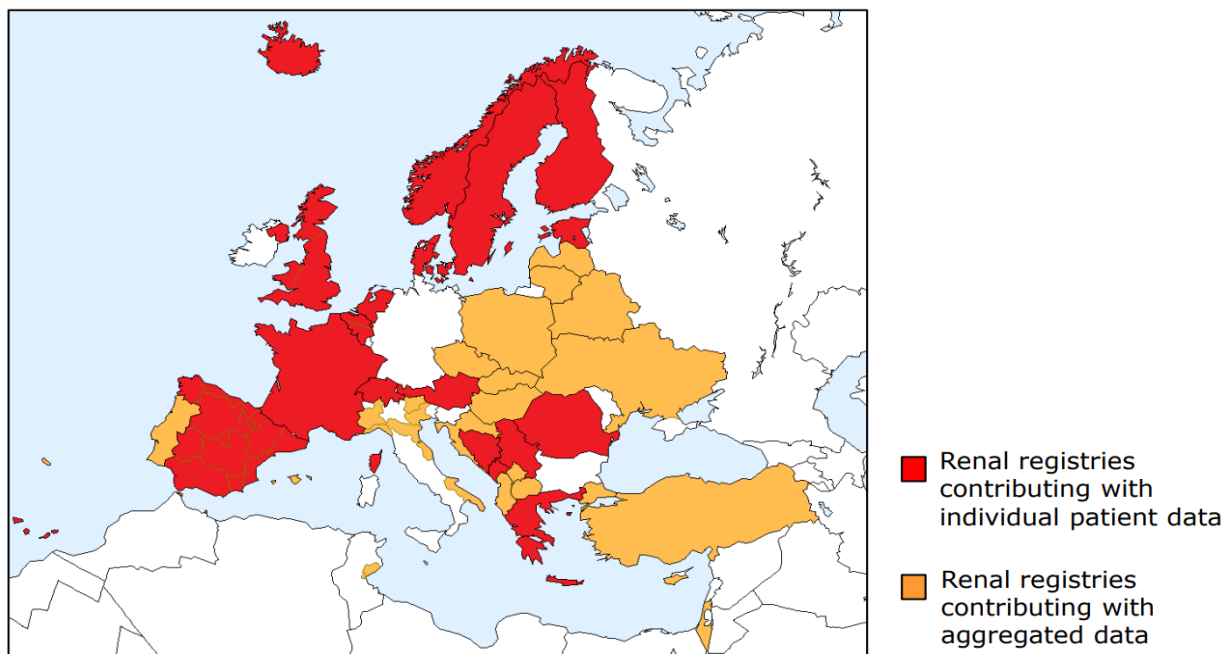
Incidence

How do we compare?



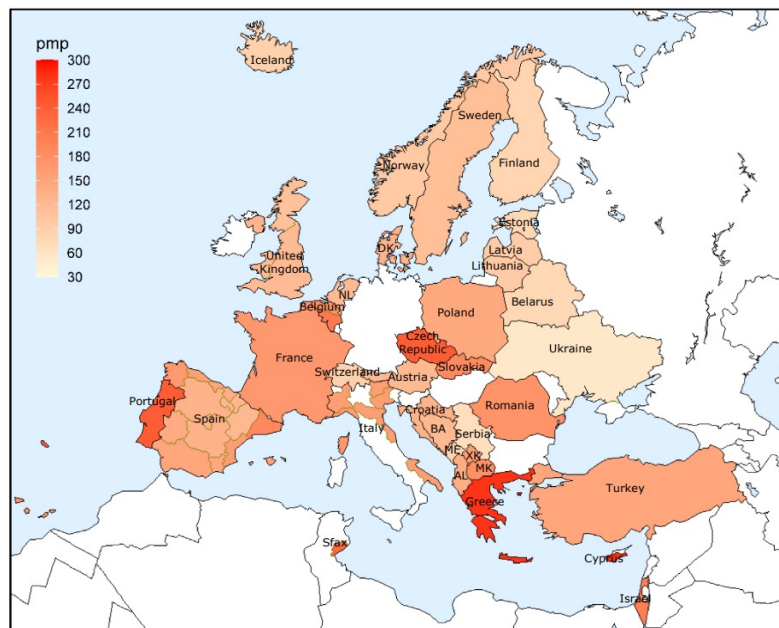


National and regional renal registries that contributed data to the 2021 ERA Registry Annual Report





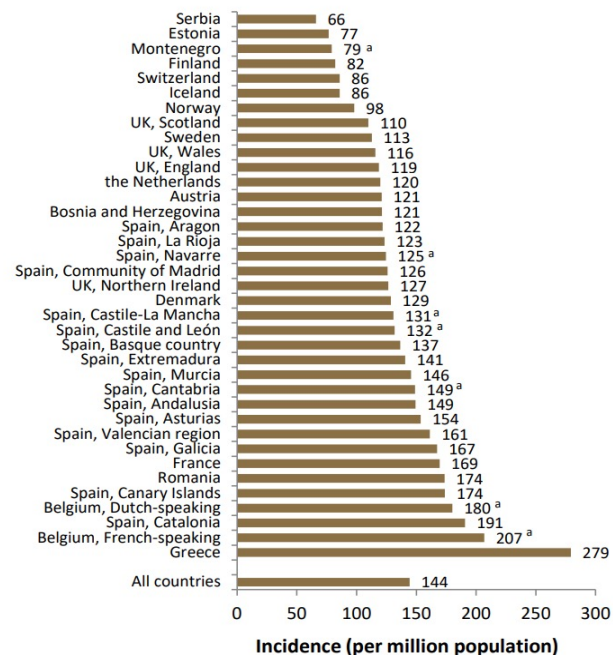
Incident patients accepted for KRT in 2021, at day 1 *by country*



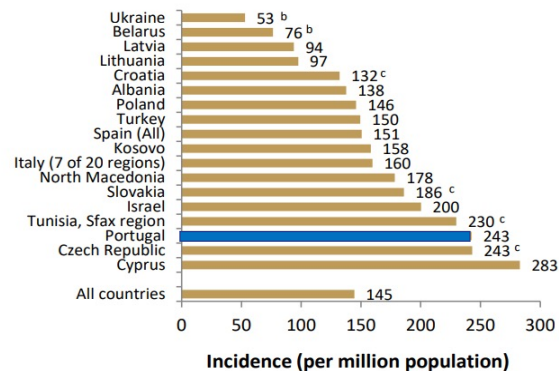


Incident patients accepted for KRT in 2021, at day 1 by country

Unadjusted incidence
renal registries providing individual patient data



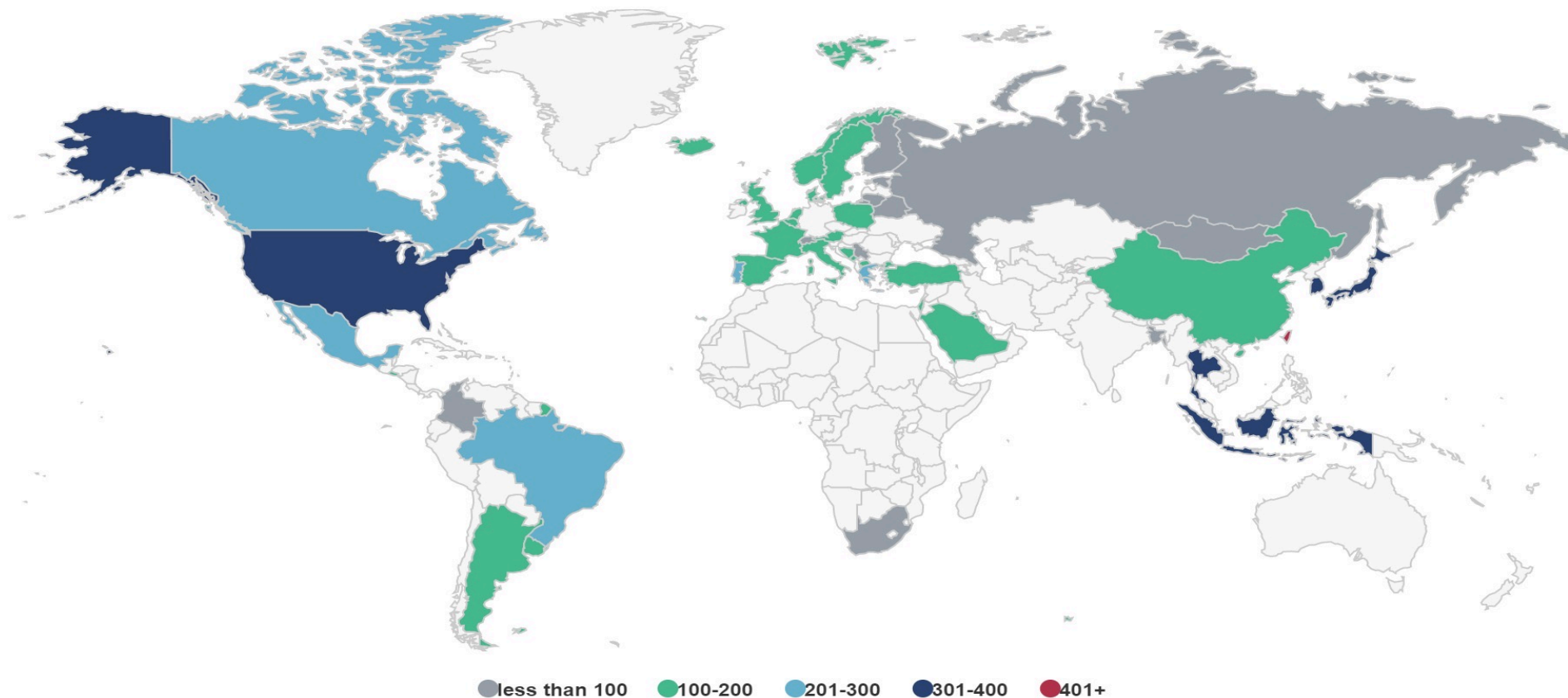
Unadjusted incidence
renal registries providing aggregated data



^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



Figure 11.1 Geographic variation in incidence of treated ESRD per million population, by country or region, 2020

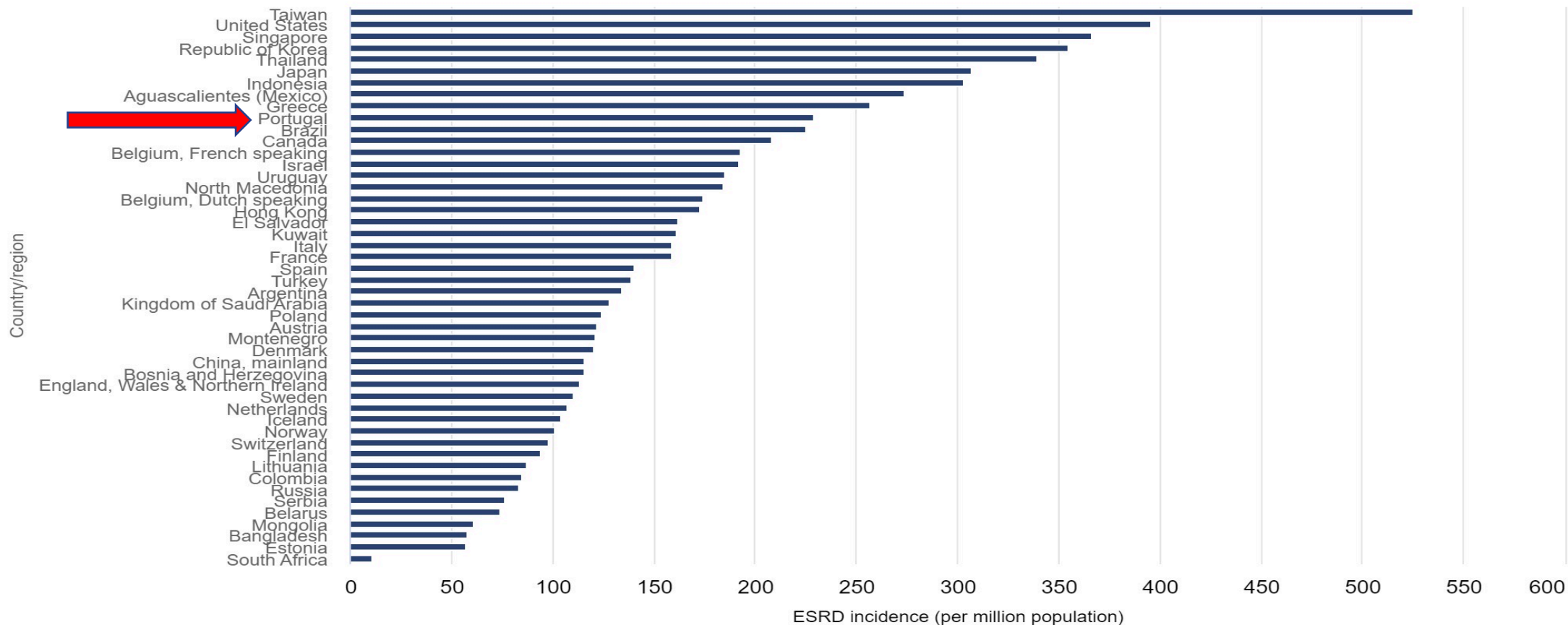


Data Source: 2022 United States Renal Data System Annual Data Report

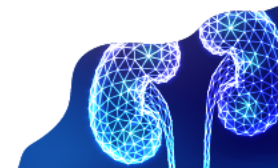


Figure 11.2 Incidence of treated ESRD, by country or region, 2020

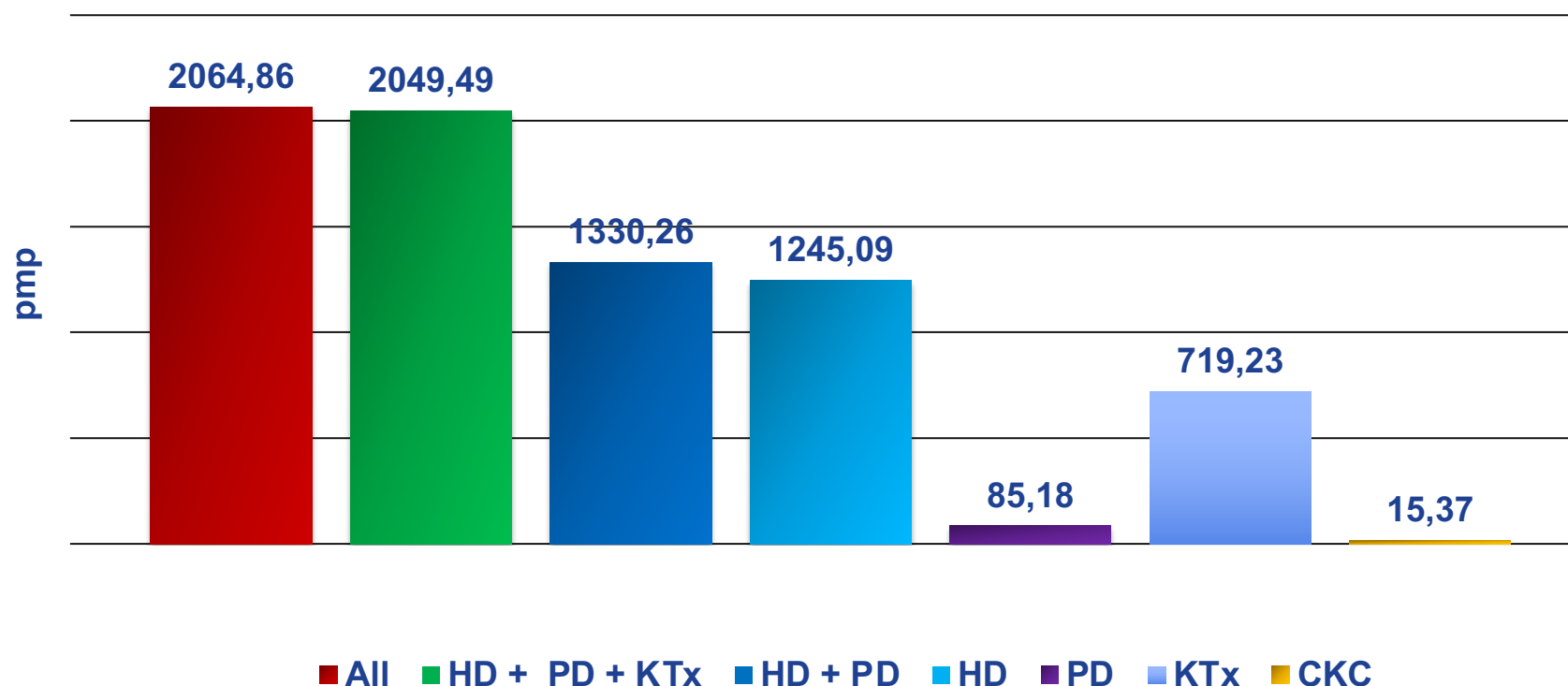
Sort by Rate



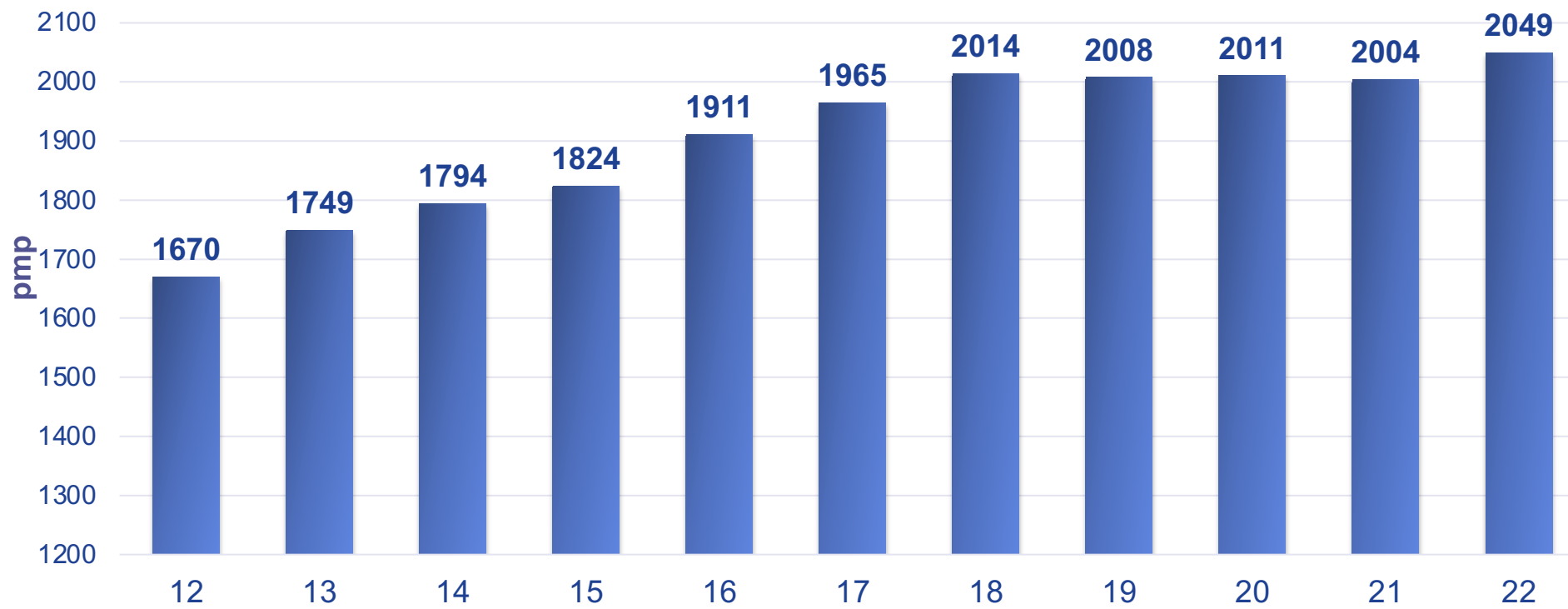
Data Source: 2022 United States Renal Data System Annual Data Report



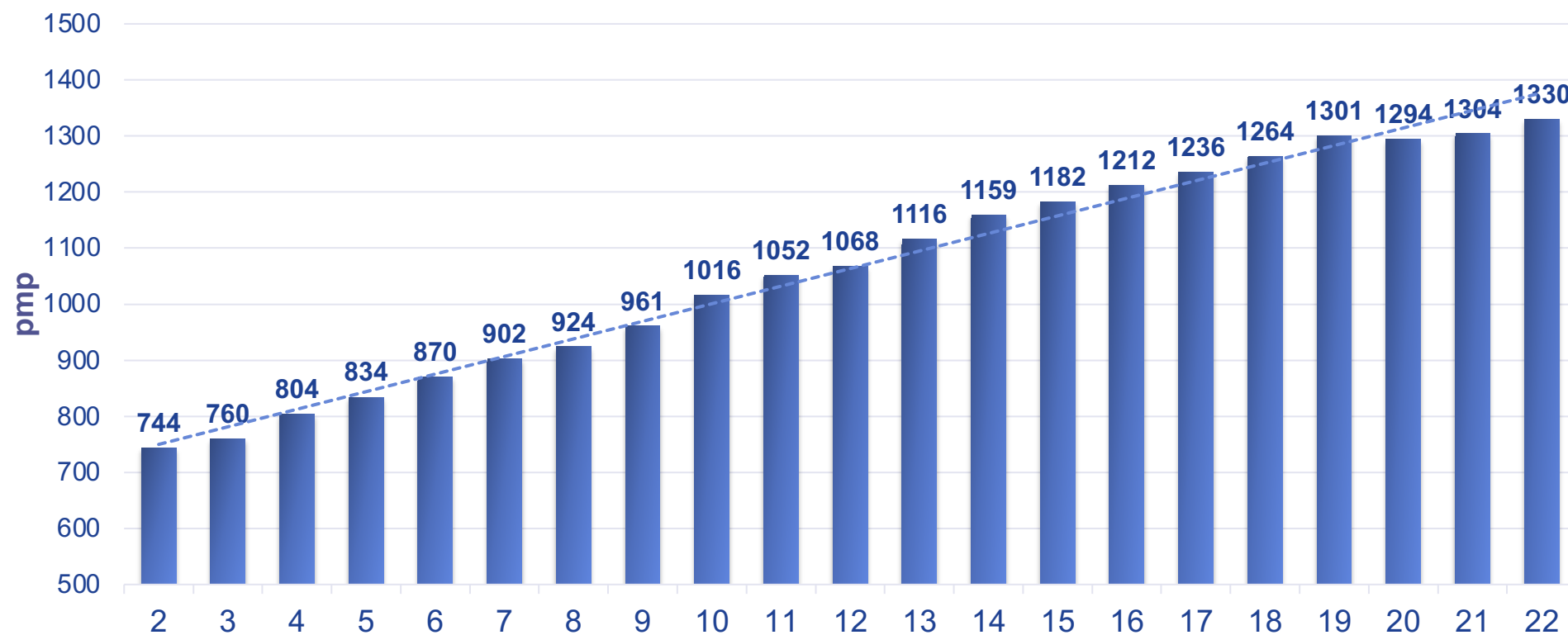
Prevalent patients on KRT by modality (PMP) 31st December 2022



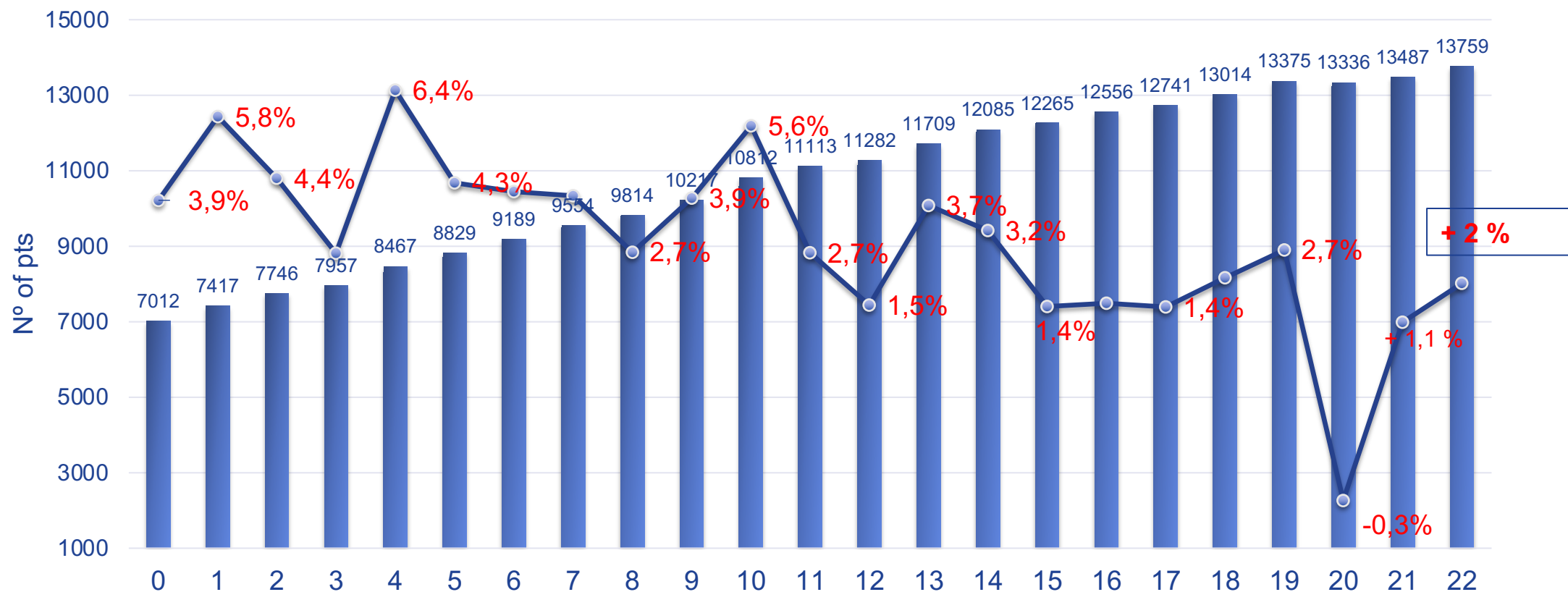
Prevalent patients on KRT *per million population end of each year 2012 - 2022*



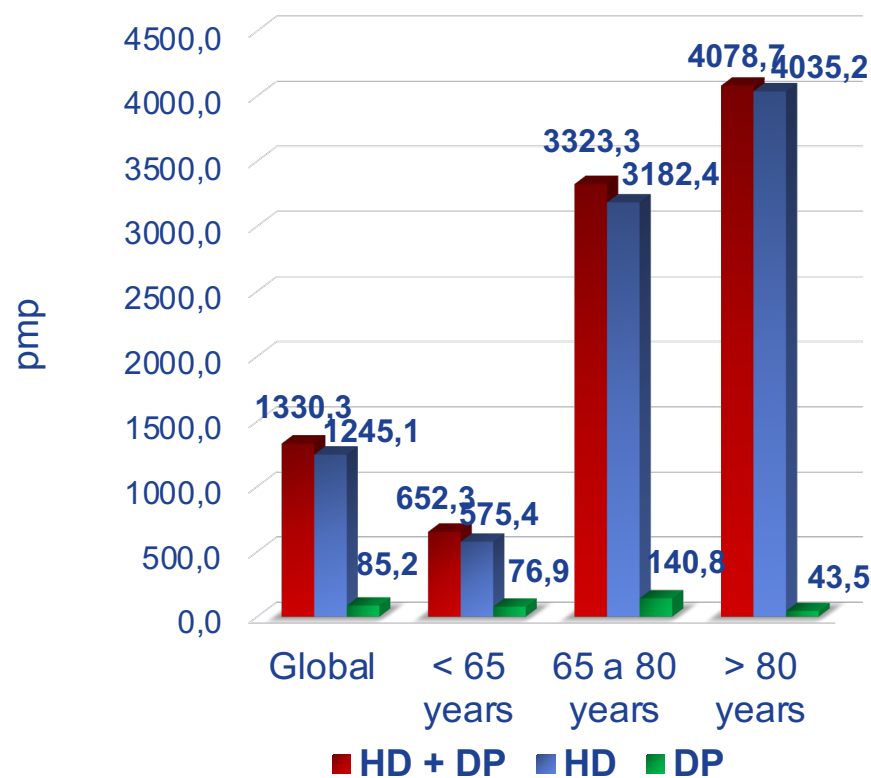
Prevalent patients on dialysis *per million population end of each year 2002 - 2022*



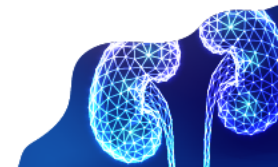
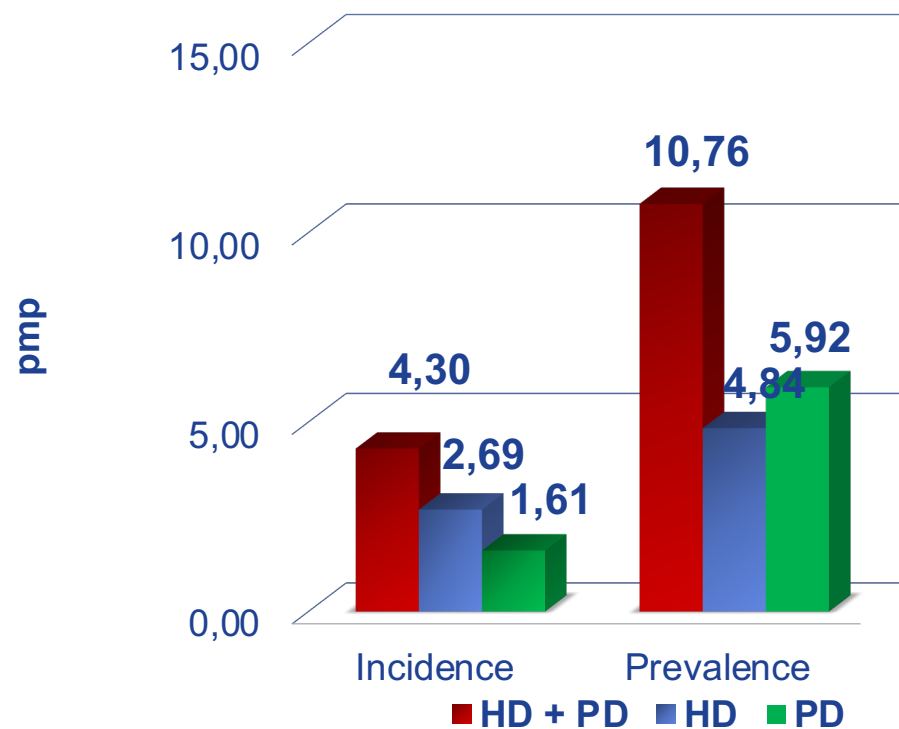
Patients on dialysis and annual growth *end of each year 2000 - 2022*



Prevalence of CKD patients treated by dialysis *per million population by age group in 2022*



Incident and prevalent pediatric patients on dialysis *HD and PD per million population 2022*



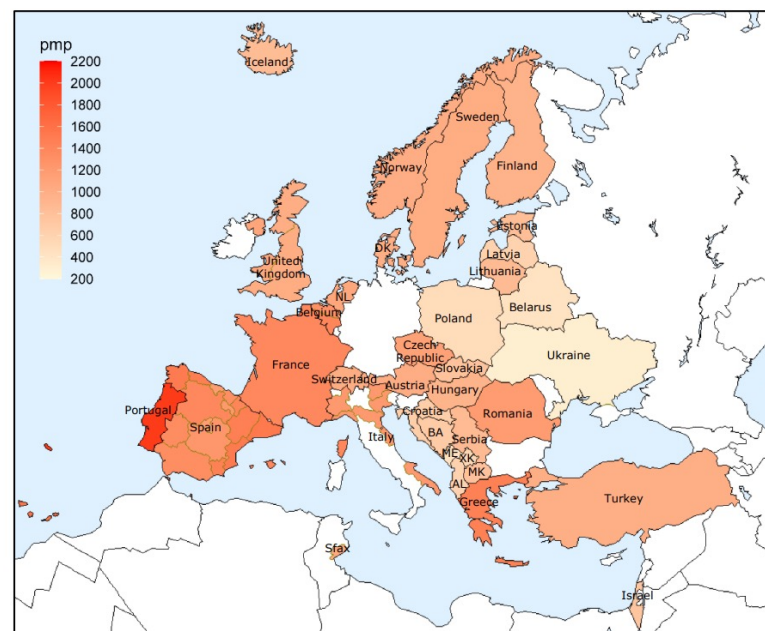
Prevalence

How do we compare?



Prevalent patients on KRT in 2021

by country



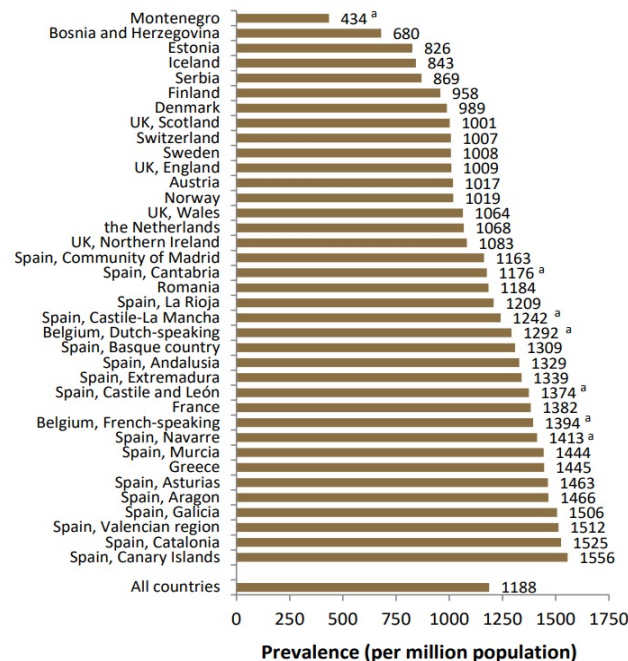


Prevalent patients on KRT in 2021

by country

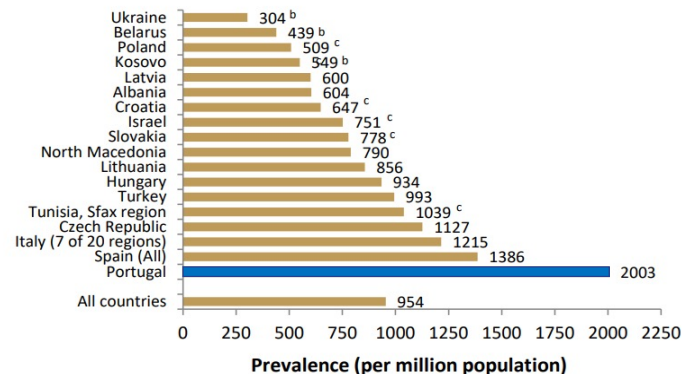
Unadjusted prevalence

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

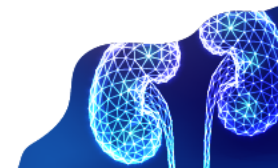
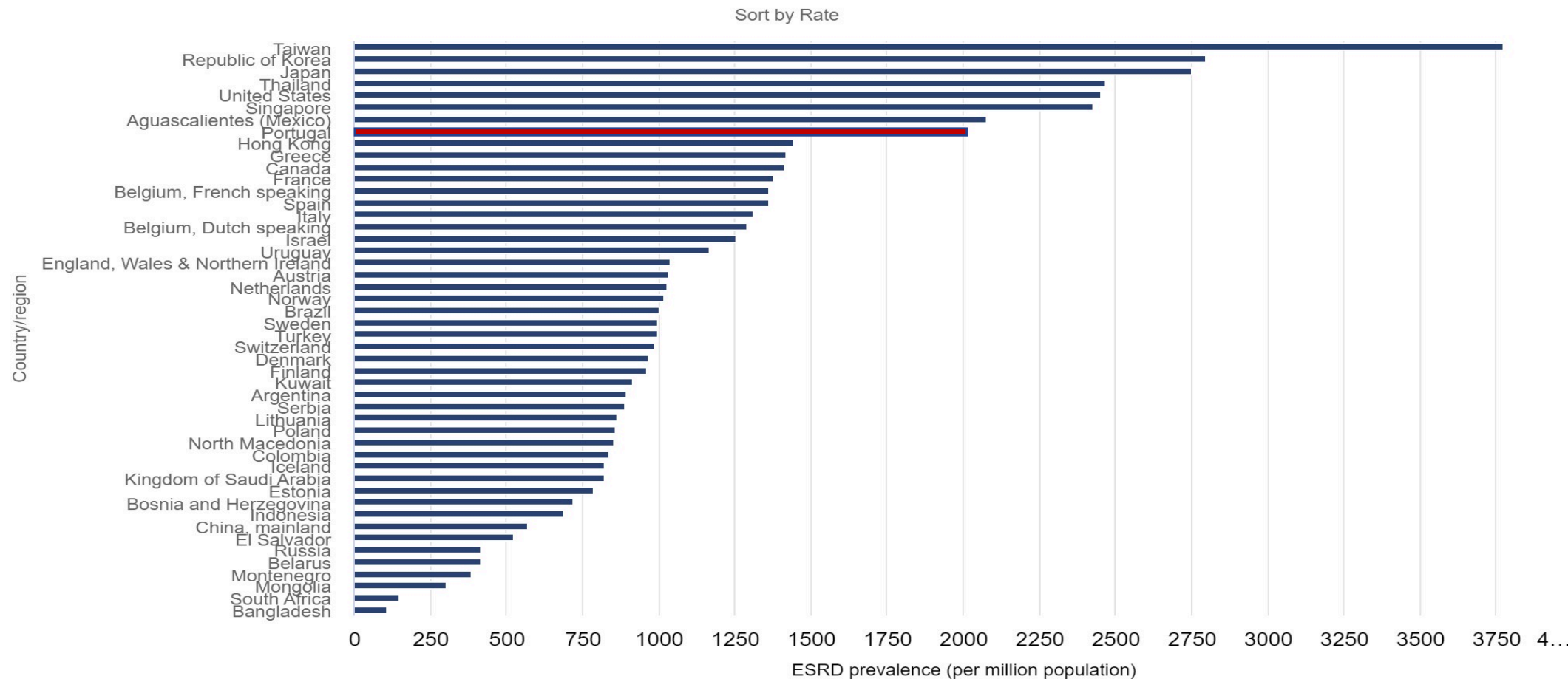
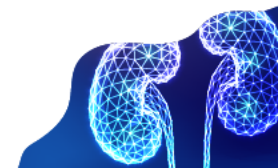


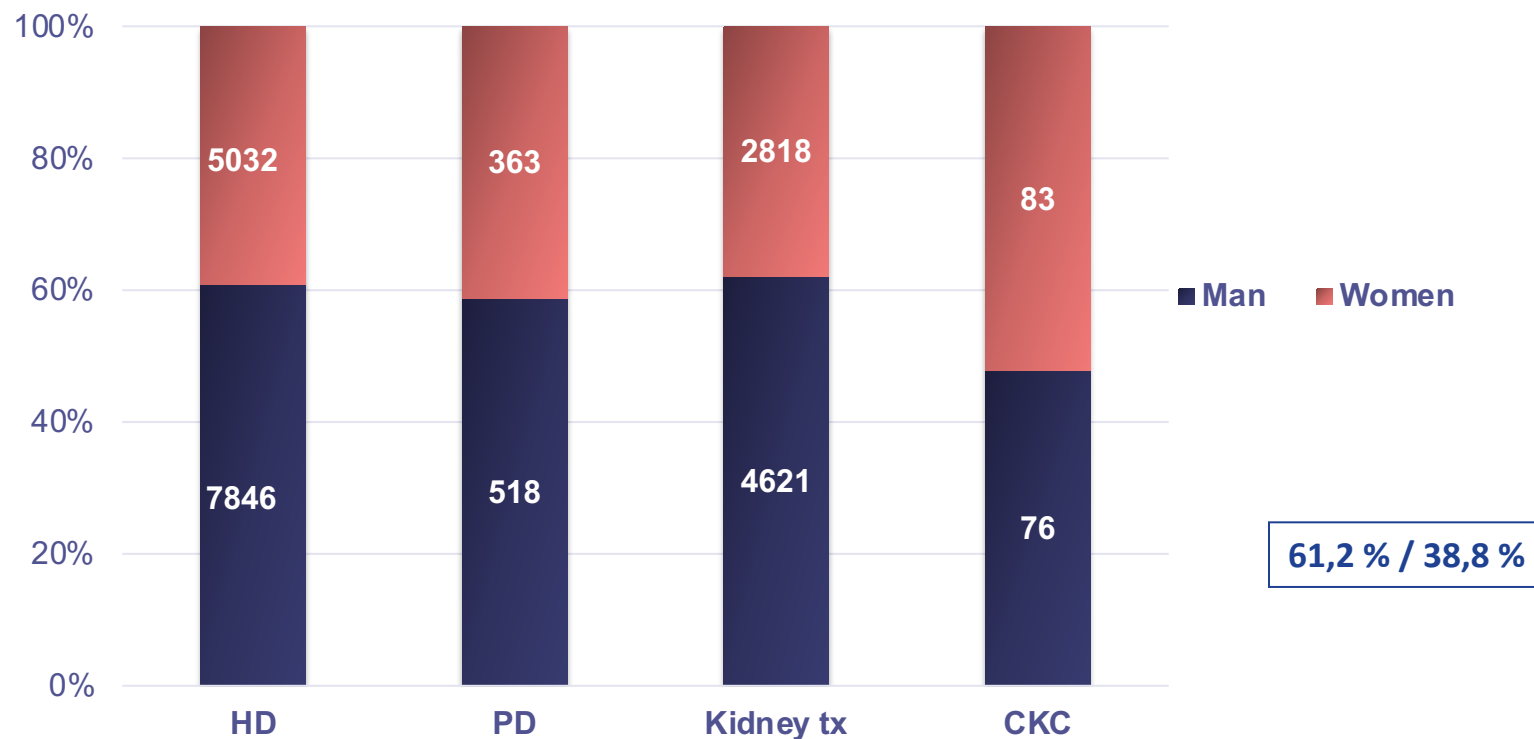
Figure 11.9 Prevalence of treated ESRD, by country or region, 2020



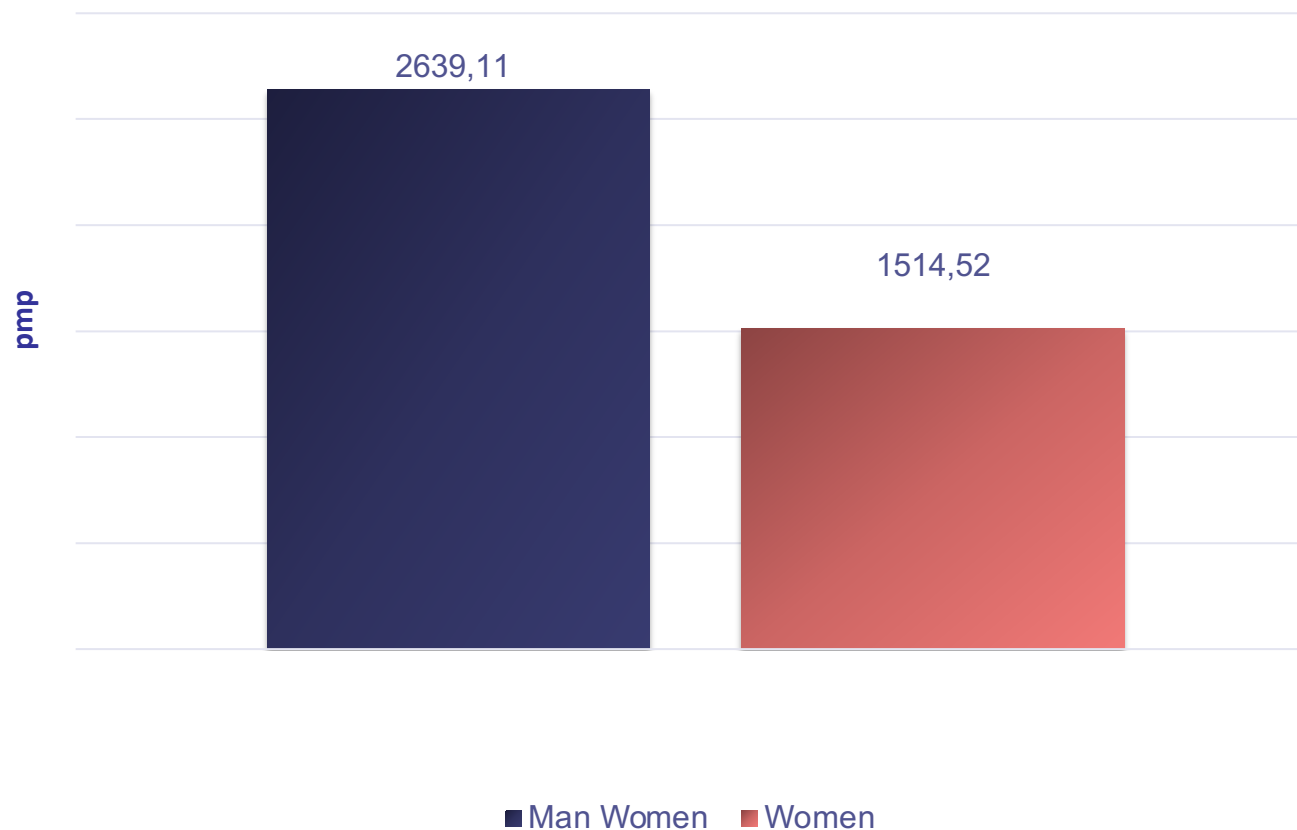
Data Source: 2022 United States Renal Data System Annual Data Report



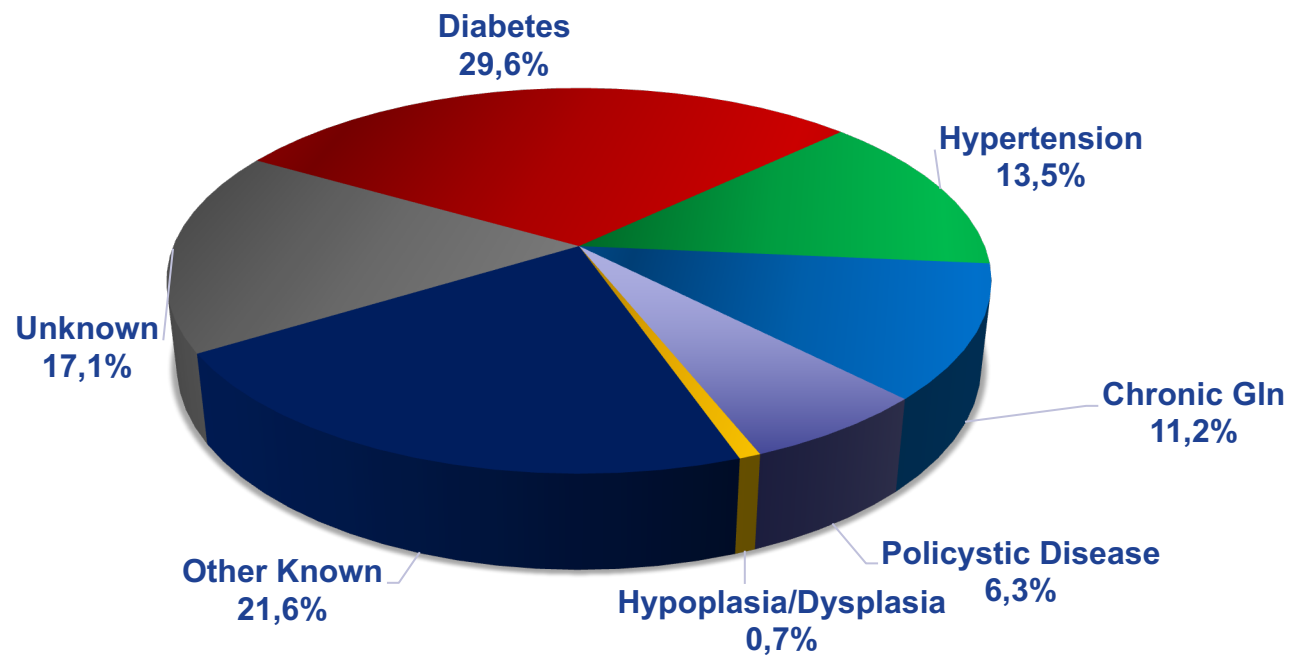
Gender distribution in each modality 31st December 2022



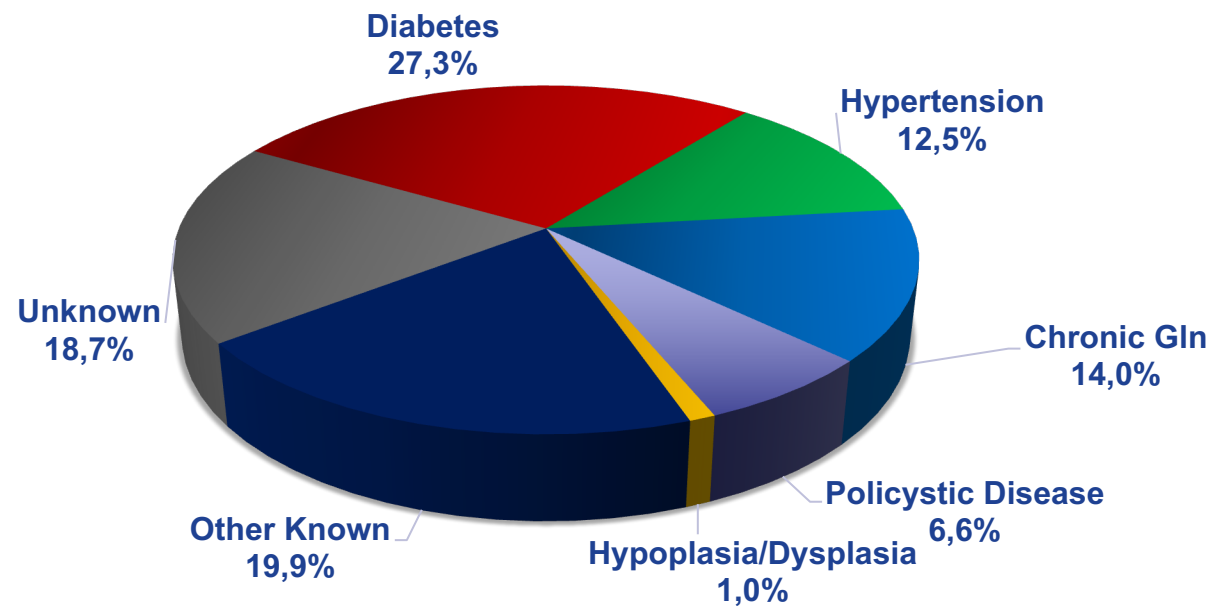
Prevalence by gender, all KRT *per million population 31st December 2022*



Primary renal disease of patients accepted for dialysis *HD and PD during 2022*



Primary renal disease of prevalent patients *HD and PD, 31st December 2022*

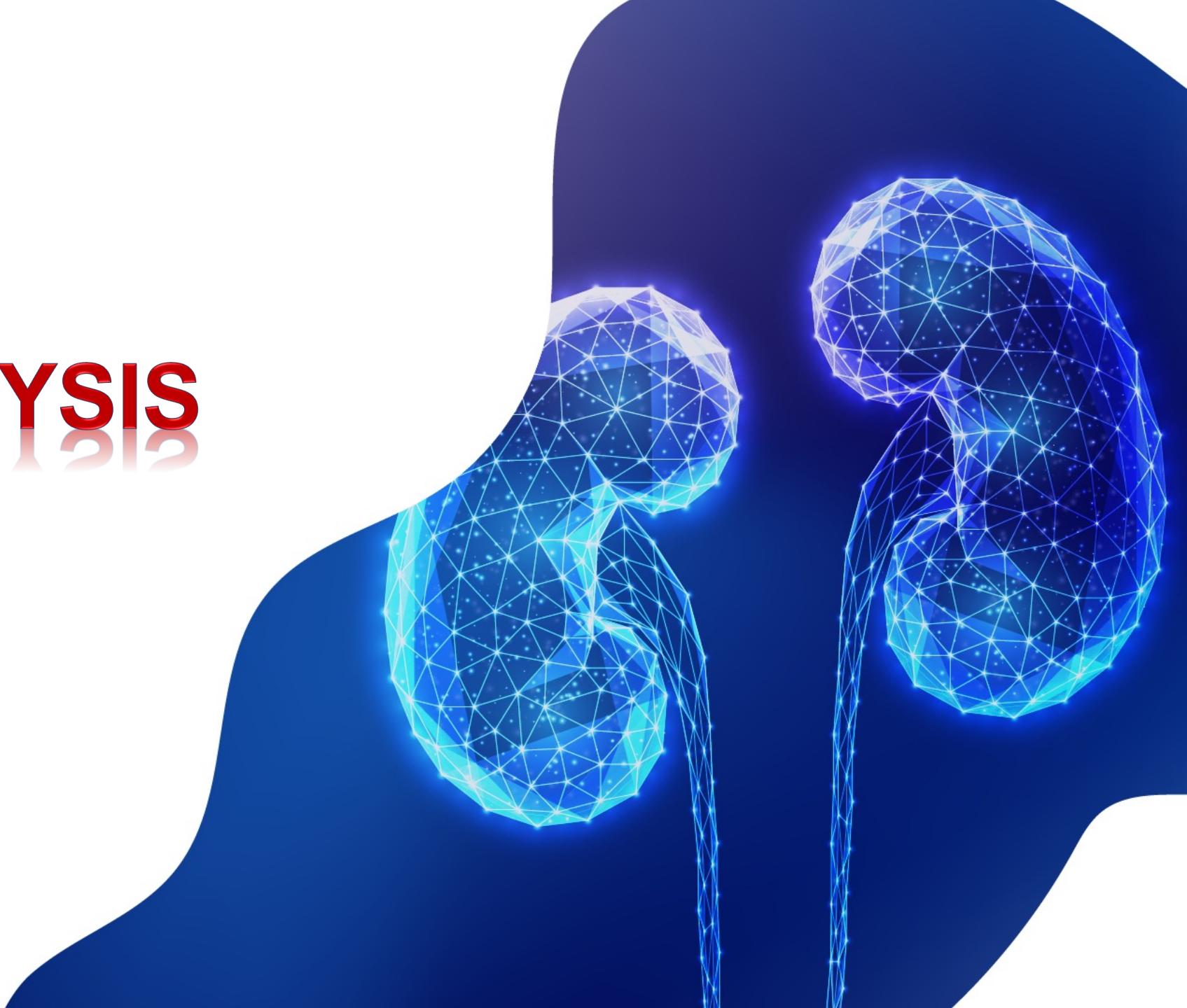


N = 13734
Not available = 25

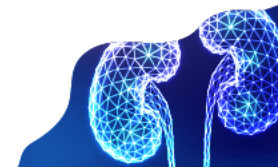
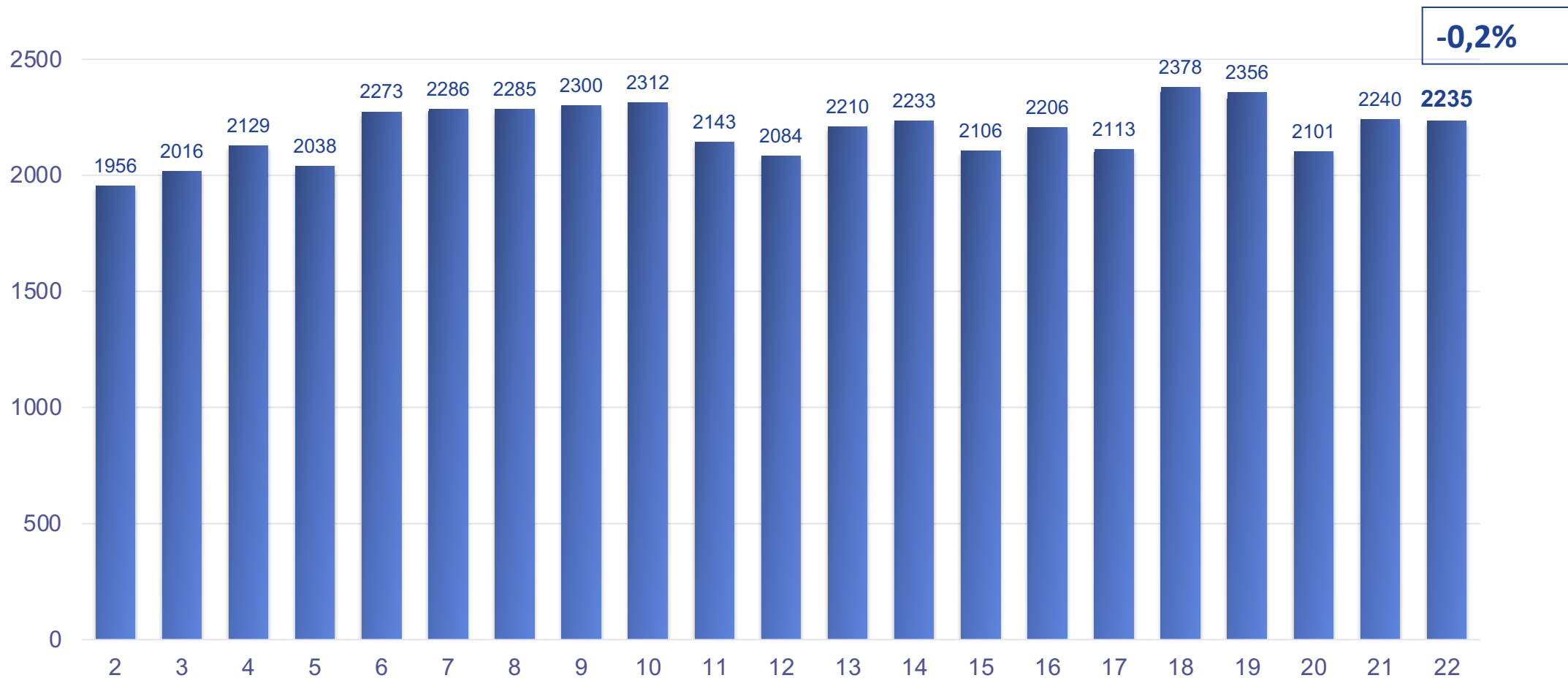


HEMODIALYSIS

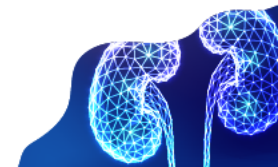
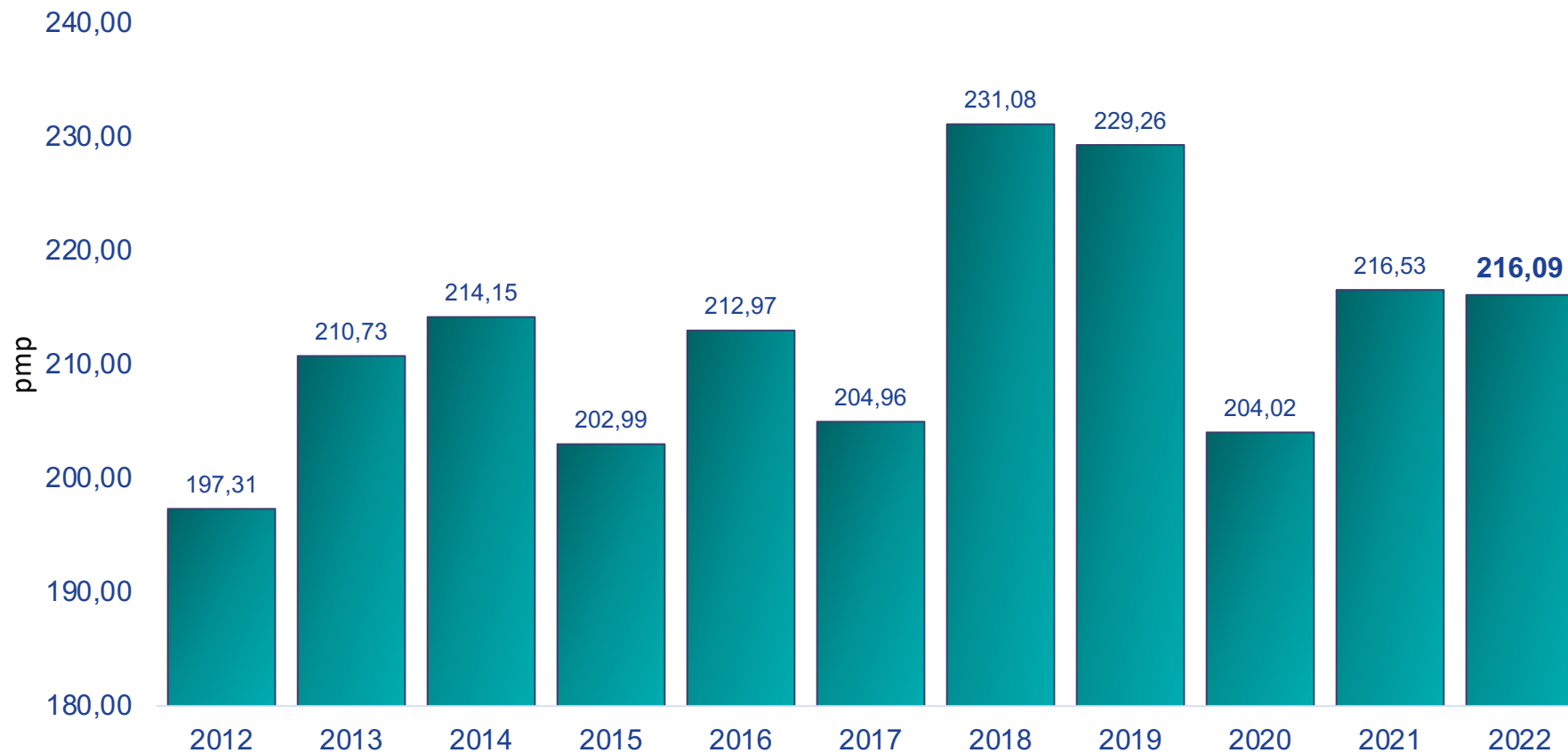
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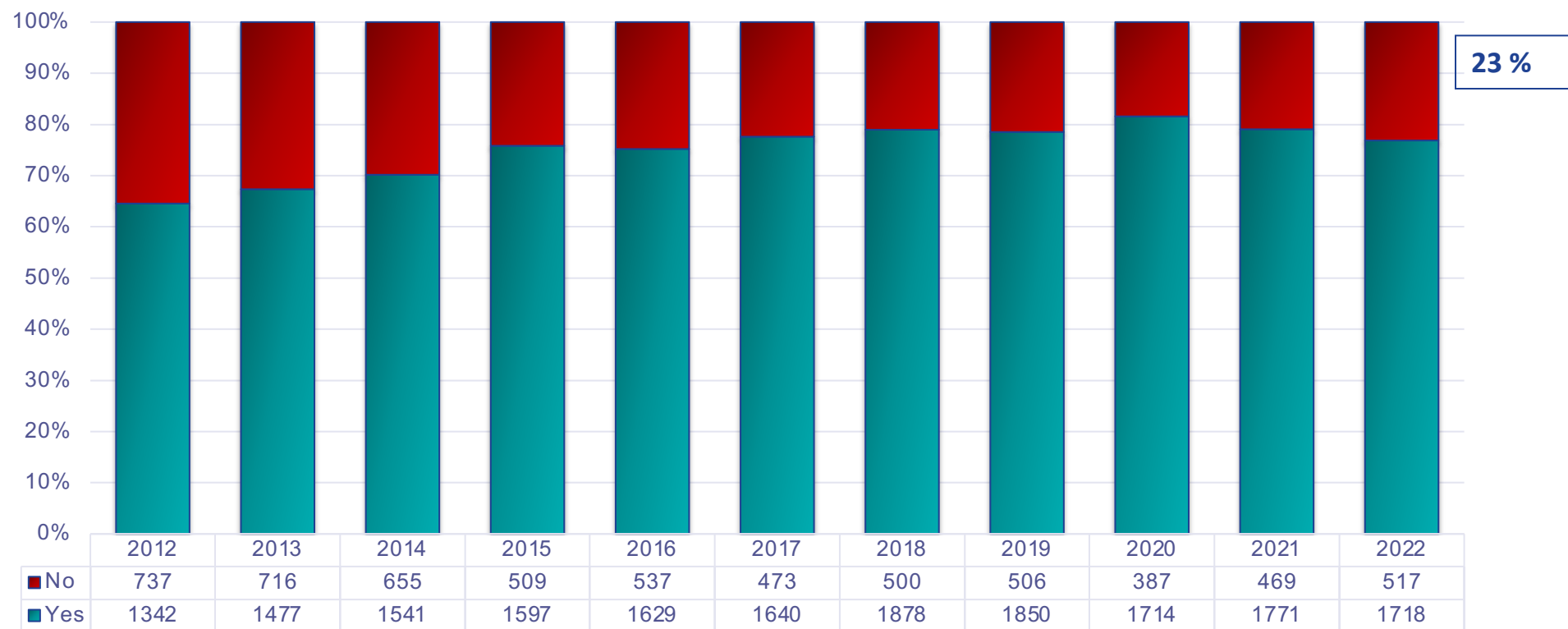
New patients accepted for hemodialysis 2002 - 2022



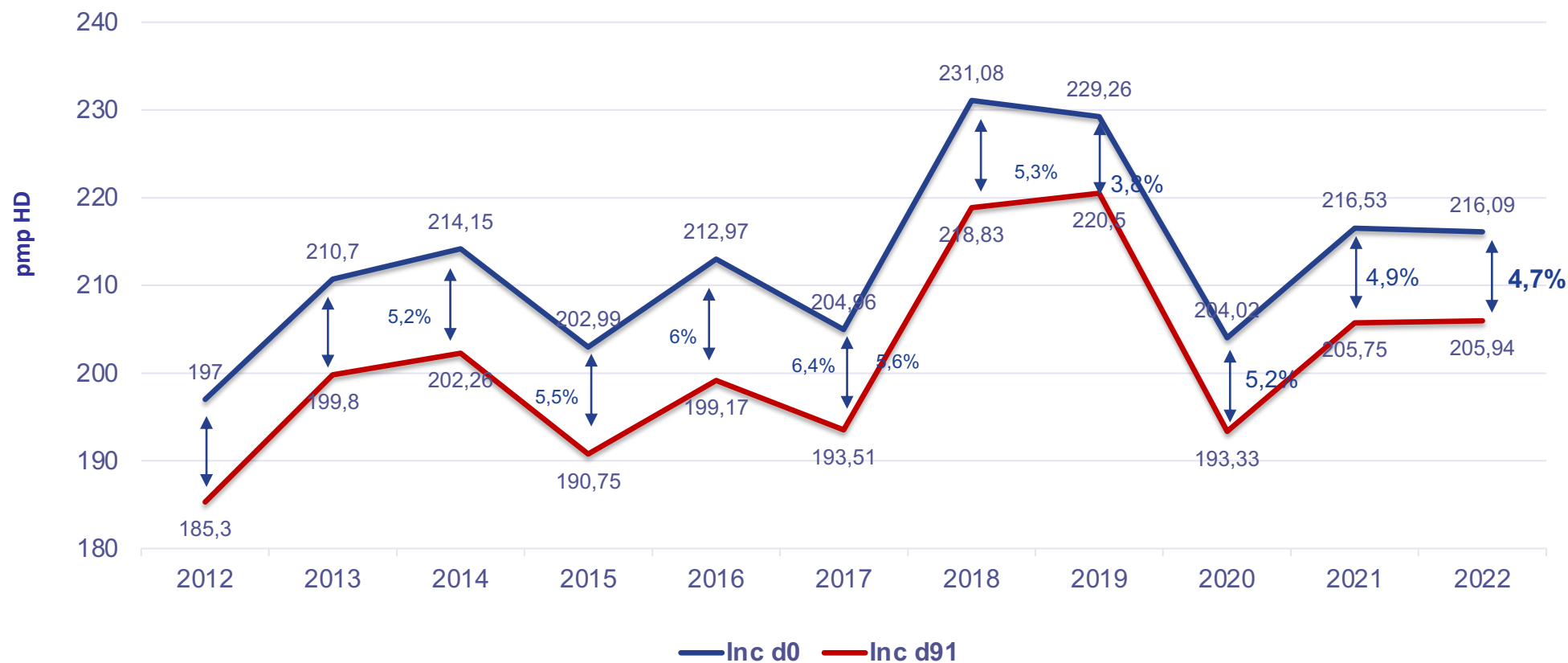
Incident patients accepted for hemodialysis *per million population 2012 - 2022*



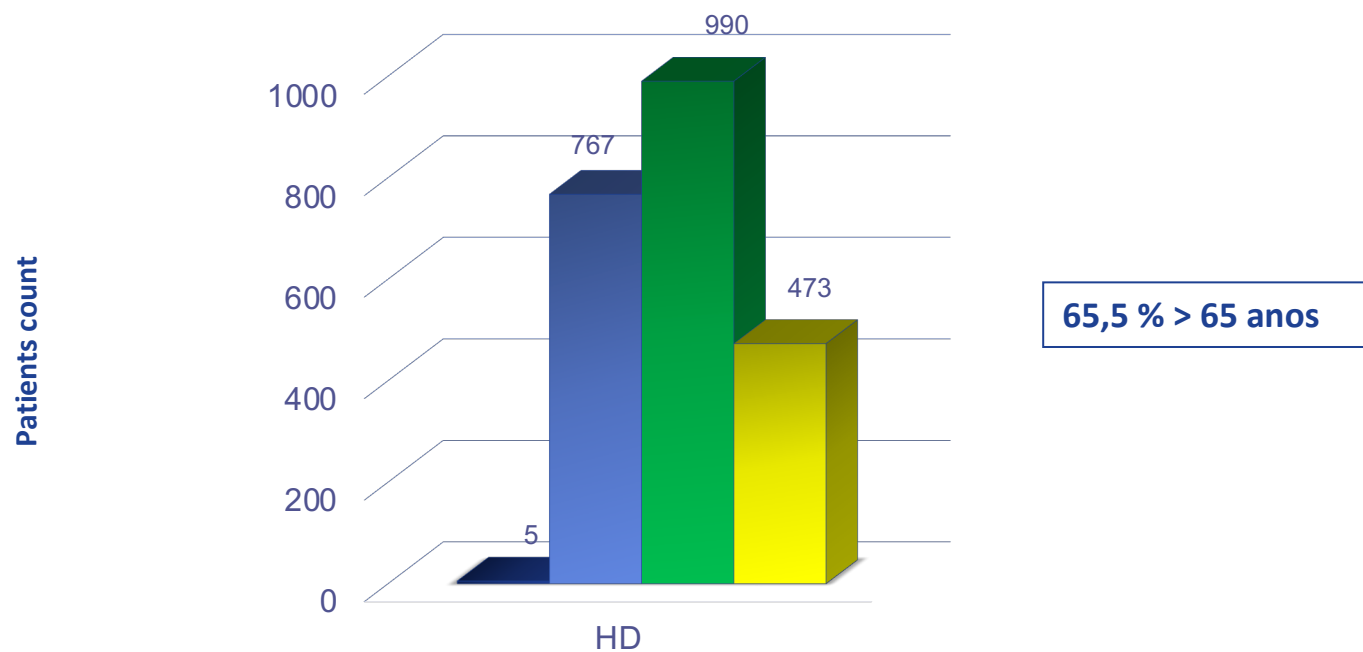
Previous follow-up by nephrology (> 3 months) HD patients 2012 – 2022



Incident patients accepted for hemodialysis Day 0 and day 91, 2012-2022



Patients accepted for hemodialysis *by age group, during 2022*



■ < 18 years old (0,2%)

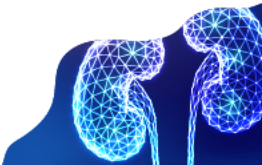
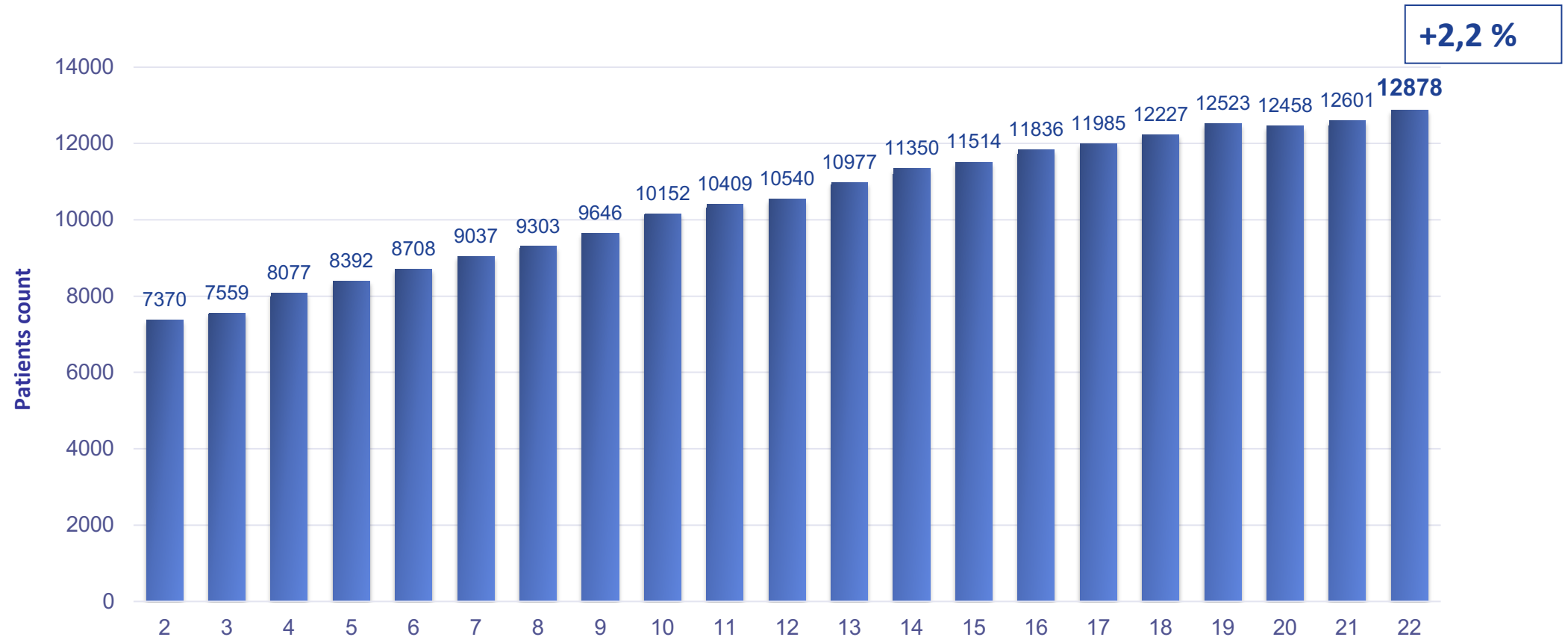
■ 18 a 65 years old (34,3%)

■ 65 a 80 years old (44,3%)

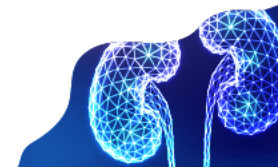
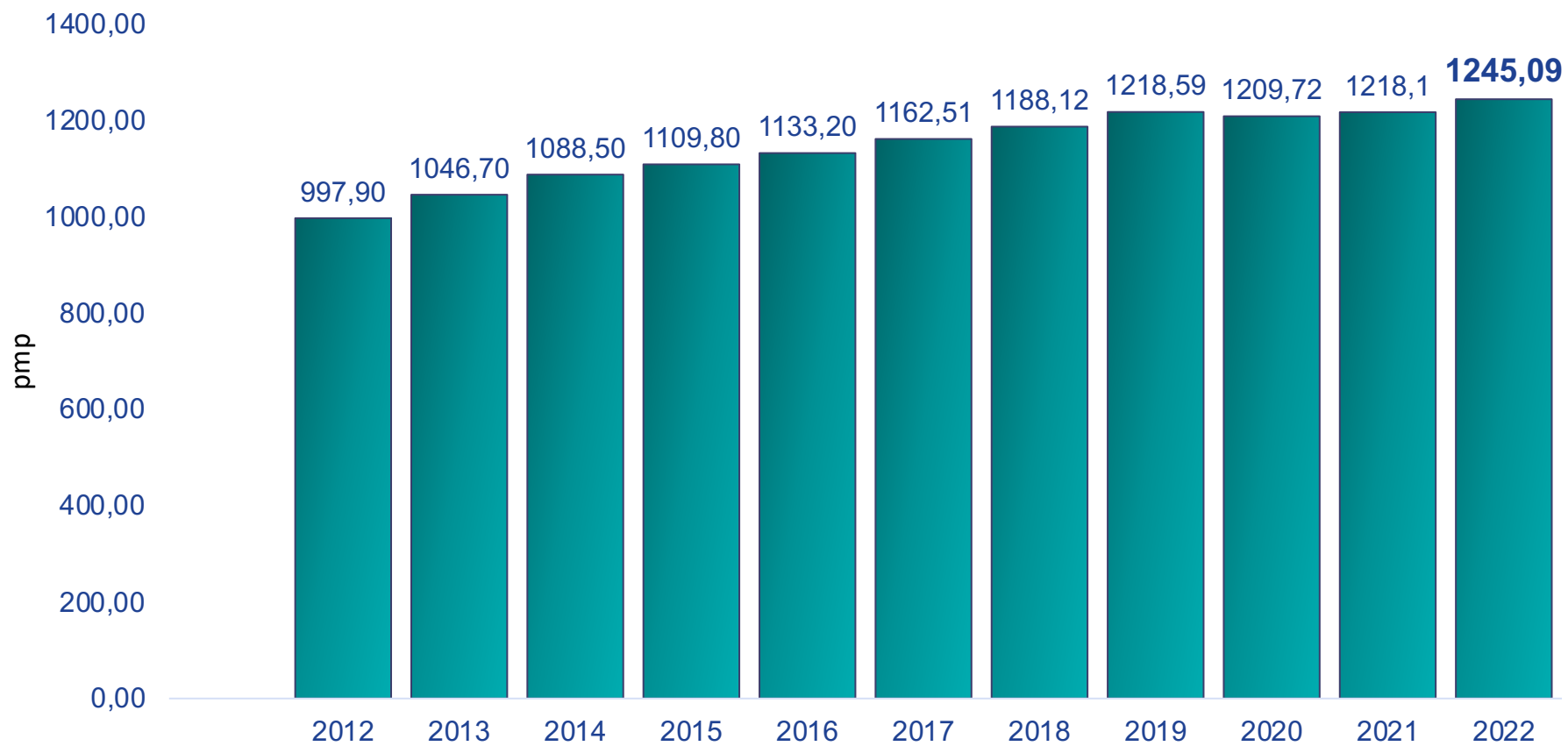
■ >80 years old (21,2%)



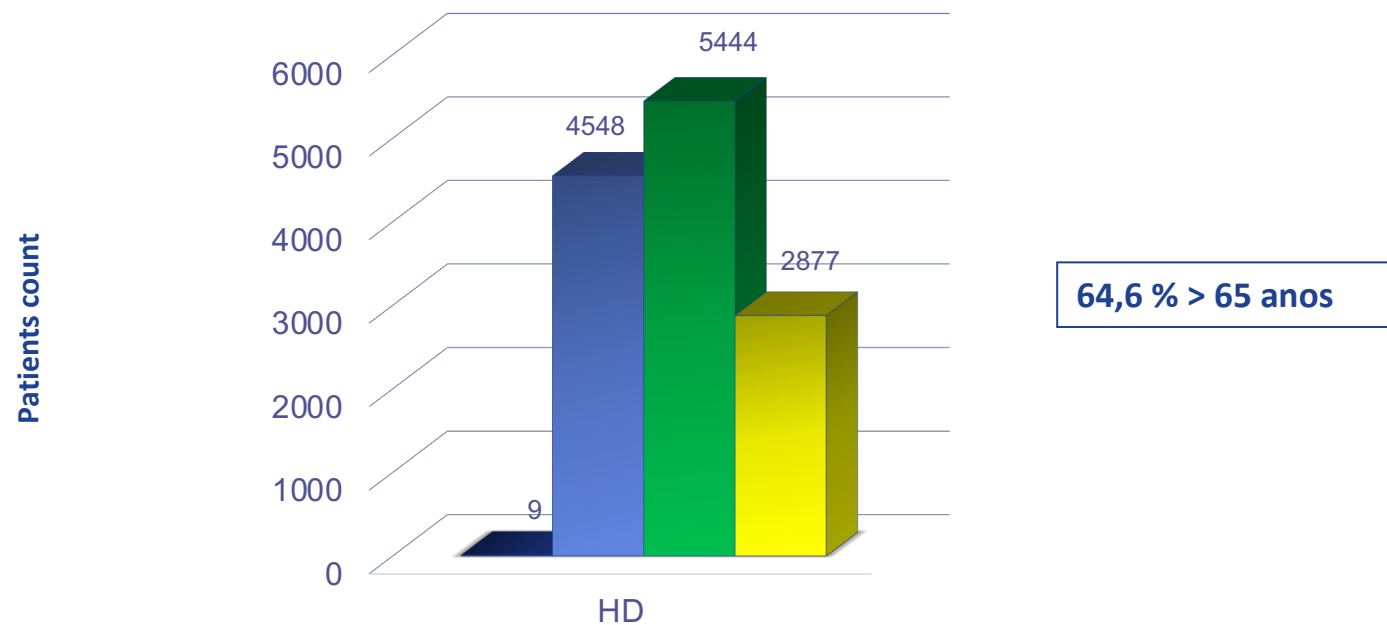
Patients treated by hemodialysis 31st of December each year, 2002 – 2022



Prevalent patients treated by hemodialysis *per million population 2012 - 2022*



Patients treated by hemodialysis by age group, 31st December 2022

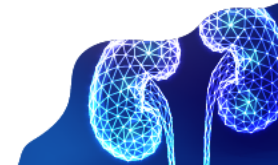


■ < 18 years old (0,1%)

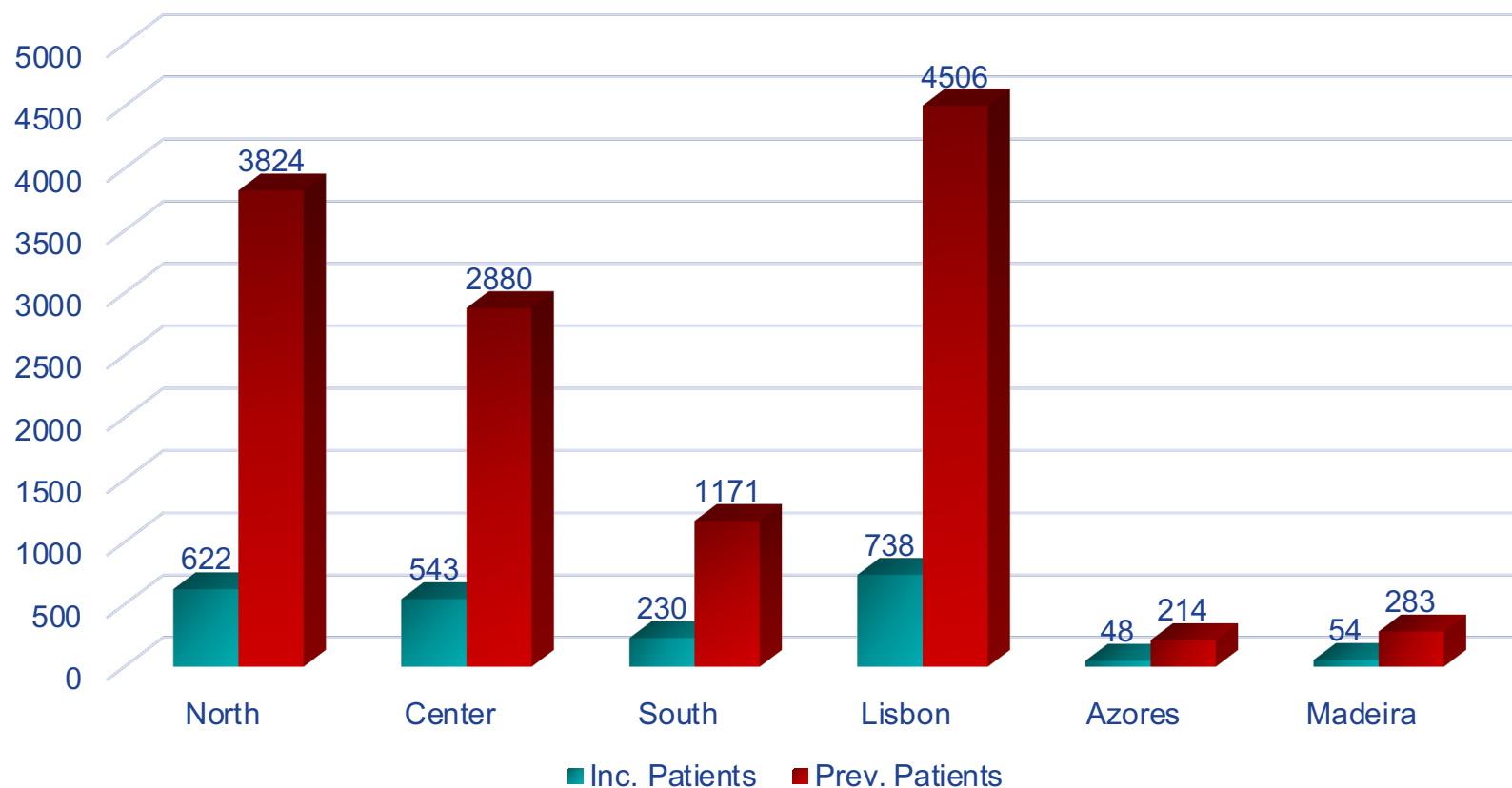
■ 18 a 65 years old (35,3%)

■ 65 a 80 years old (42,3%)

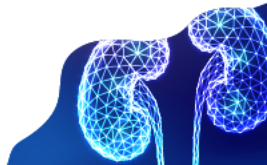
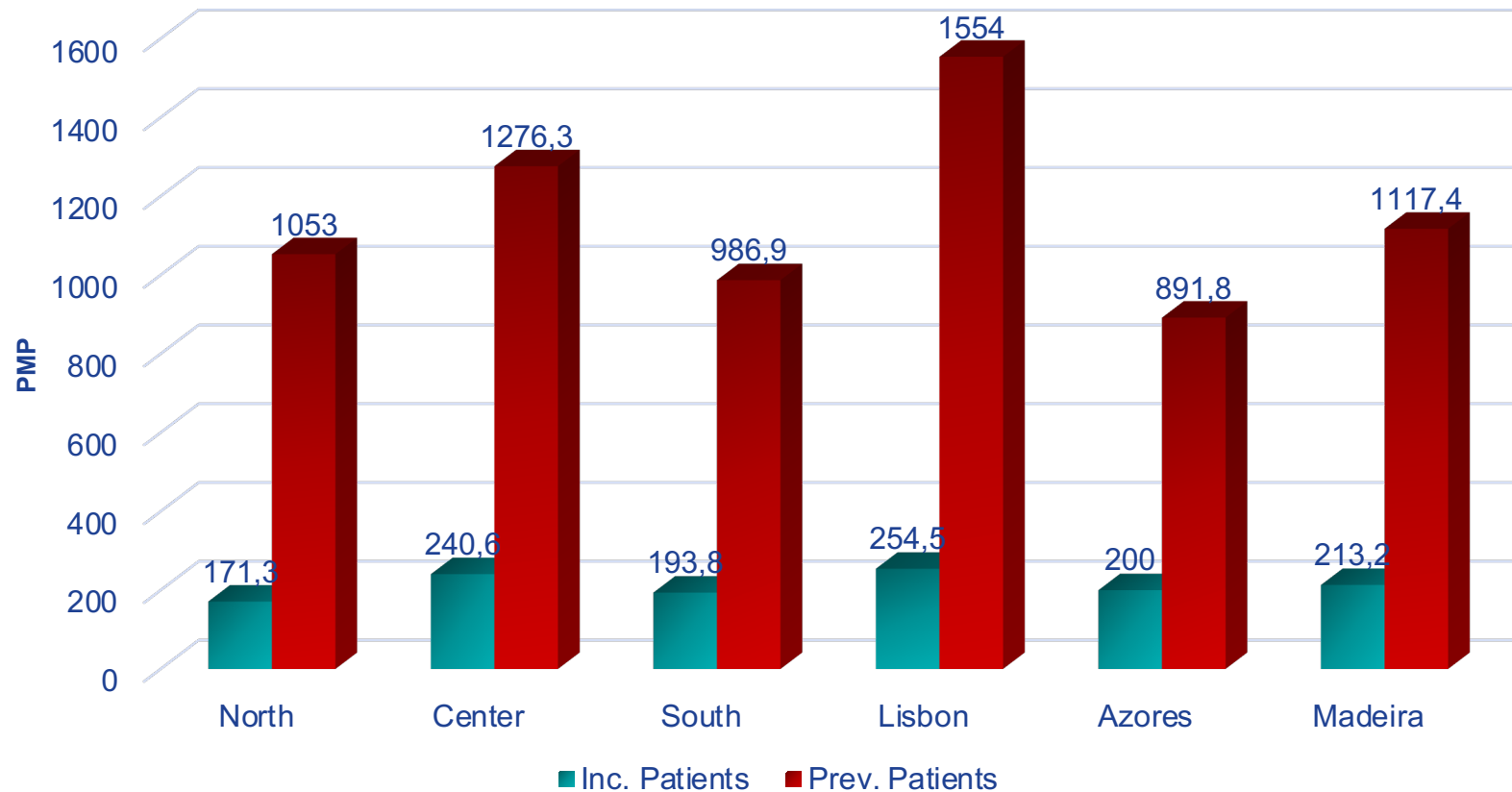
■ > 80 years old (22,3%)



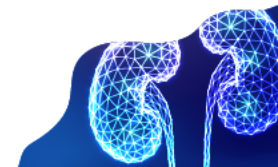
Incident and prevalent patients treated by hemodialysis by country region (NUTS II), 2022



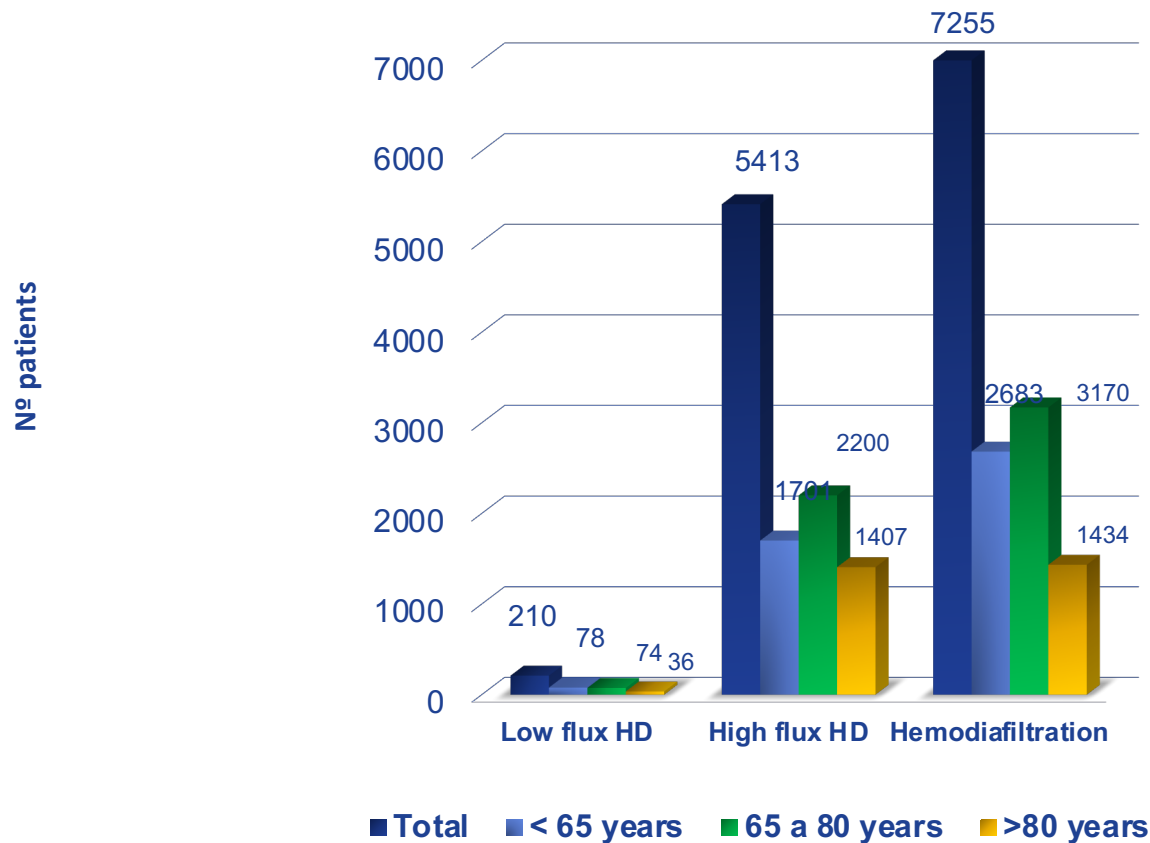
Incident and prevalent treated by hemodialysis *per million population* by country region (NUTS II), 2022



Incident and prevalent patients treated by hemodialysis *per million population by age group, 2022*



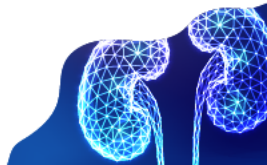
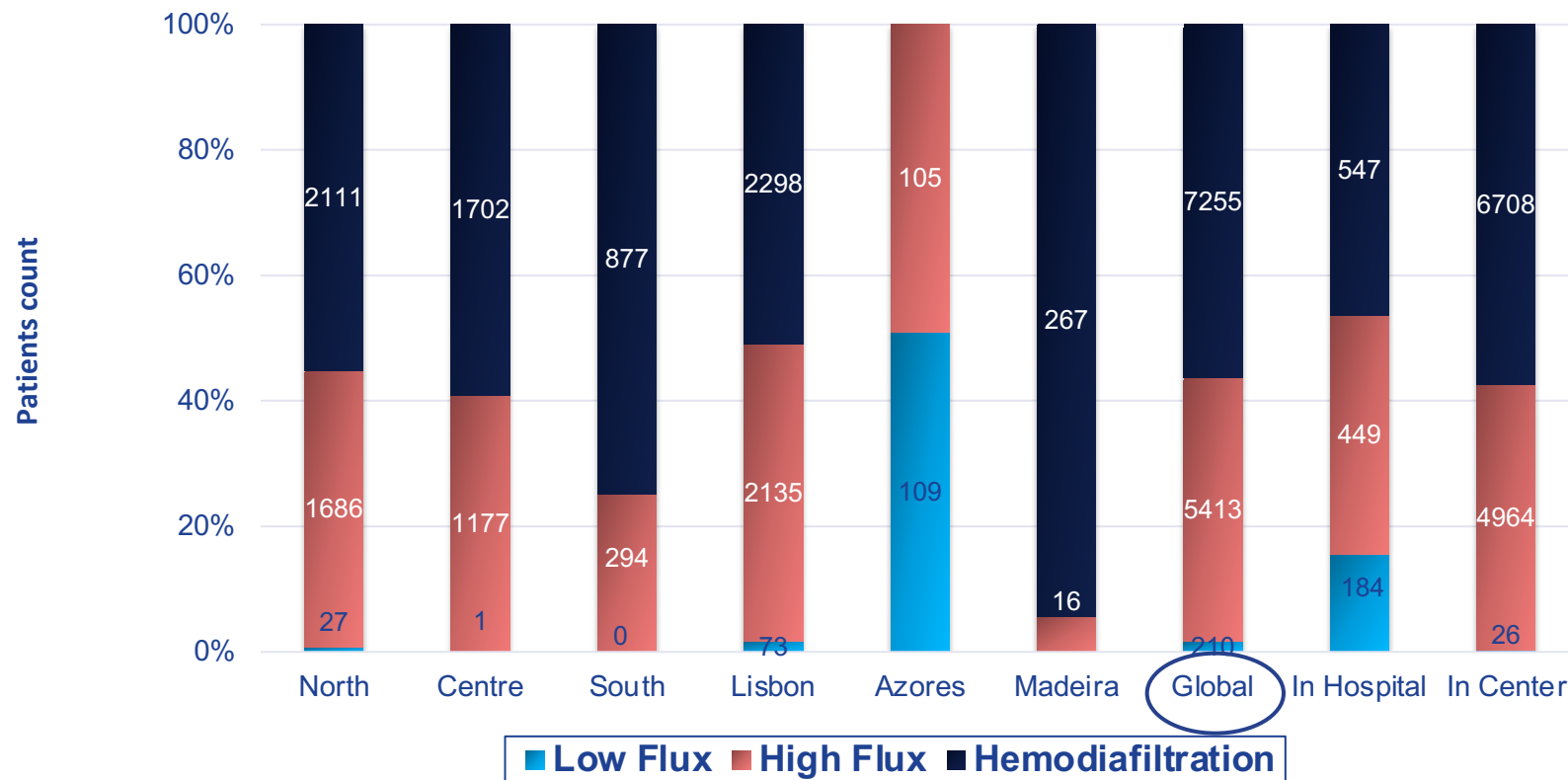
Patients treated by hemodialysis *distribution by techniques in each age group, 31st of December 2022*



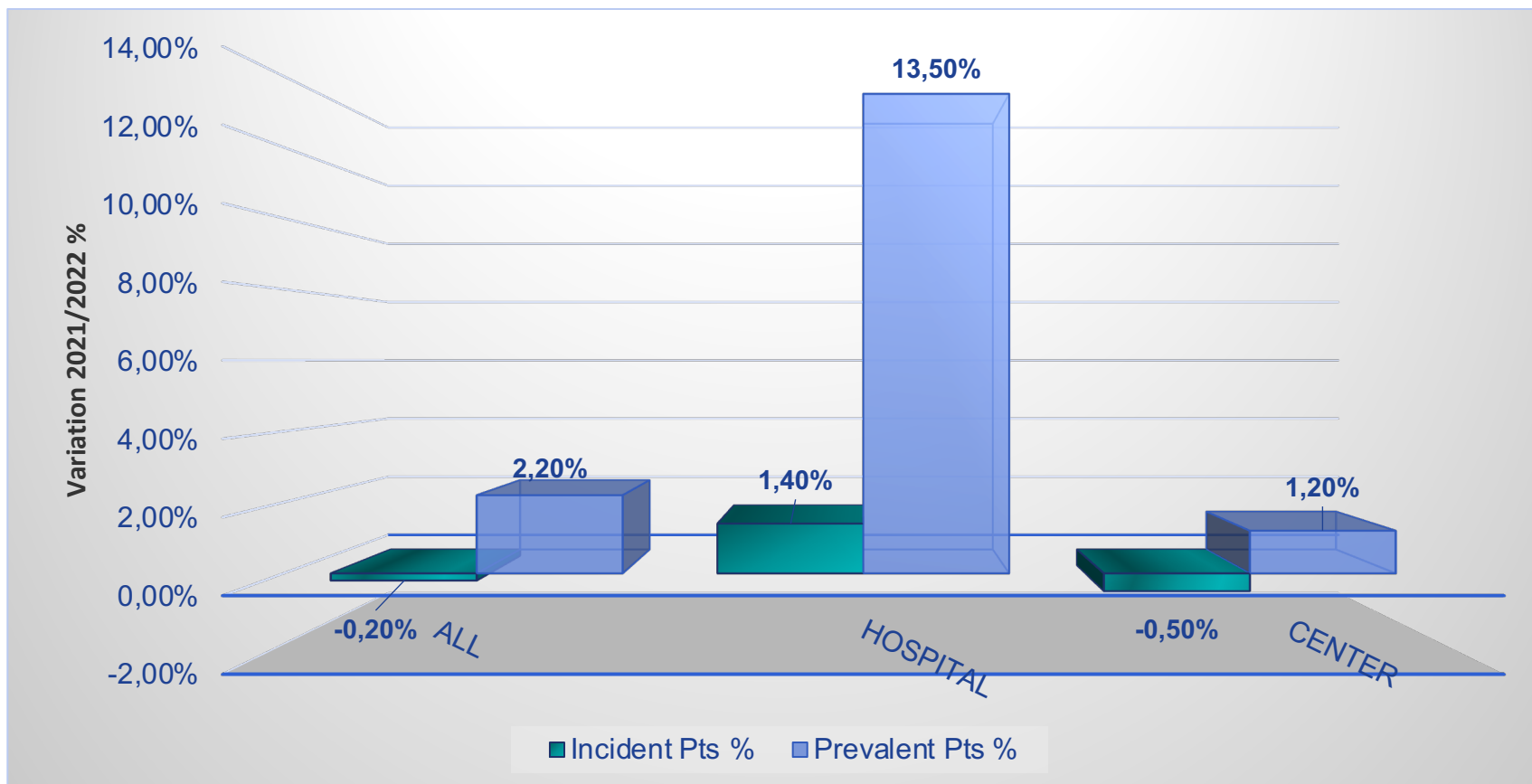
N = 12878
Hemodiafiltration – 56,3%
low flux 1,6 % (1,5 % in 2021)



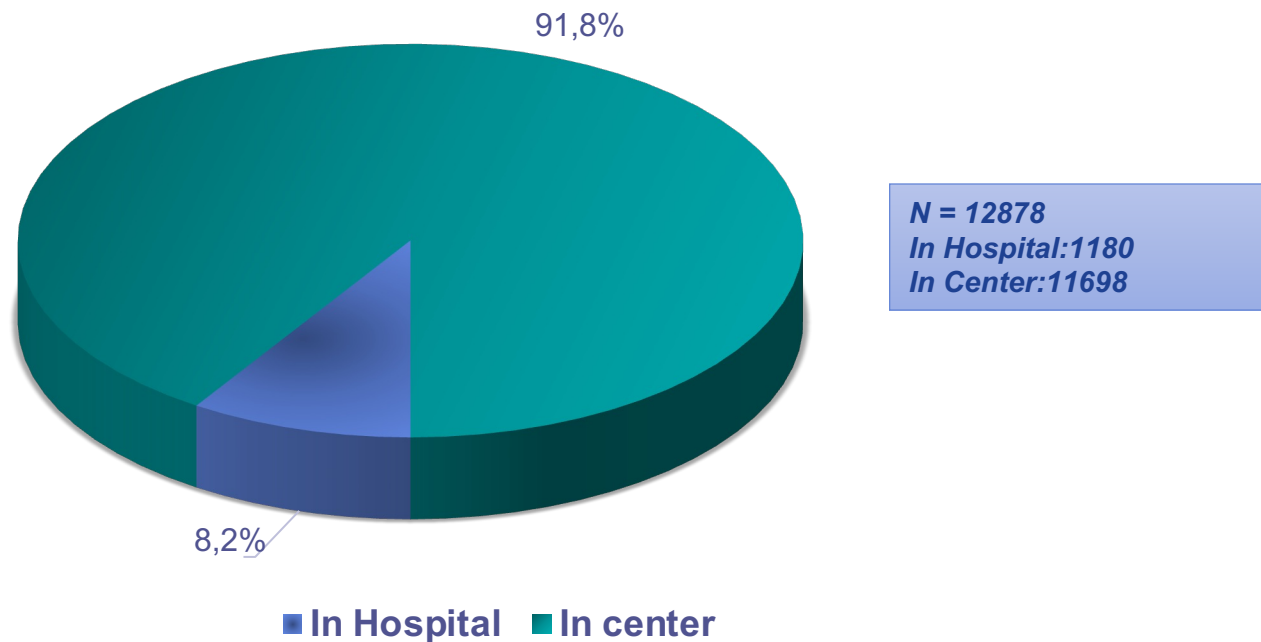
Patients treated by hemodialysis *distribution by techniques by region and facility type, 31st Dec. 2022*



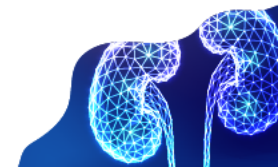
Hemodialysis growth 2021 vs 2022 (%) 31st of December each year



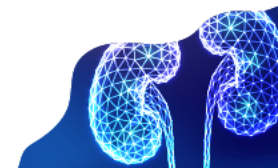
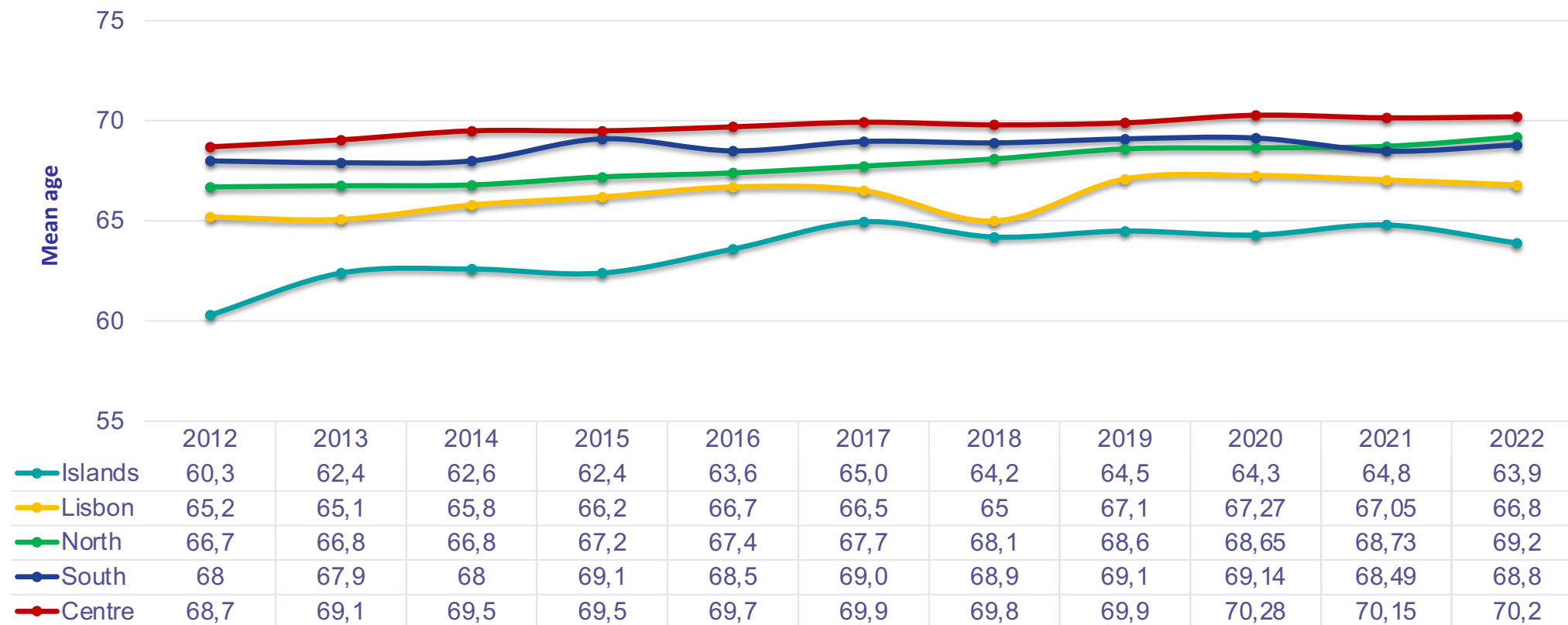
Distribution of hemodialysis patients by type of dialysis facility 31st of December 2022



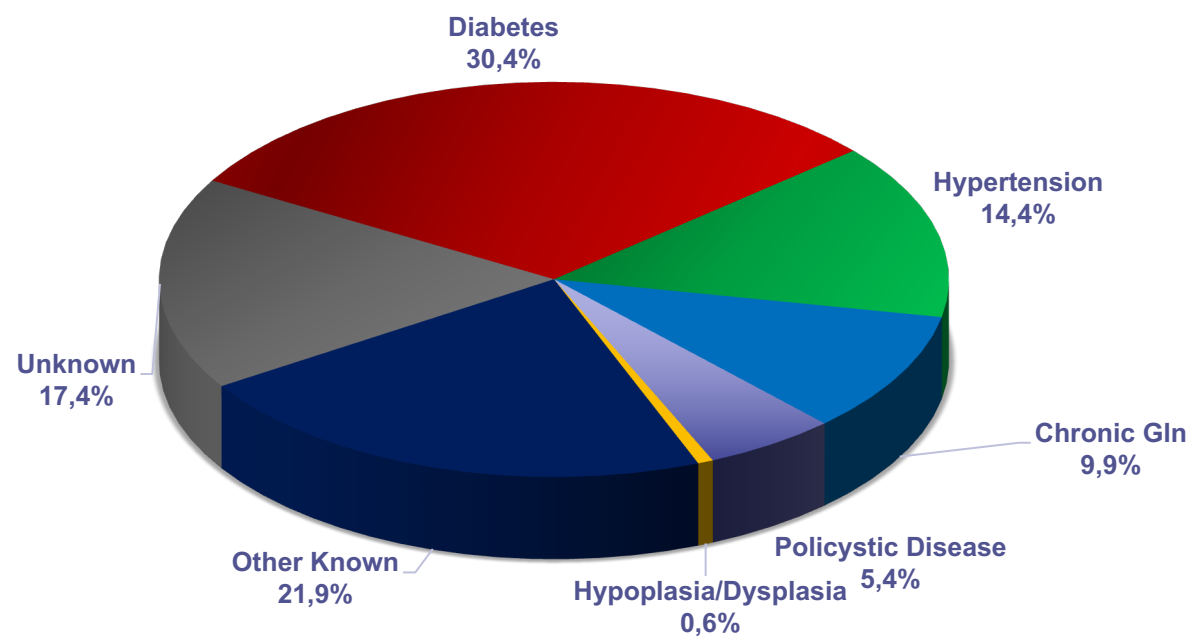
Mean Age of patients treated by hemodialysis *31st of December 2012 – 2022*



Mean Age of patients treated by hemodialysis by country region, 31st of December 2012 – 2022



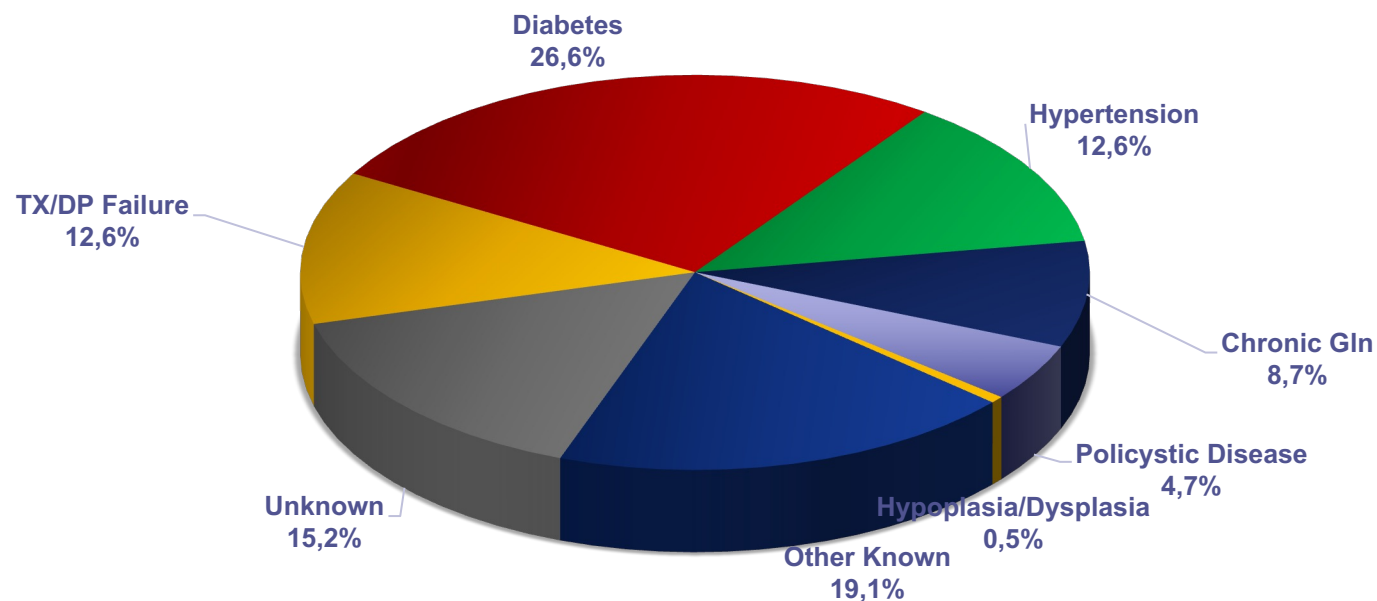
Primary renal disease of patients accepted for hemodialysis during 2022



N = 2235
20 not available



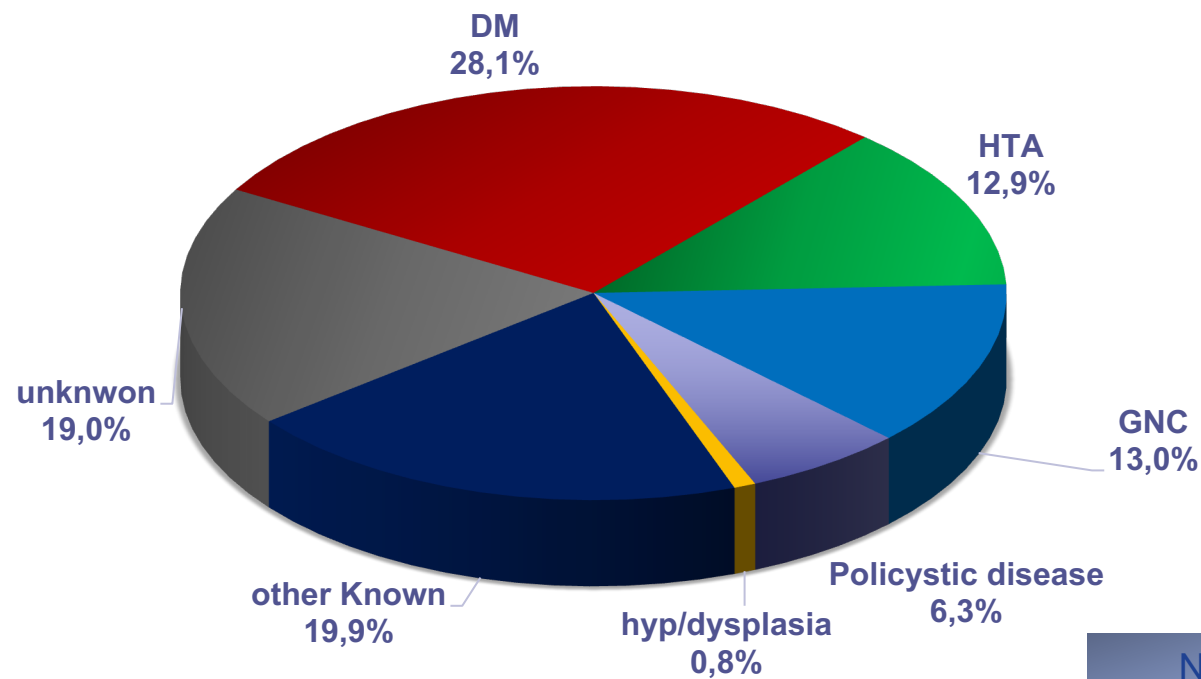
Etiology of All patients accepted for hemodialysis during 2022



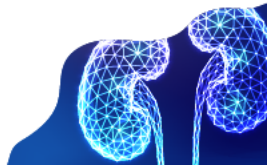
N = 2553
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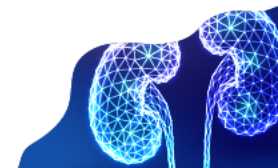
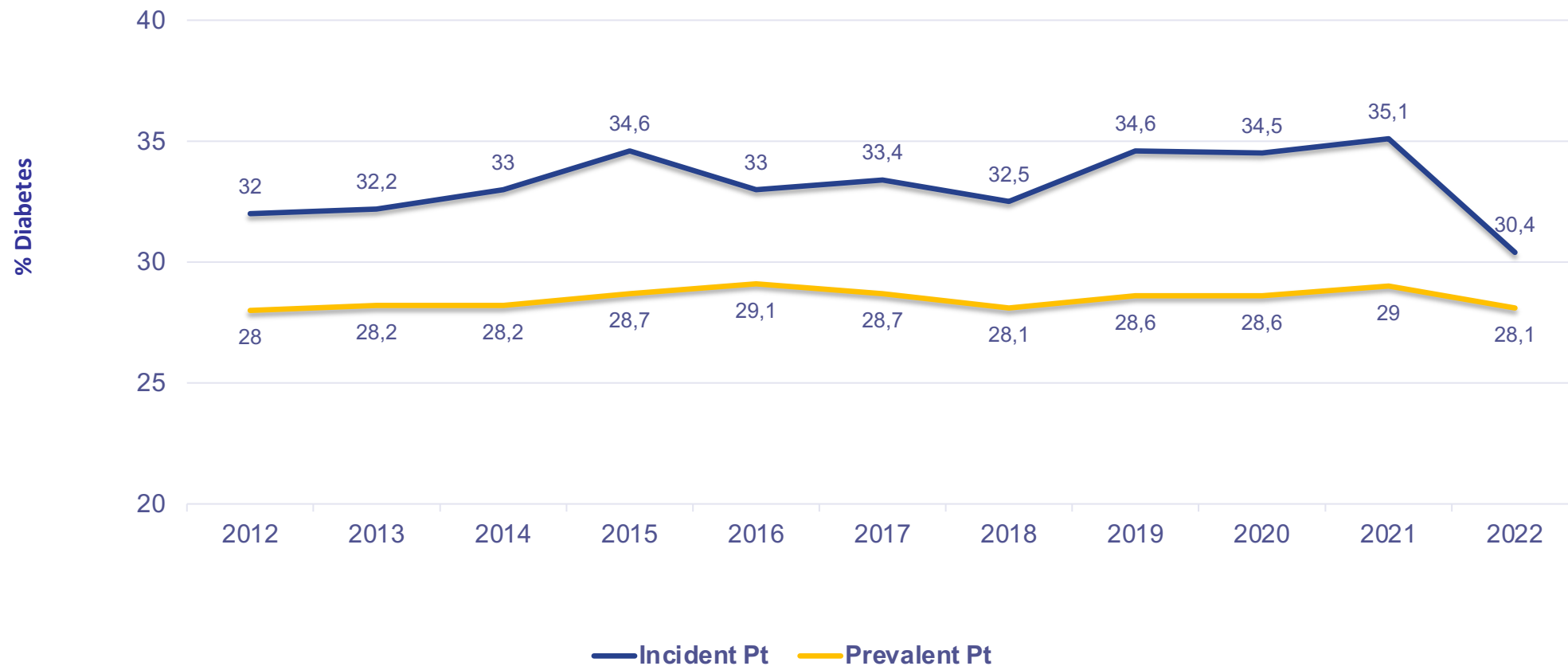
Primary renal disease of prevalent hemodialysis patients *31st December 2022*



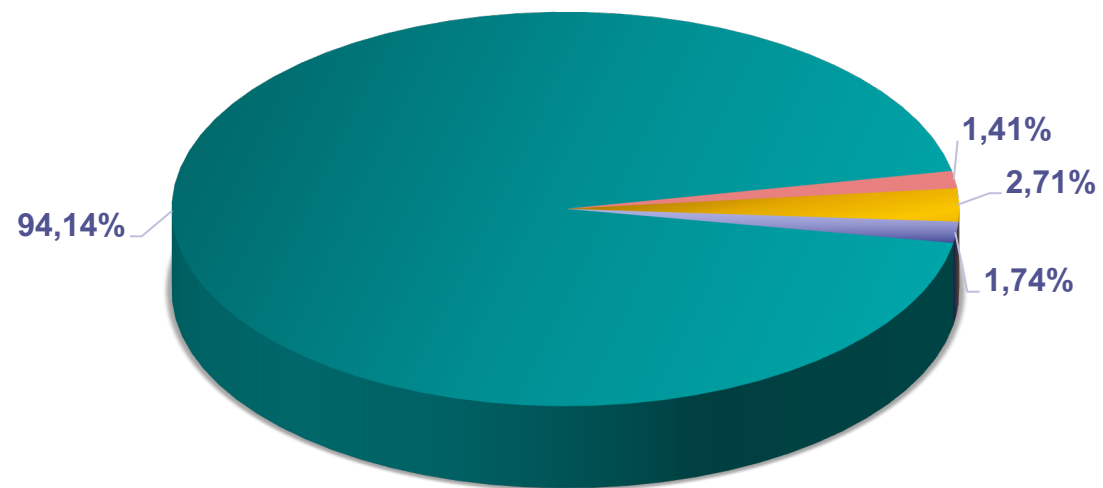
N= 12878
25 not available



Diabetes as primary renal disease in HD patients Incident and prevalent (%) 2012 - 2022

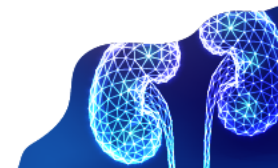


Viral status in HD prevalent patients 31st December 2022

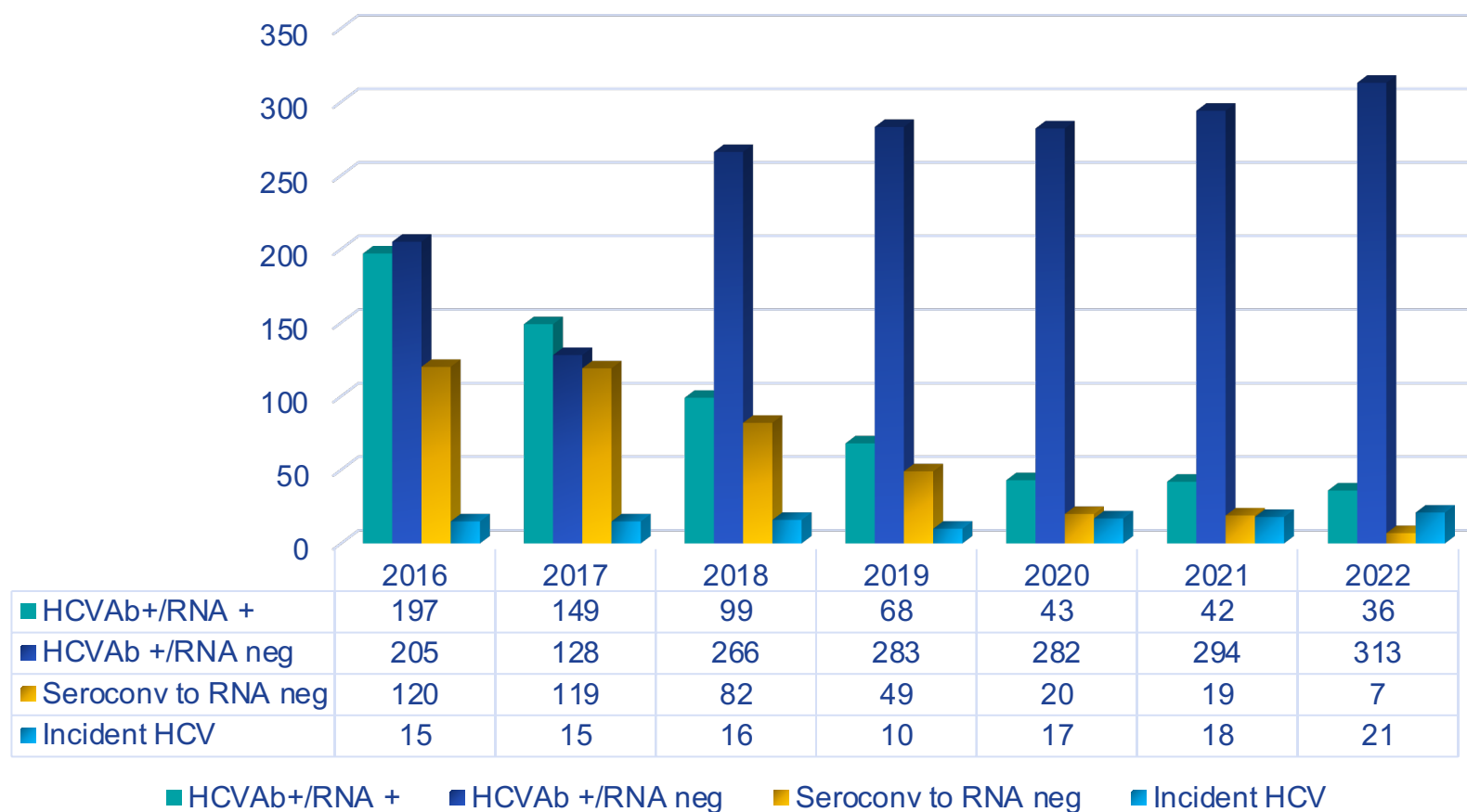


■ Neg ■ Hbs Ag + ■ HCV Ab + ■ HIV Ab +

N = 12878



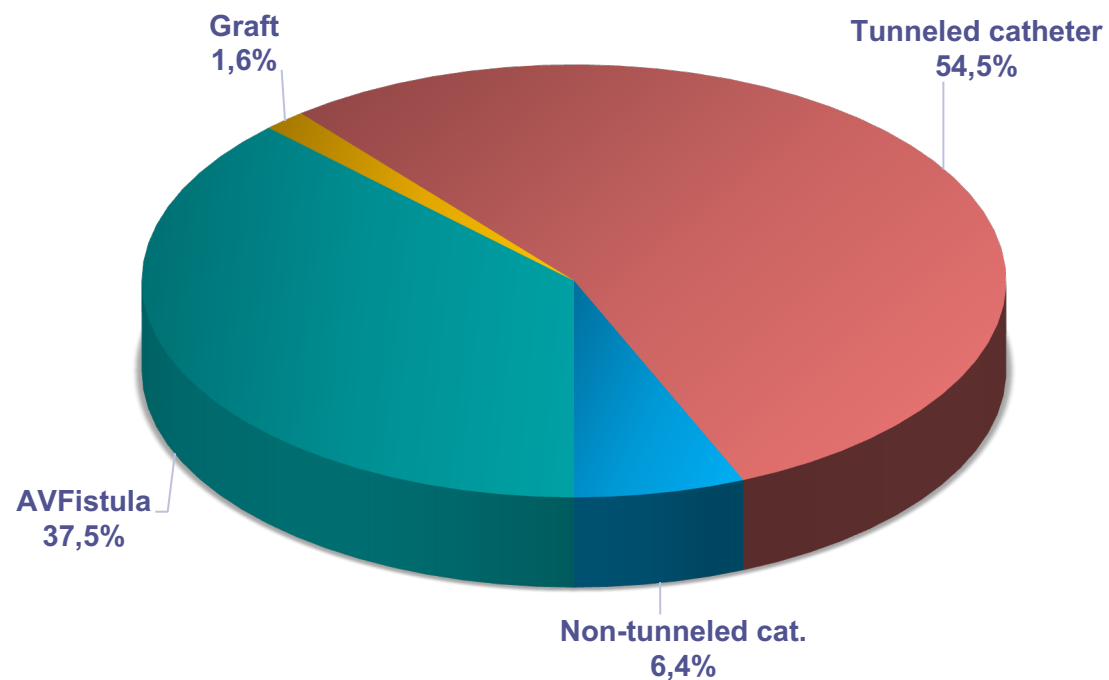
Hepatitis C viral status in HD prevalent pts 31st December 2016 – 2022



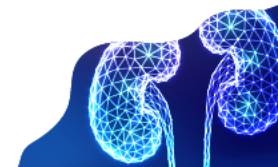
Vascular access



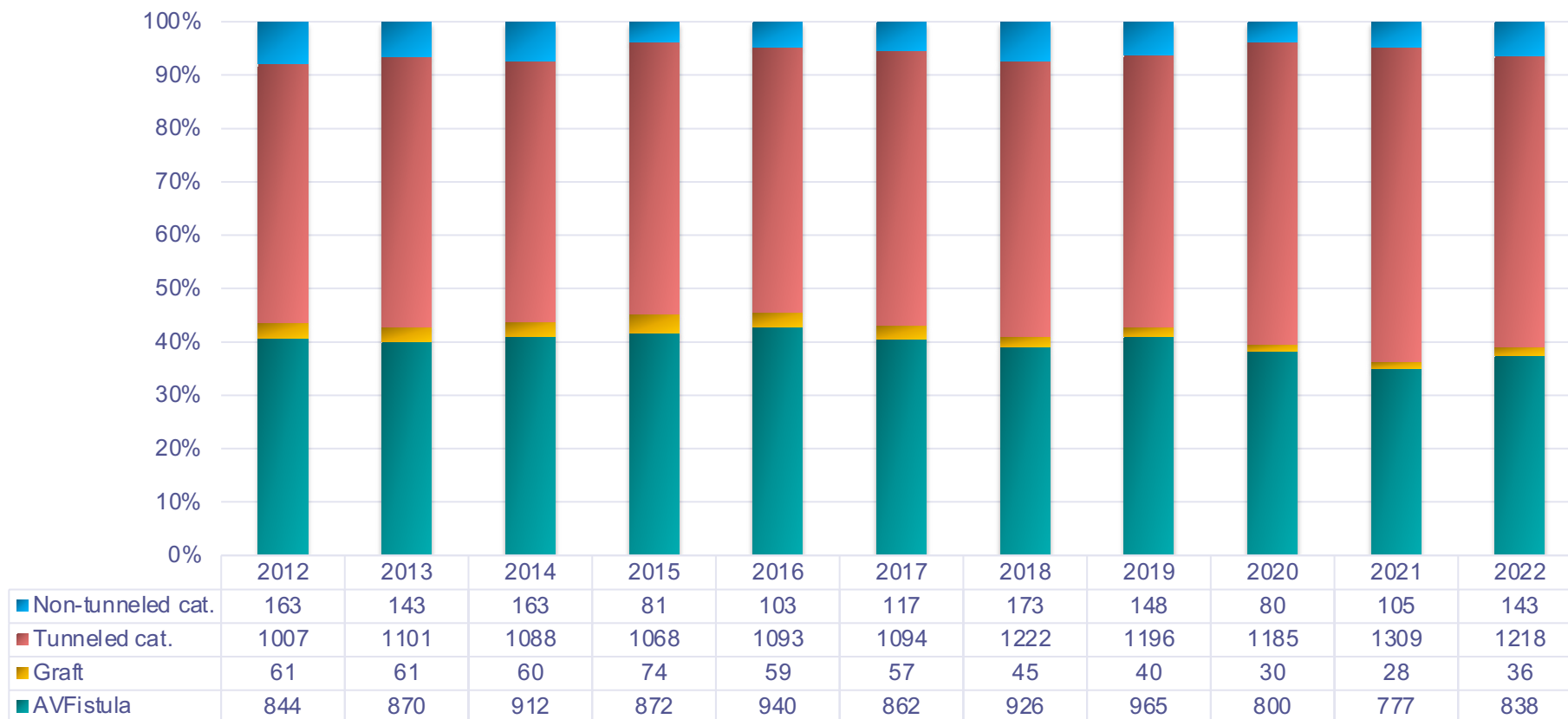
Vascular access of HD incident patients during 2022



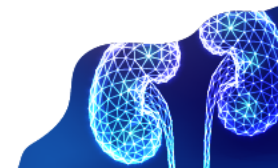
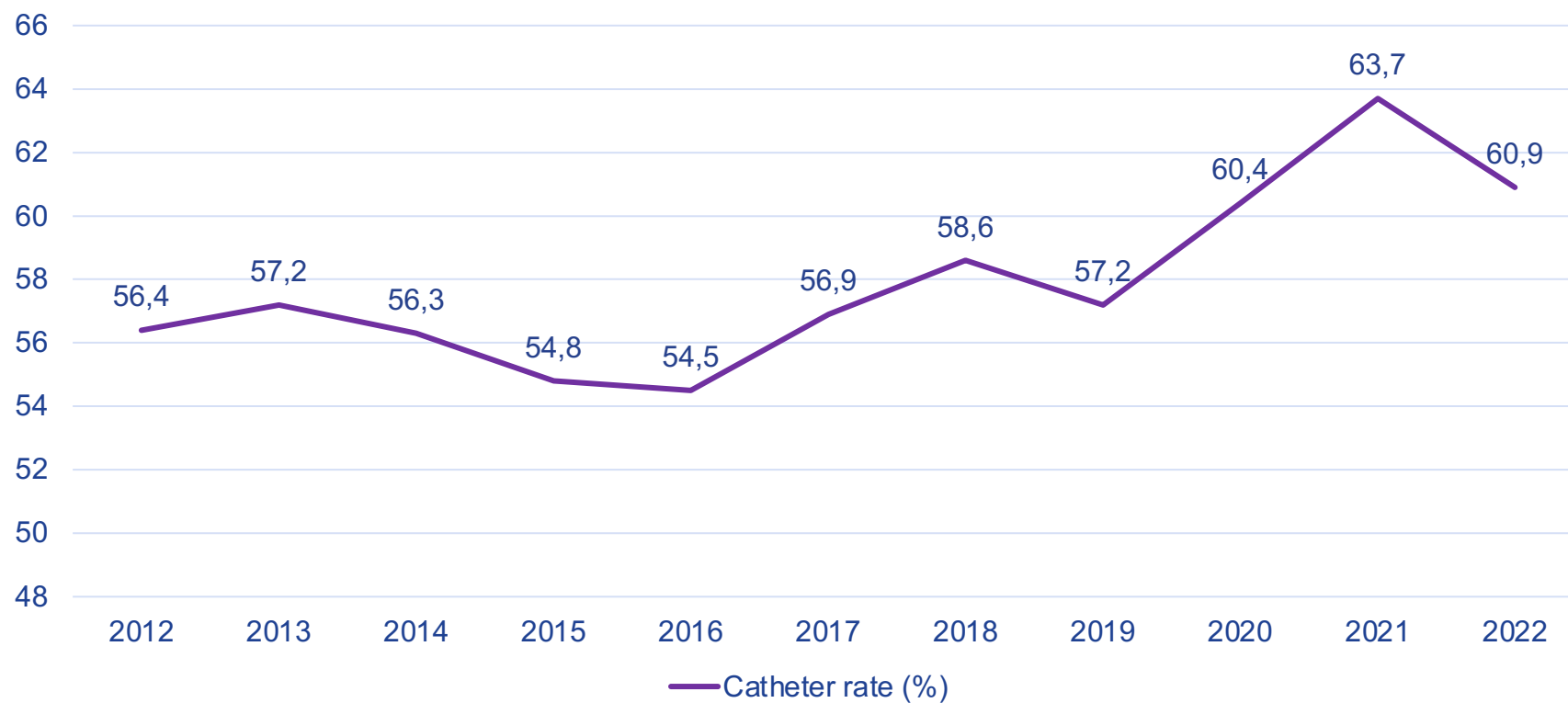
N = 2235



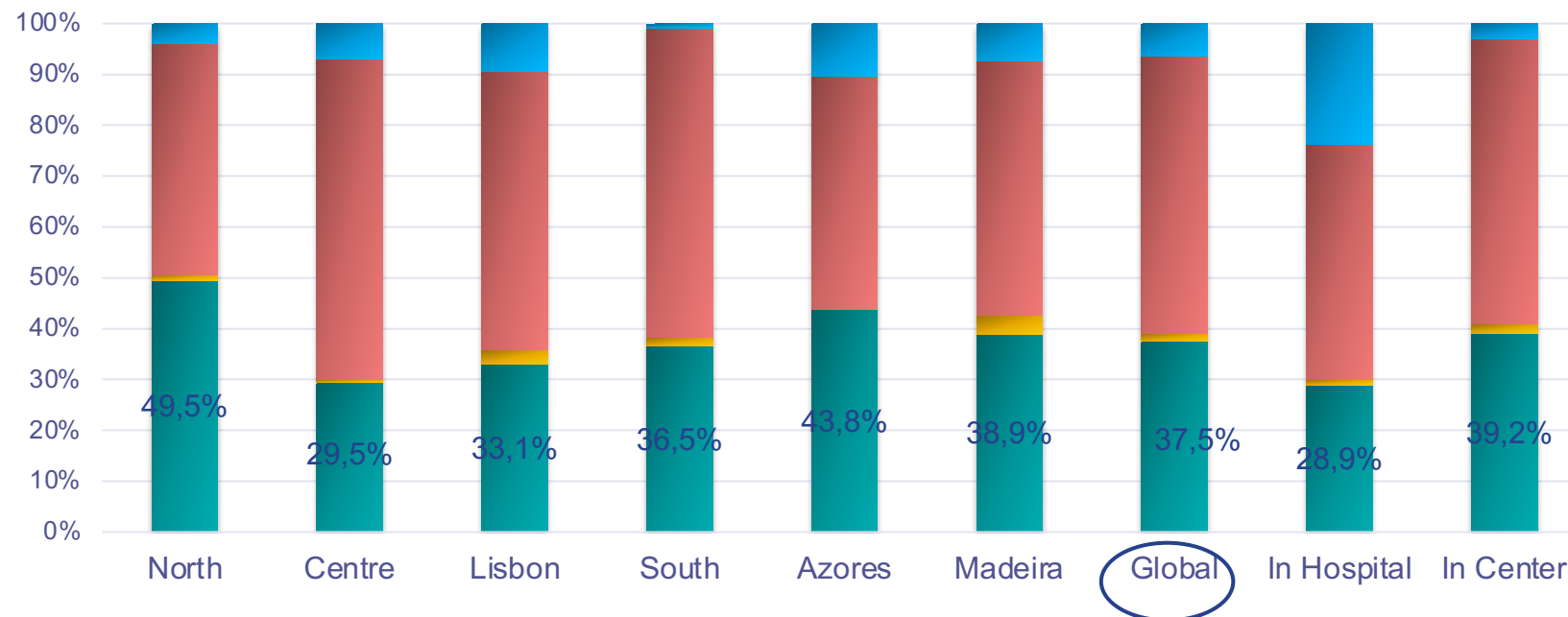
Vascular access of HD incident patients 2012 – 2022



Catheter rate (%) in the first HD session of incident patients 2012 – 2022



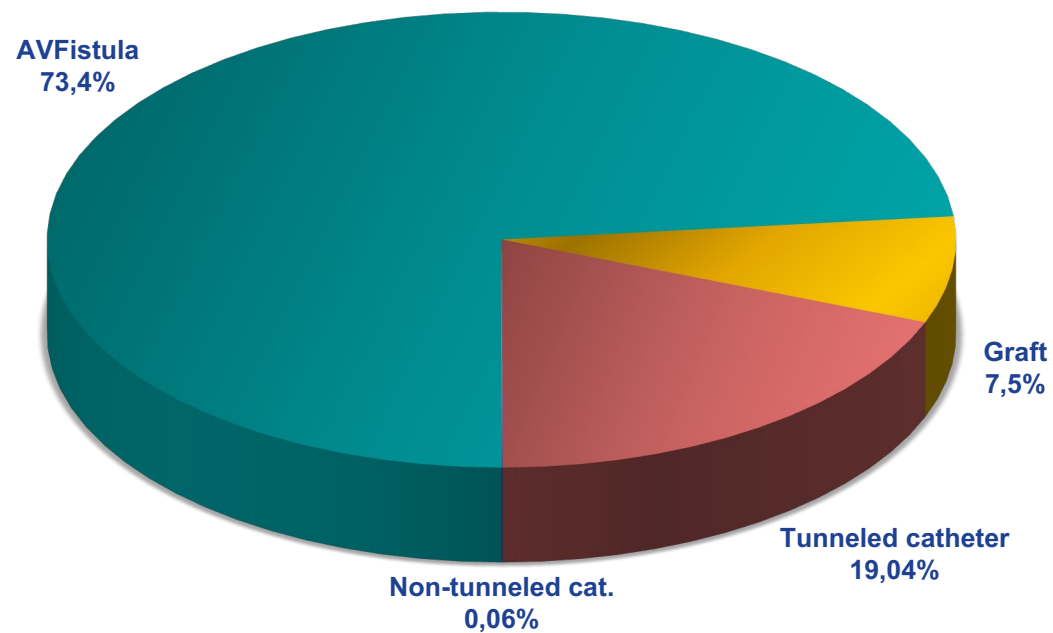
Vascular access of HD incident patients *by country region and facility type*



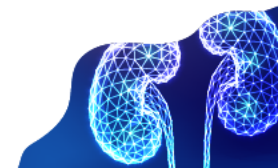
N = 2235



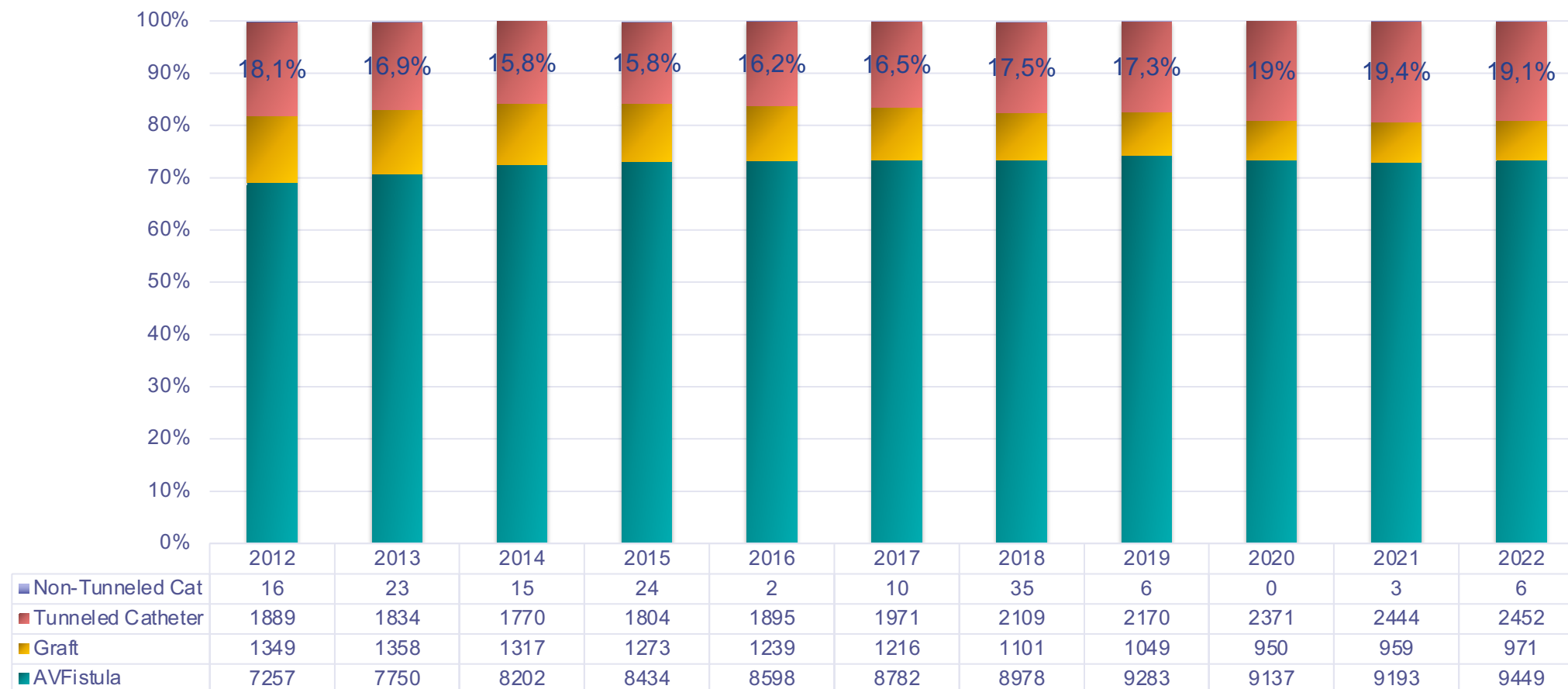
Vascular access of HD prevalent patients 31st December 2022



N = 12878

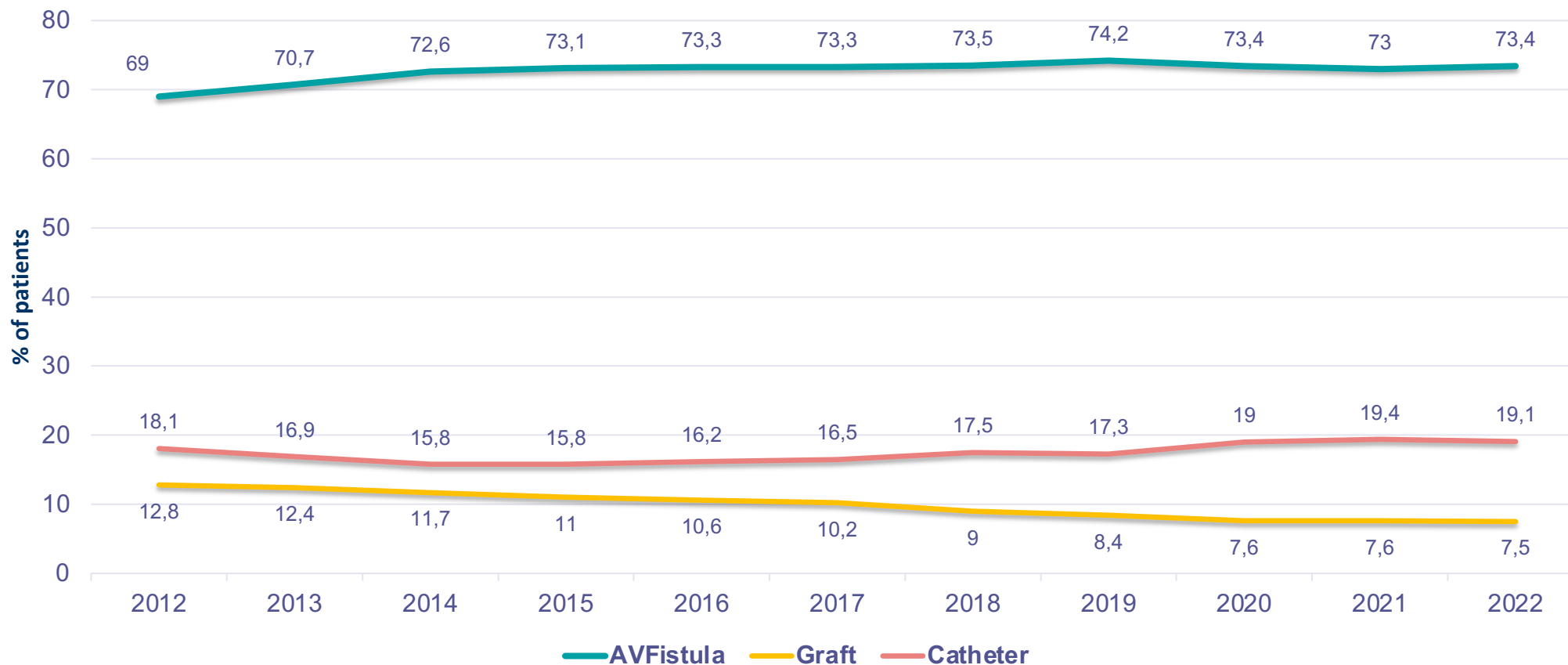


Vascular access of HD prevalent patients 31st December, 2012 - 2022



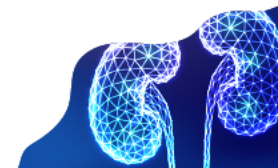
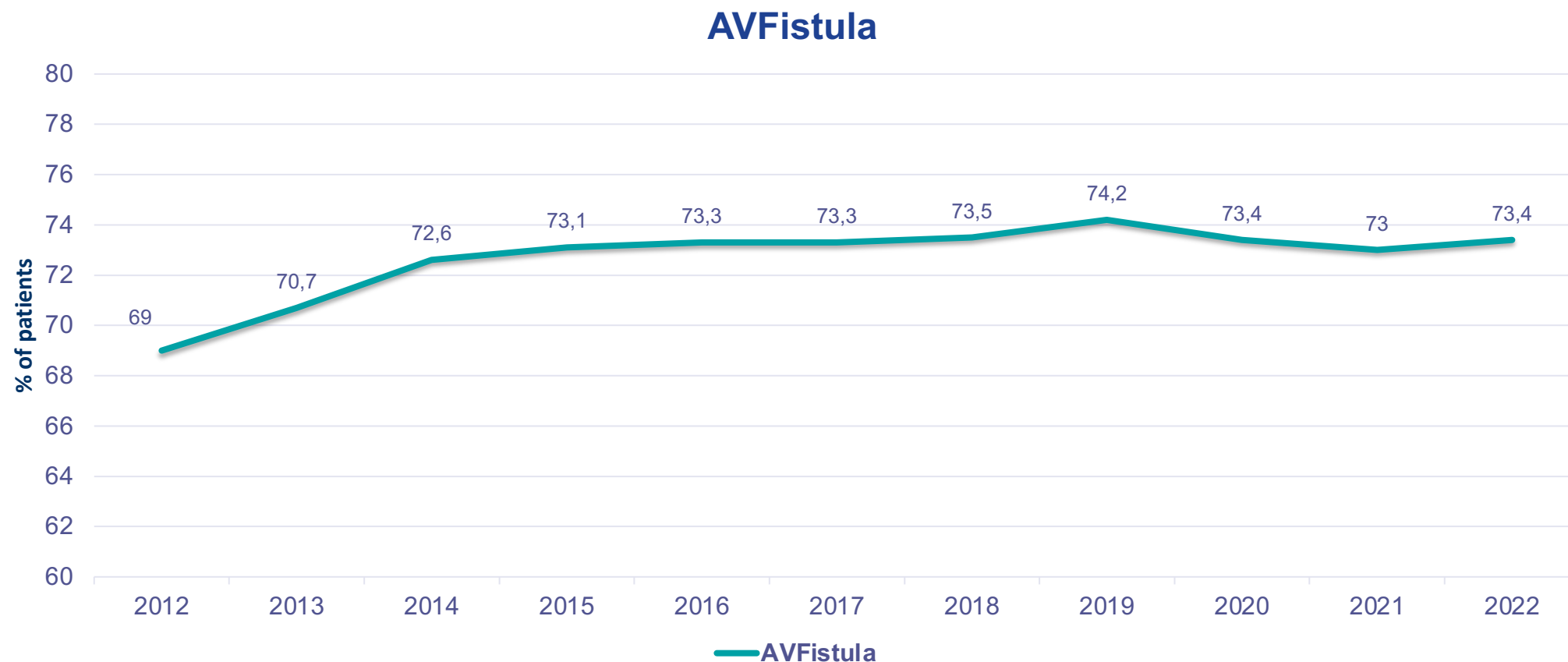
Vascular access of prevalent patients (%)

31st December, 2012 - 2022



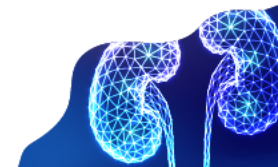
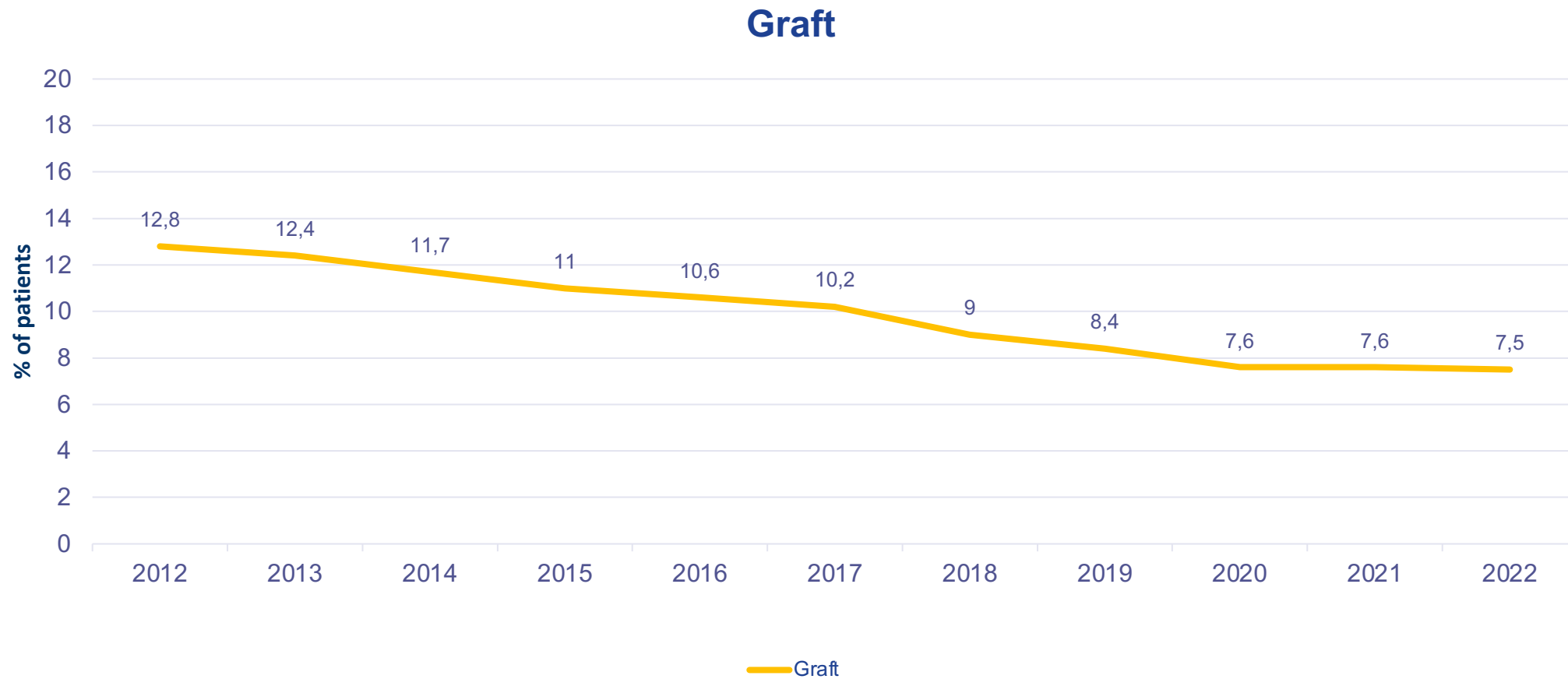
AV Fistula rate of prevalent patients (%)

31st December, 2012 - 2022



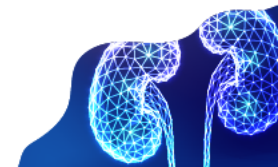
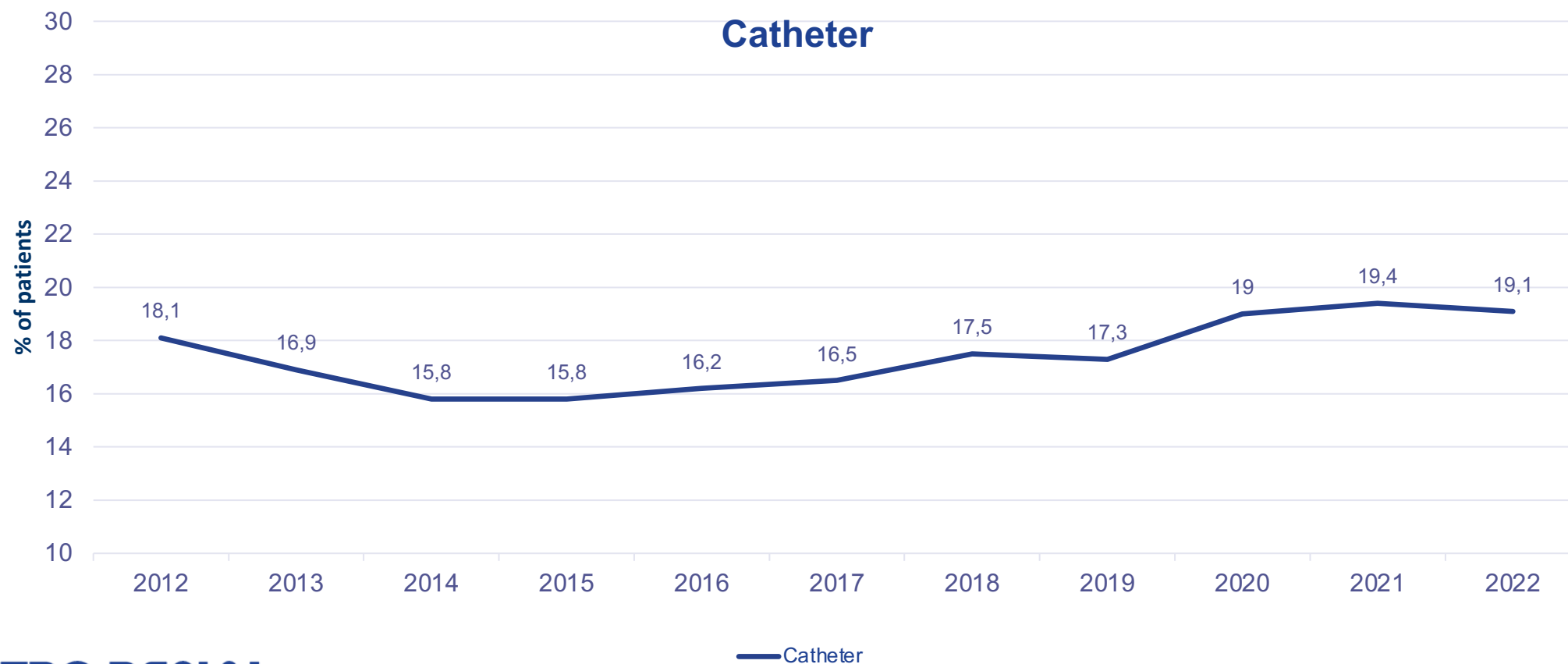
Graft rate of prevalent patients (%)

31st December, 2012 - 2022

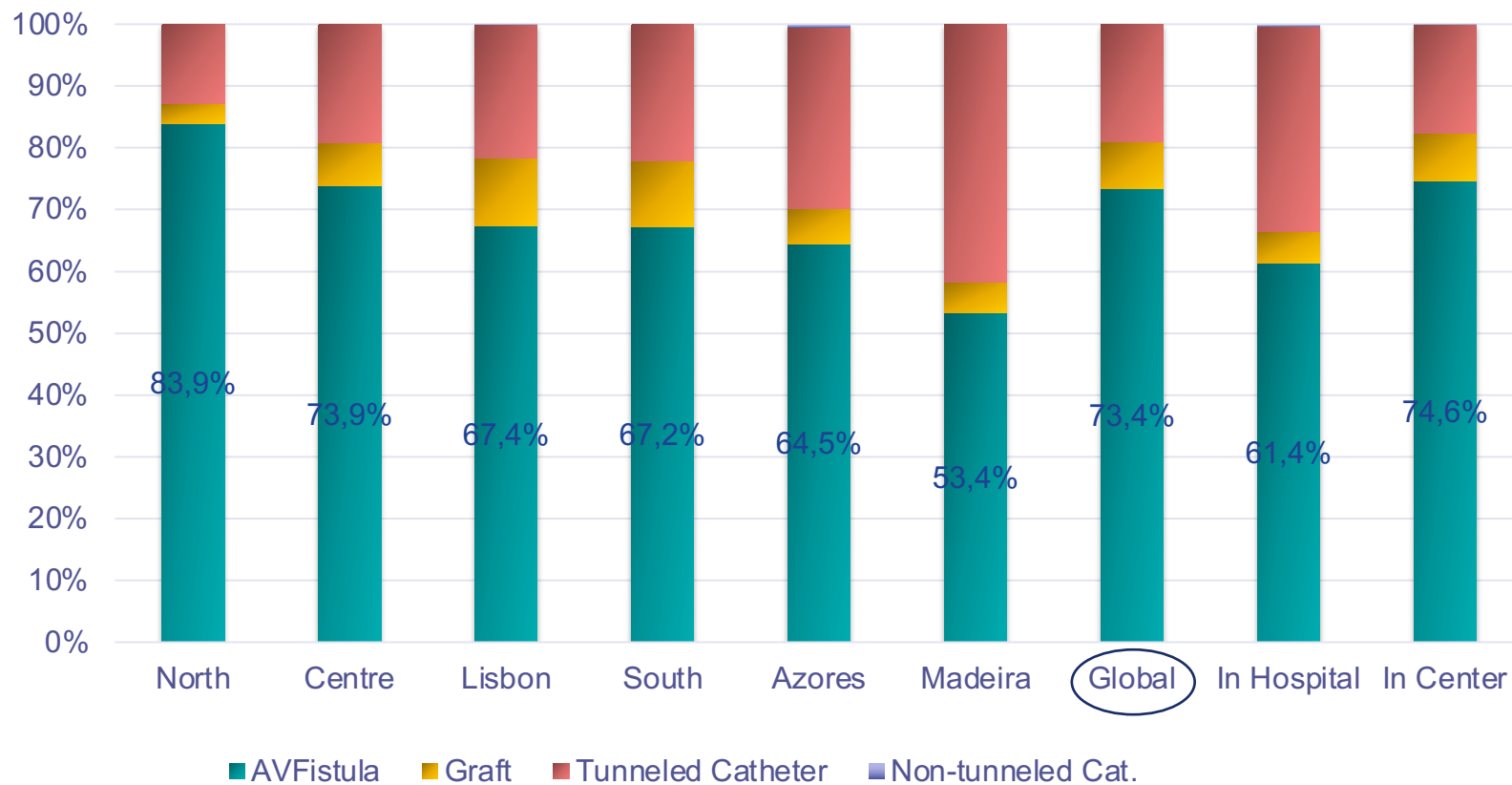


Catheter rate of prevalent patients (%)

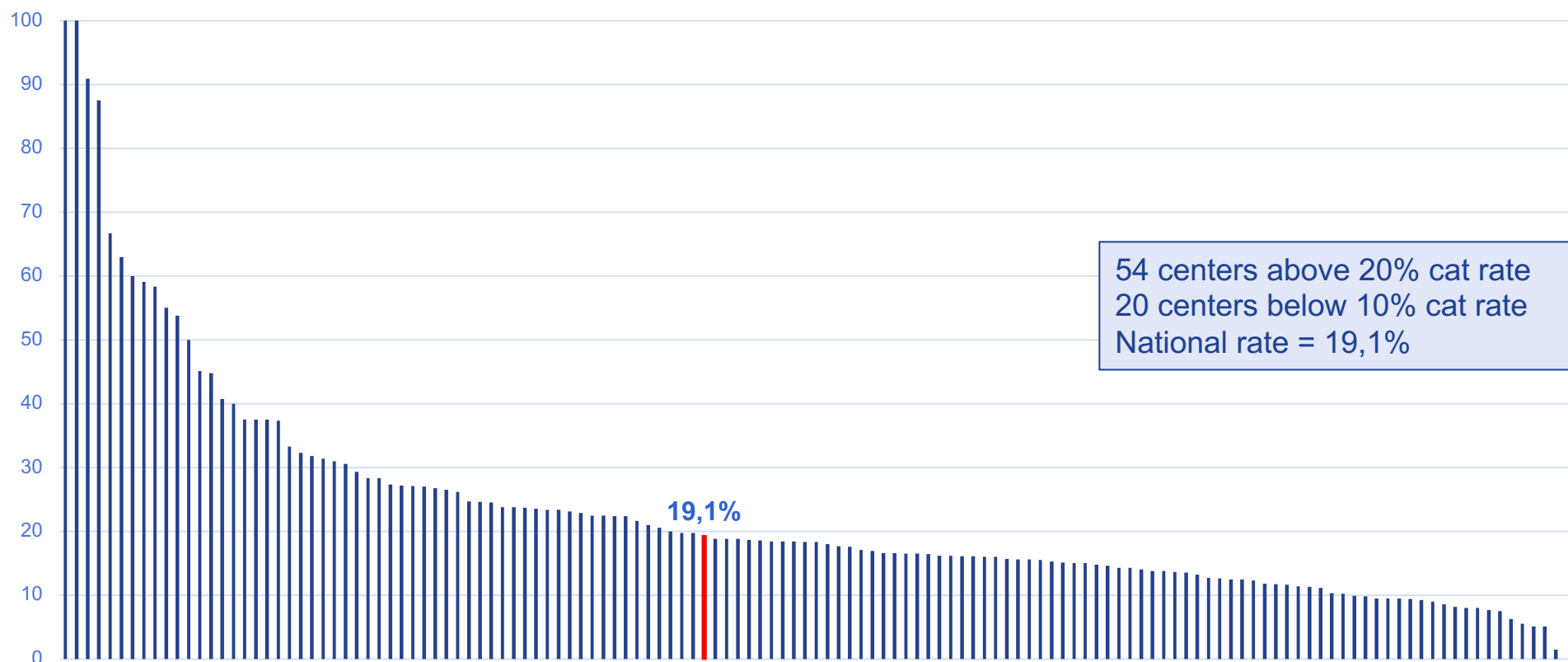
31st December, 2012 - 2022



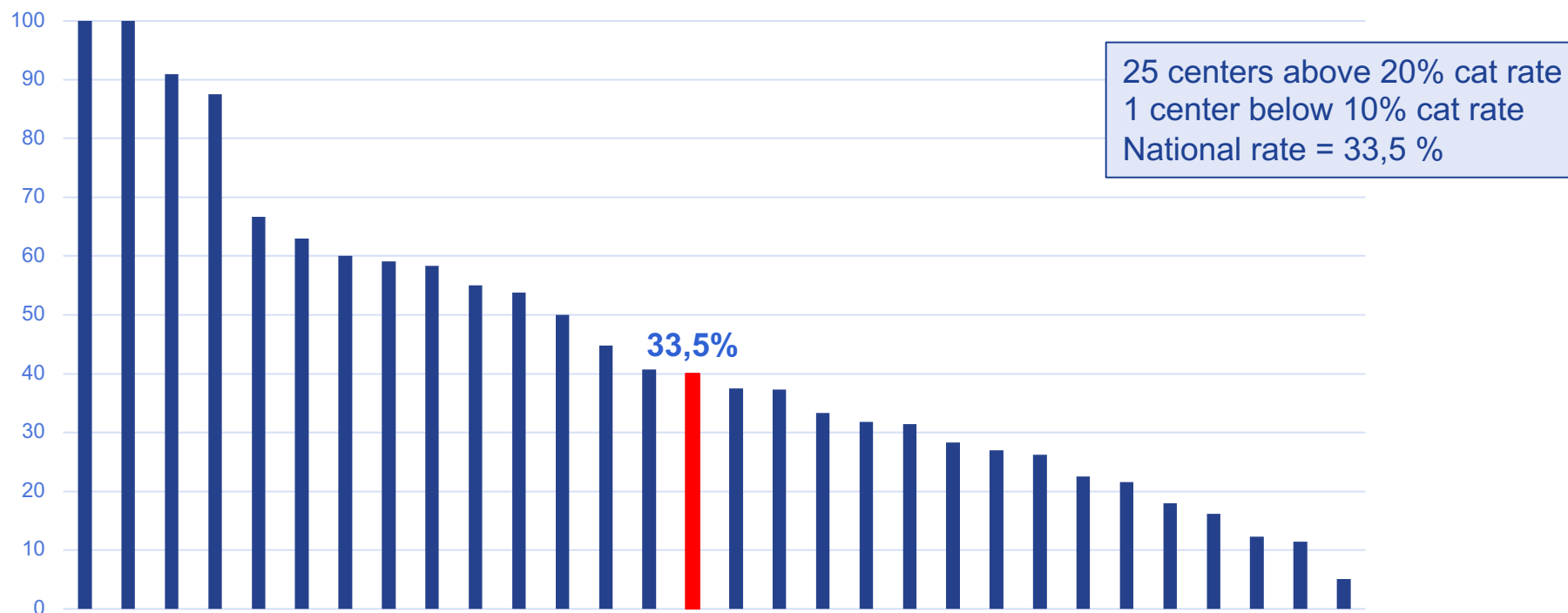
Vascular access of HD prevalent patients by country region and facility type, 31st of December 2022



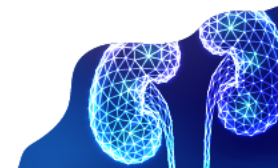
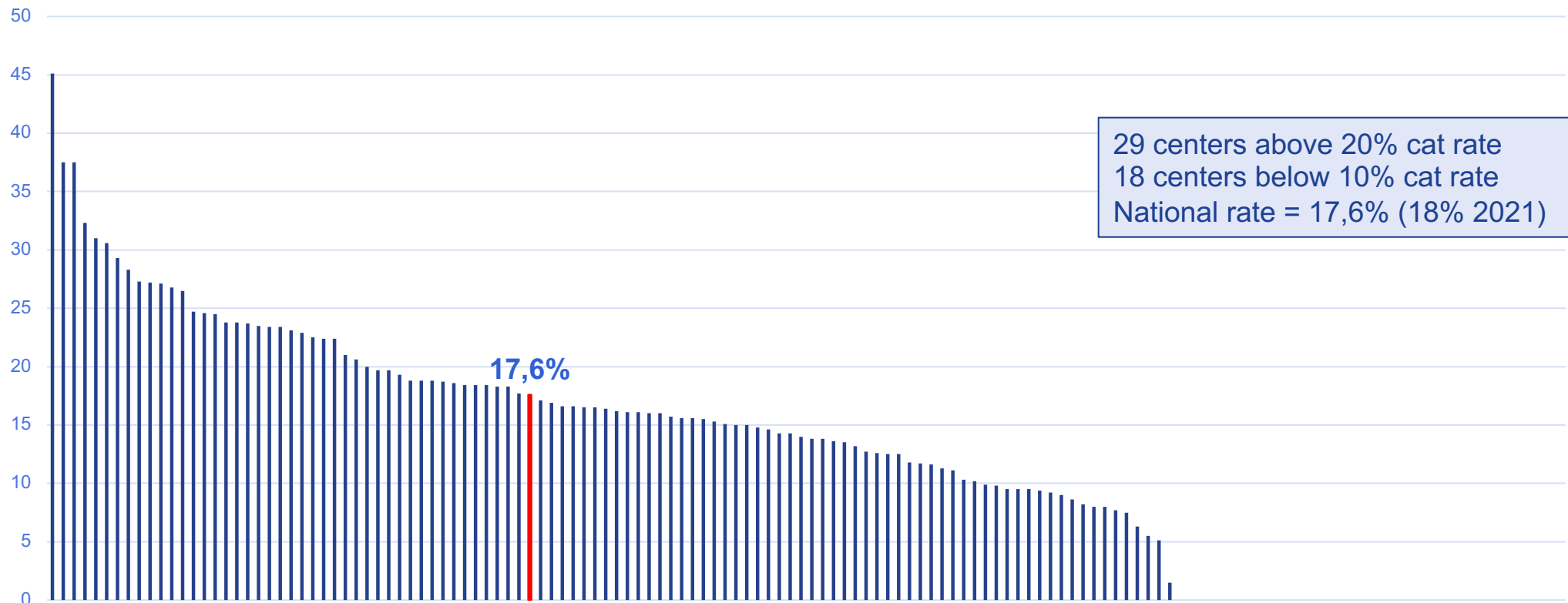
Catheter rate of prevalent patients (%) 31st December 2022



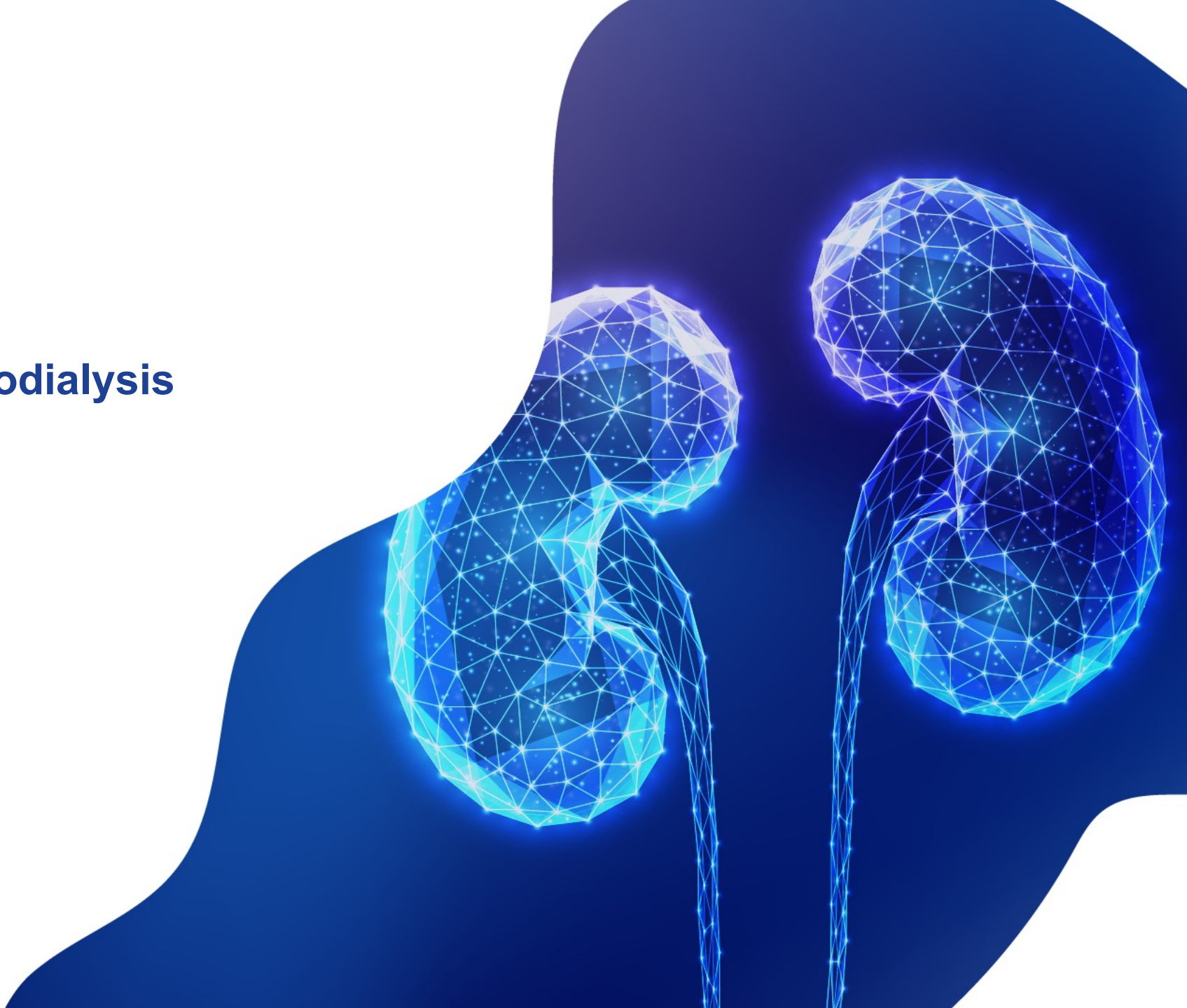
Catheter rate of prevalent patients (%) *In Hospital HD patients - 2022*



Catheter rate of prevalent patients (%) *In Center HD patients - 2022*



Mortality - hemodialysis

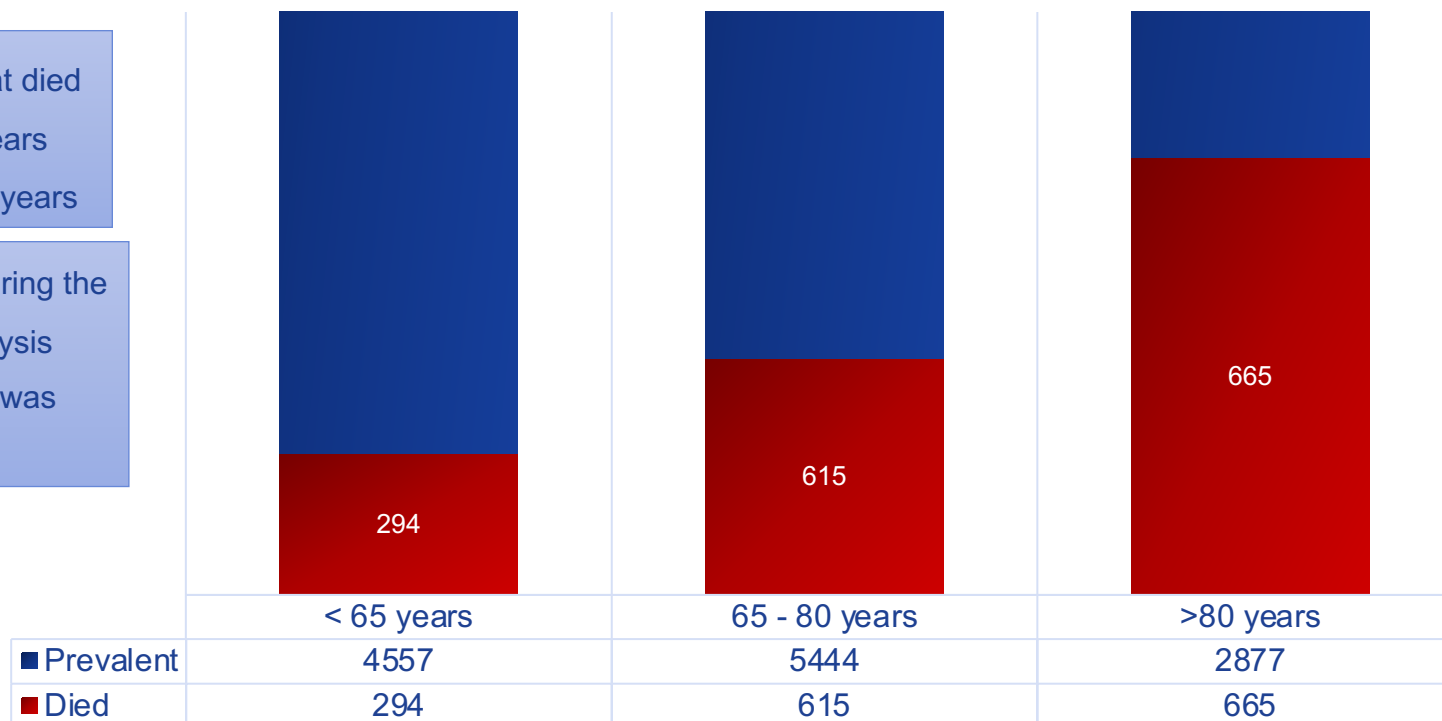


Deaths in hemodialysis by age group in 2022

* 81,3 % of **1574** patients that died in 2022 were more than 65 years old and 42,2 % more than 80 years

* 6,7 % of deaths occurred during the first 90 days after starting dialysis

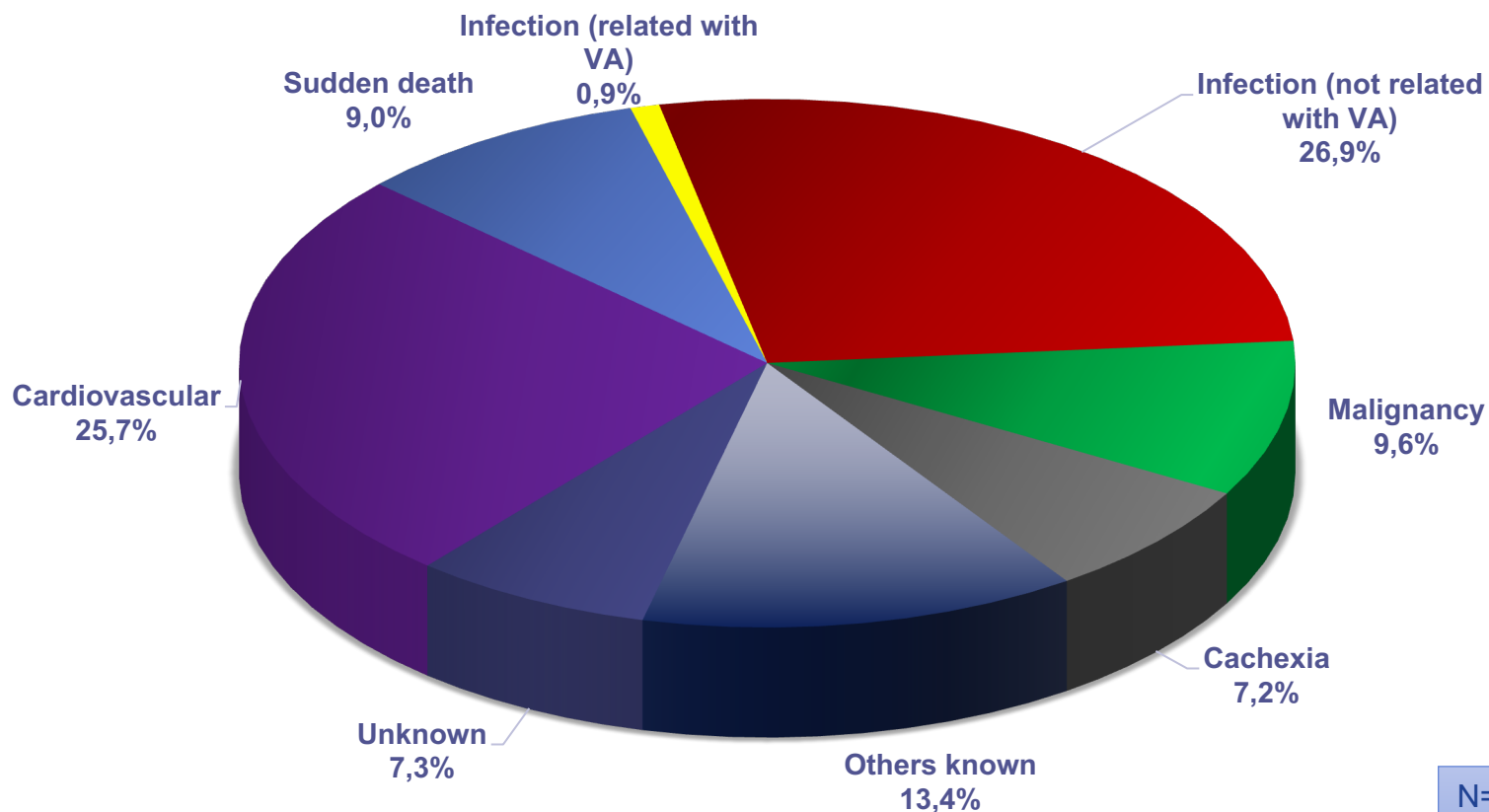
* Mortality in the first 90 days was 4,1% (4,4% em 2021)



N: 1574



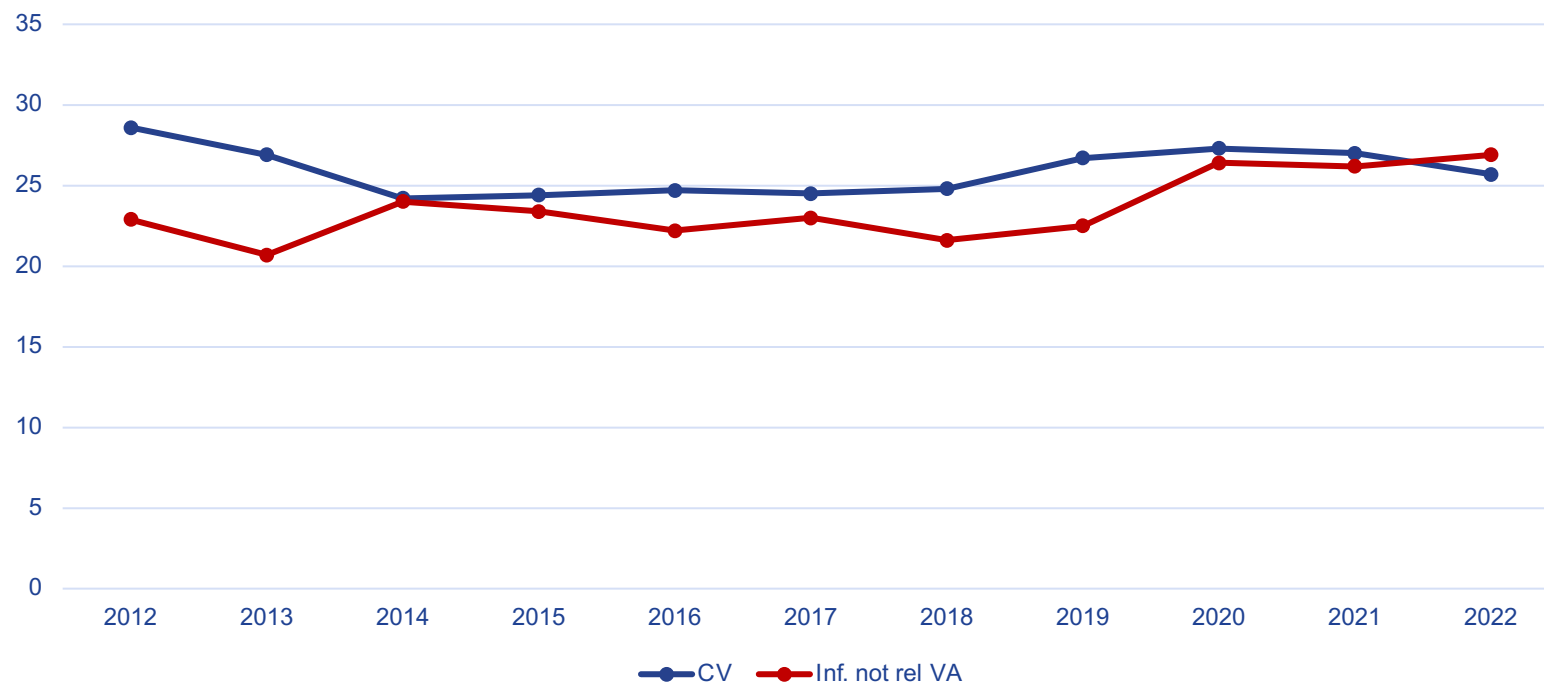
Causes of death in HD patients during 2022



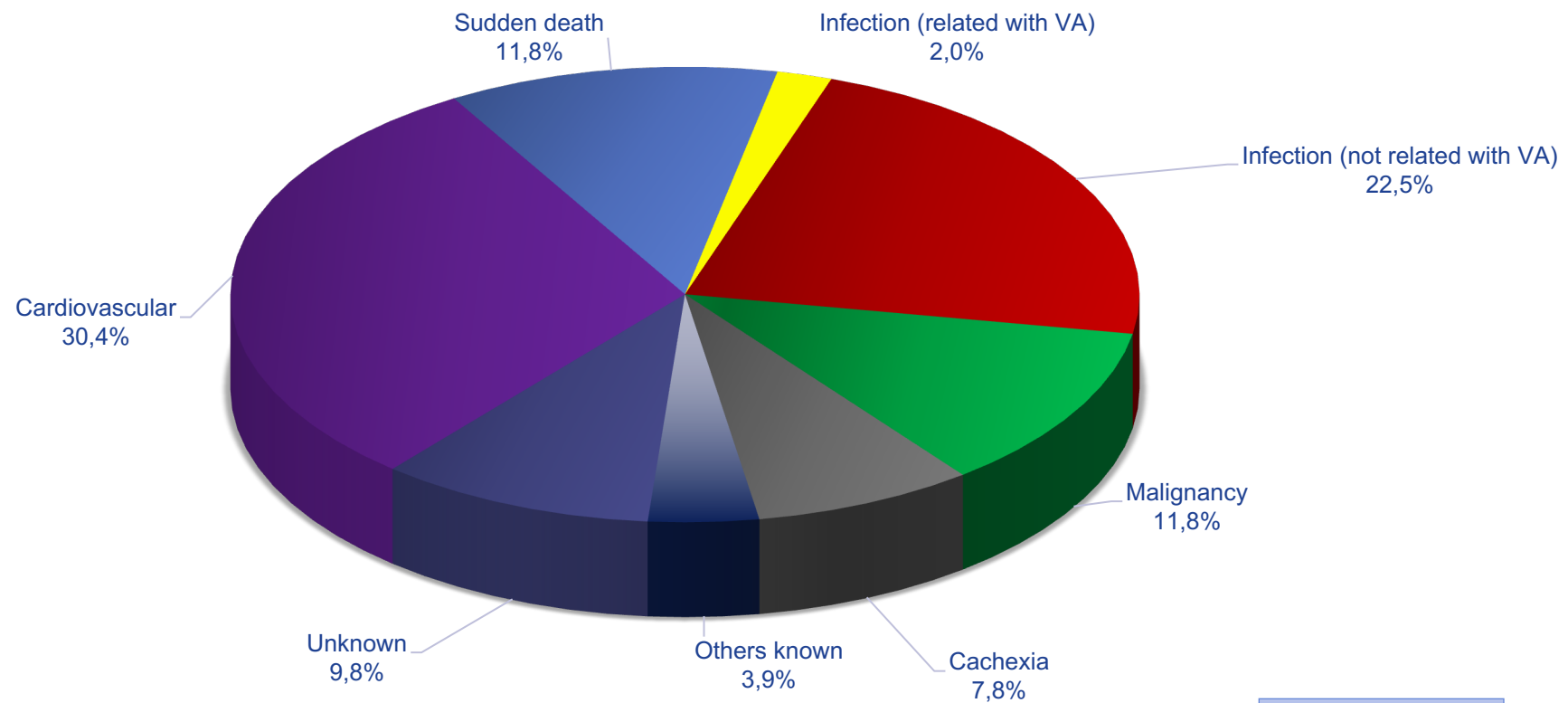
N=1570
4 not available



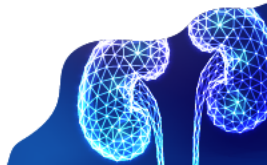
Cardiovascular and Infection deaths in hemodialysis (%) 2012 - 2022



Causes of death during the first 90 days of HD 2022



N=102
3 Not available

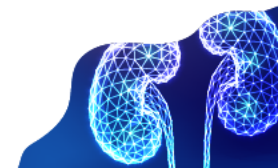


HD patients movement in 2022

	IN		OUT
First treatment	2235	Deaths	1574
Transplant failure	164	Transplanted	372
PD to HD	154	HD to PD	68
		Stop treat. or recovery	92
		Palliative Care	132
		?	38

GROSS MORTALITY RATE = 12,4%

(90d mortality = 4,1%)



Mortality rates – hemodialysis 2022

National gross mortality rate = **12,4%**

(90 day mortality = 4,1%)

Hemodialysis ***in hospital***

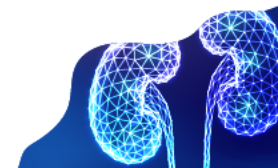
19,1%

(90 day mortality = 7,2%)

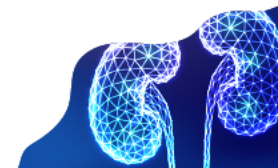
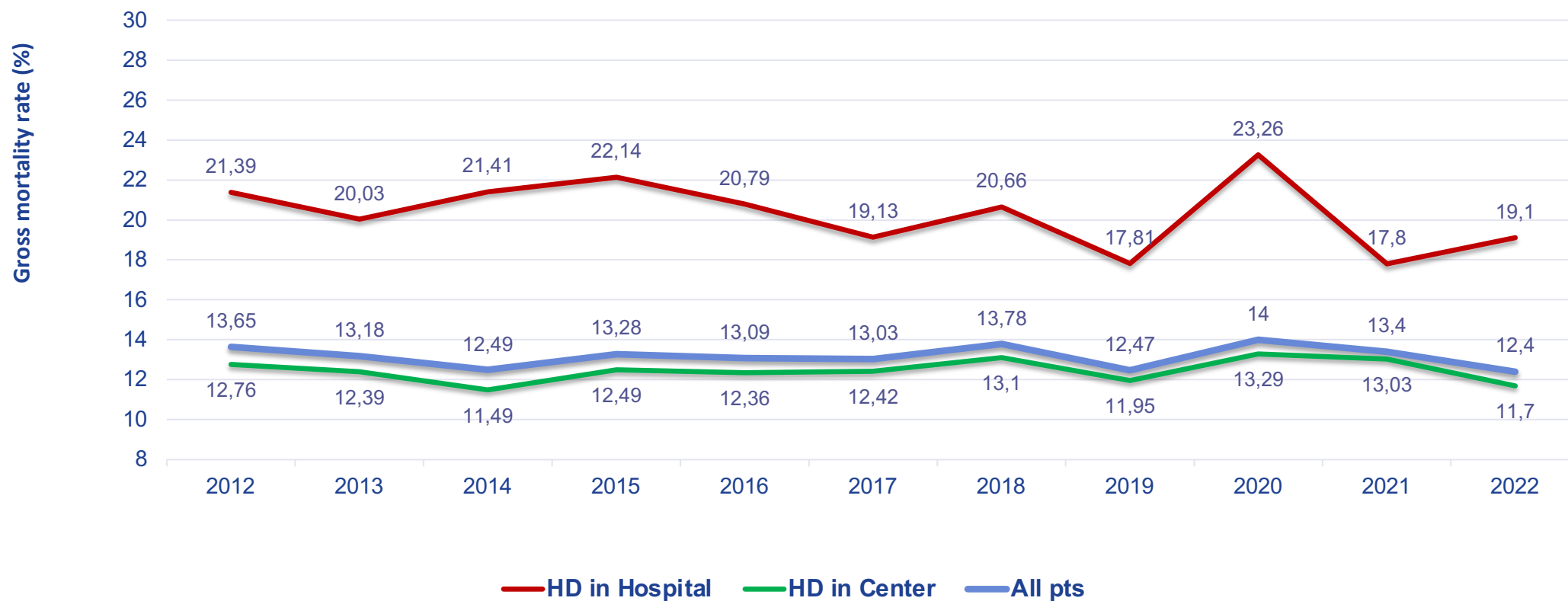
Hemodialysis ***in center***

11,7%

(90 day mortality = 3,4%)

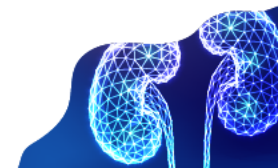
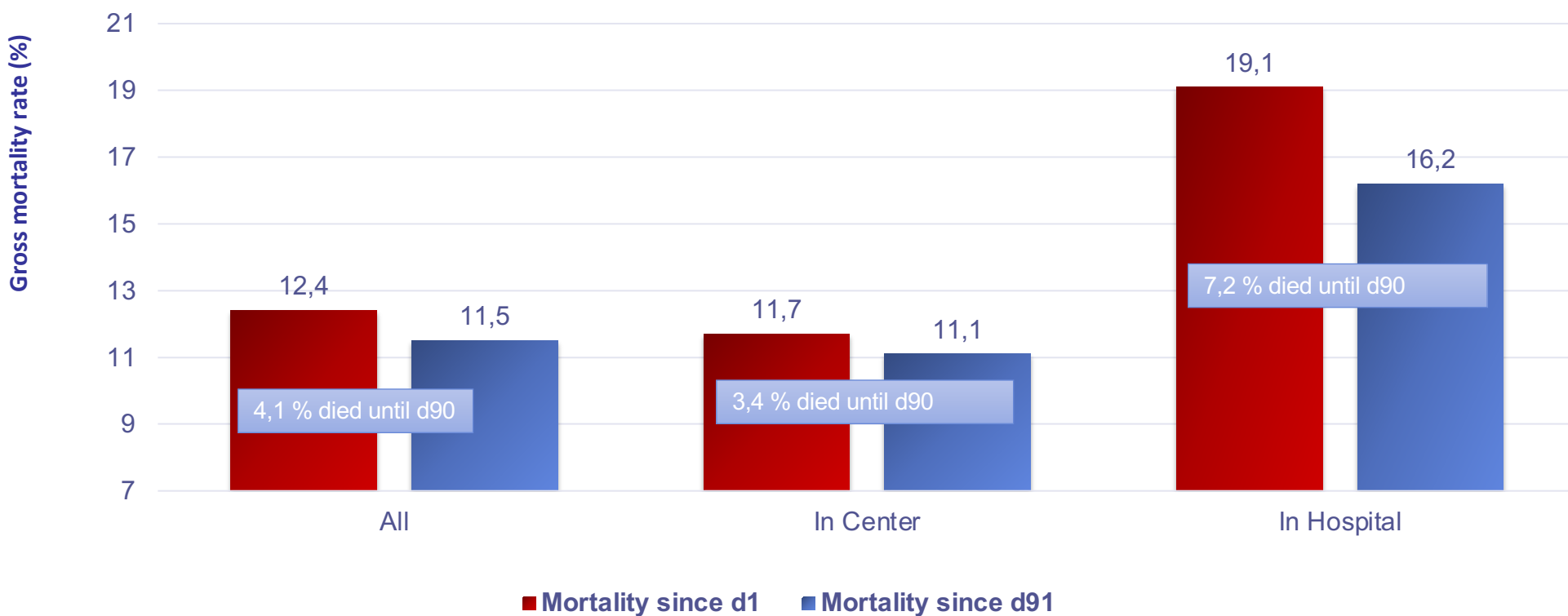


Gross mortality rate in hemodialysis 2012 - 2022



Gross mortality rate

Impact of deaths until day 90, 2022

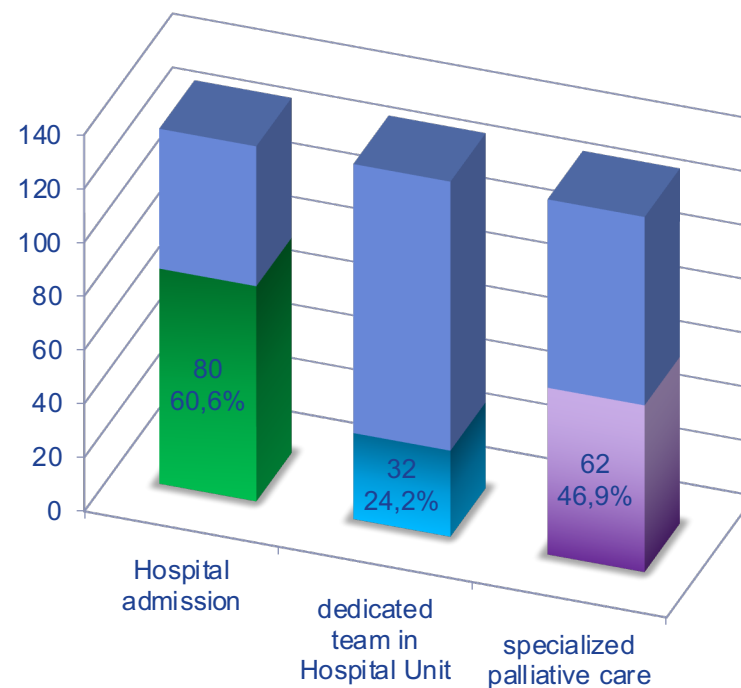
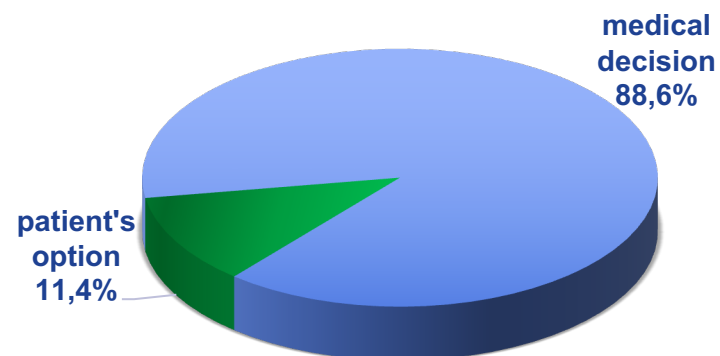


Gross mortality rates – hemodialysis *since d1 and d91 by country region, 2022*

	Mean Age	Mortality since d1	Mortality since d91	Deaths until d90 (% of incident)
Global	68,38	12,4%	11,5%	4,1%
North	69,2	11,92%	11,6%	4,1%
Center	70,2	12,2%	11,3%	4,3%
South	68,8	12,7%	12,2%	2,7%
Lisbon	66,8	12,7%	11,8%	4,2%
Azores	63,2	18%	16,7%	5,3%
Madeira	64,6	9,1%	7,6%	6,8%



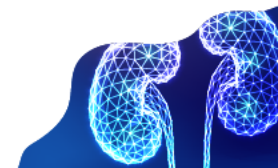
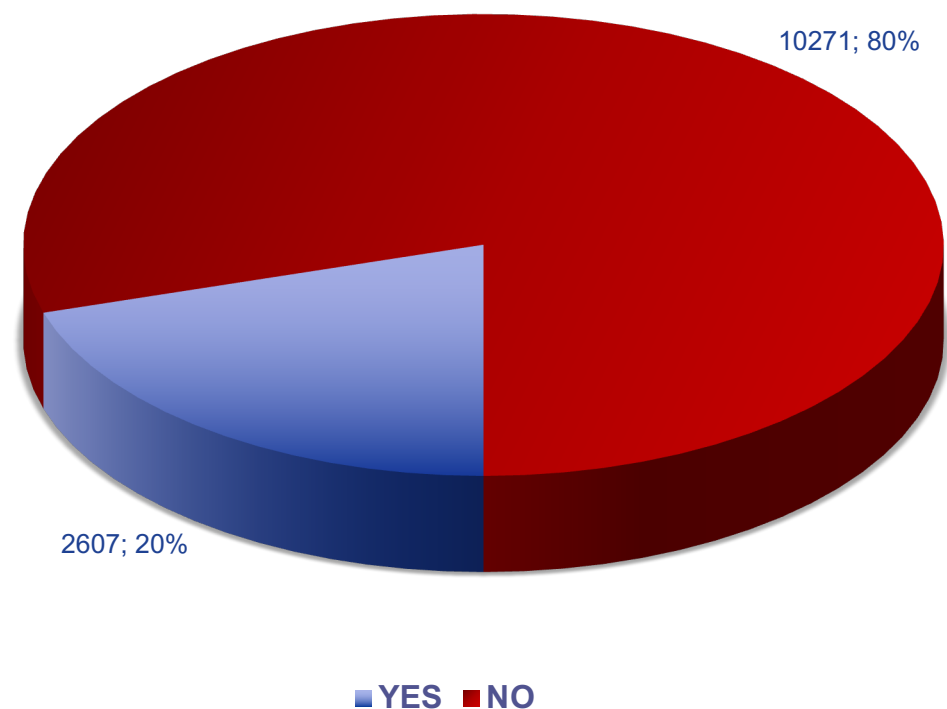
Switch from HD to CKC 2022



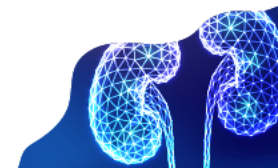
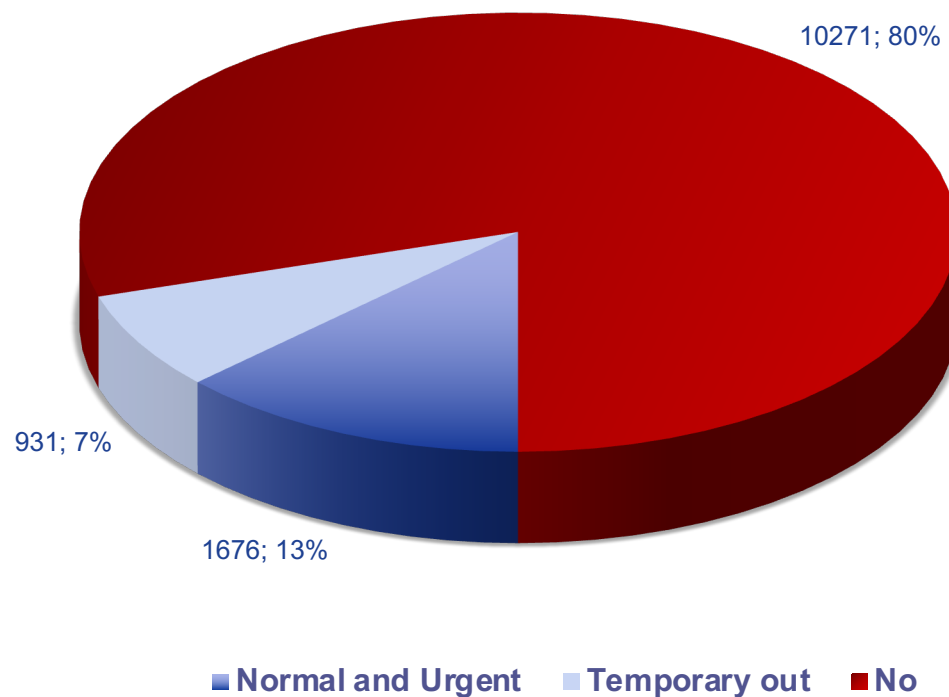
N = 132



Waiting list for renal transplantation *Hemodialysis patients, 2022*



Waiting list for renal transplantation *HD patients, Active and temporary contraindication - 2022*

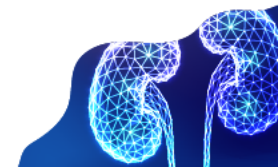
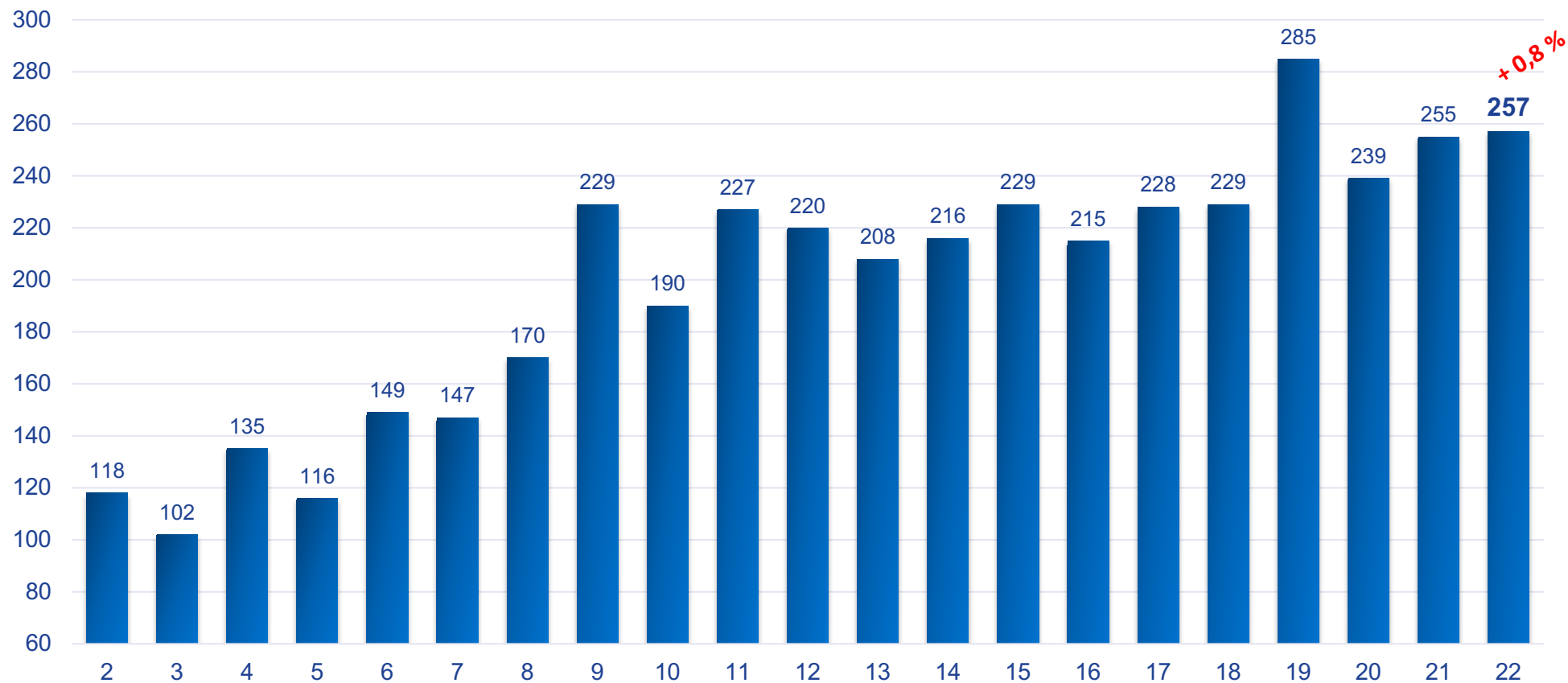


PERITONEAL DIALYSIS

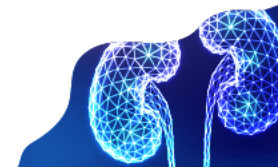
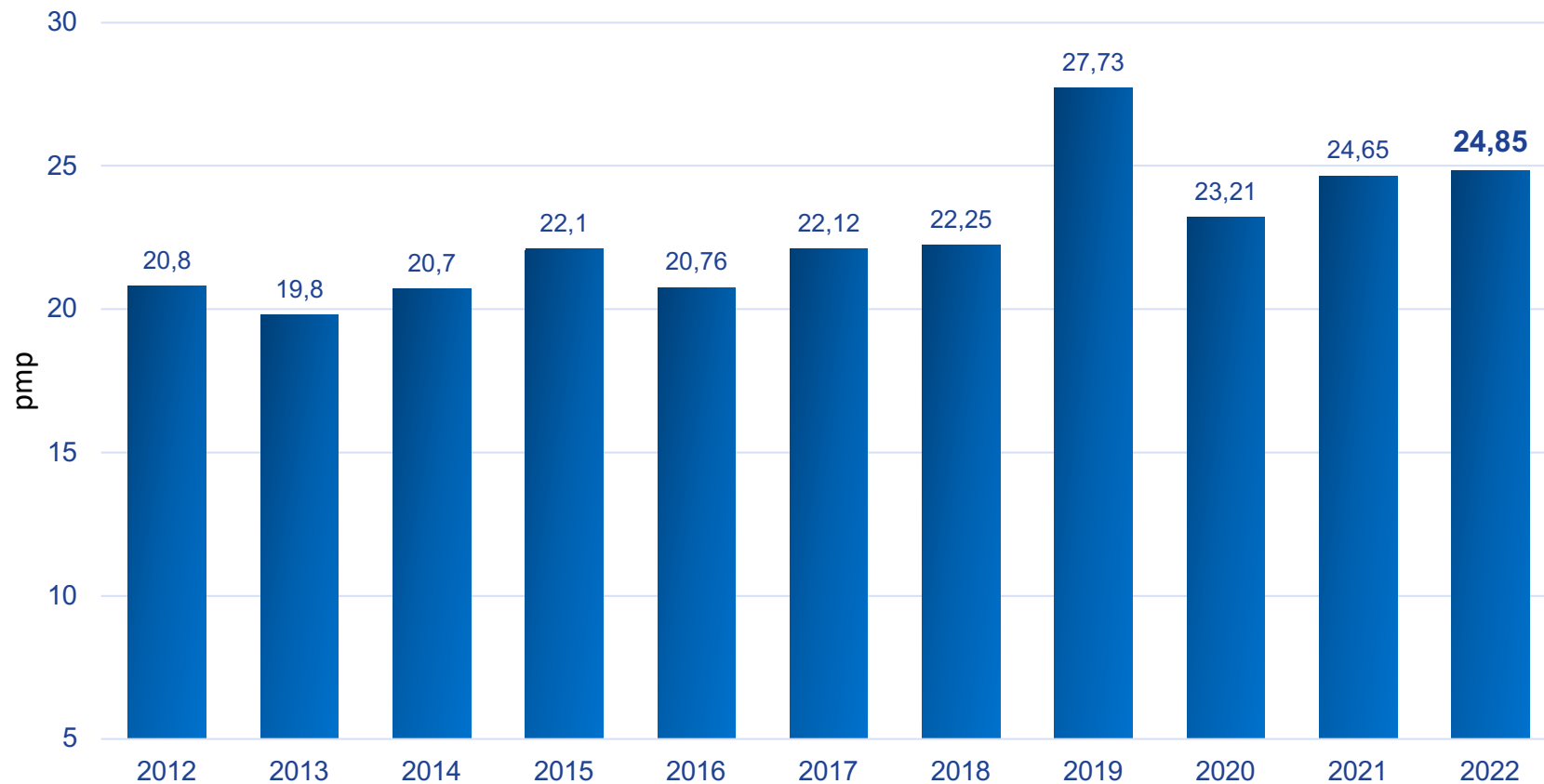
ENCONTRO RENAL
16 - 18 NOV 2023
PORTO PALÁCIO



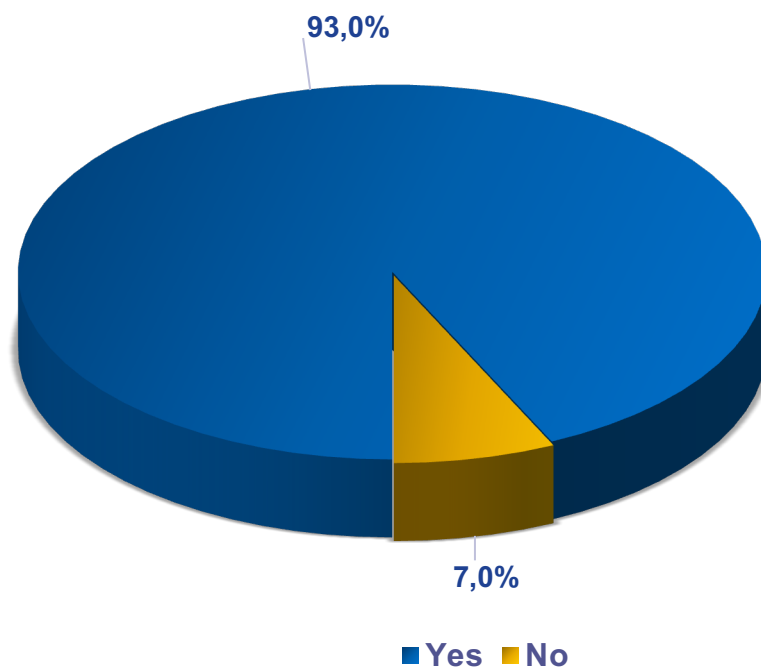
New patients starting peritoneal dialysis 2002 - 2022



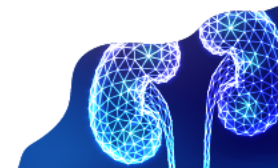
Incident patients accepted for peritoneal dialysis *per million population 2012 - 2022*



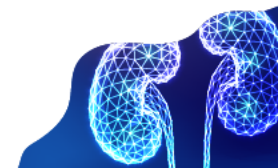
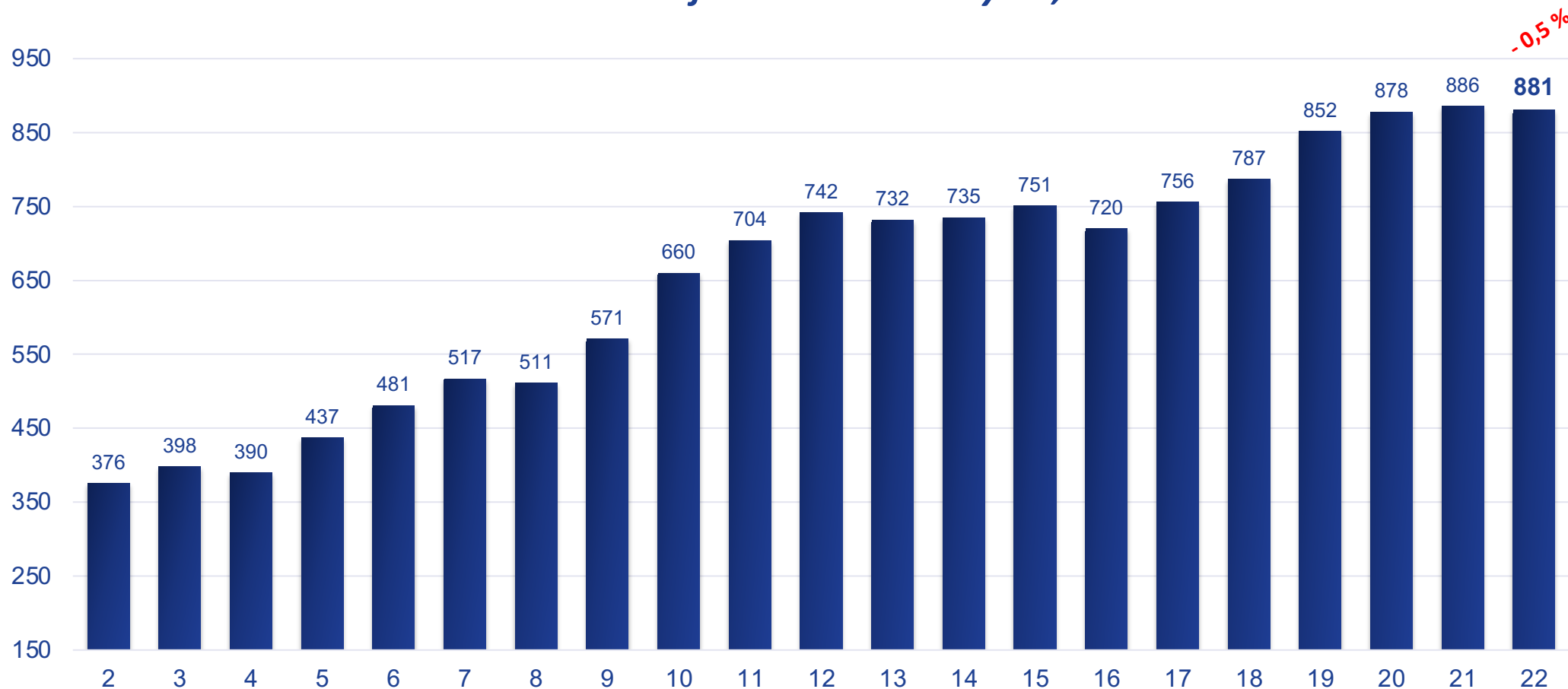
Previous follow-up by nephrology (> 3 months) PD patients, 31st of December 2022



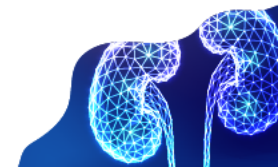
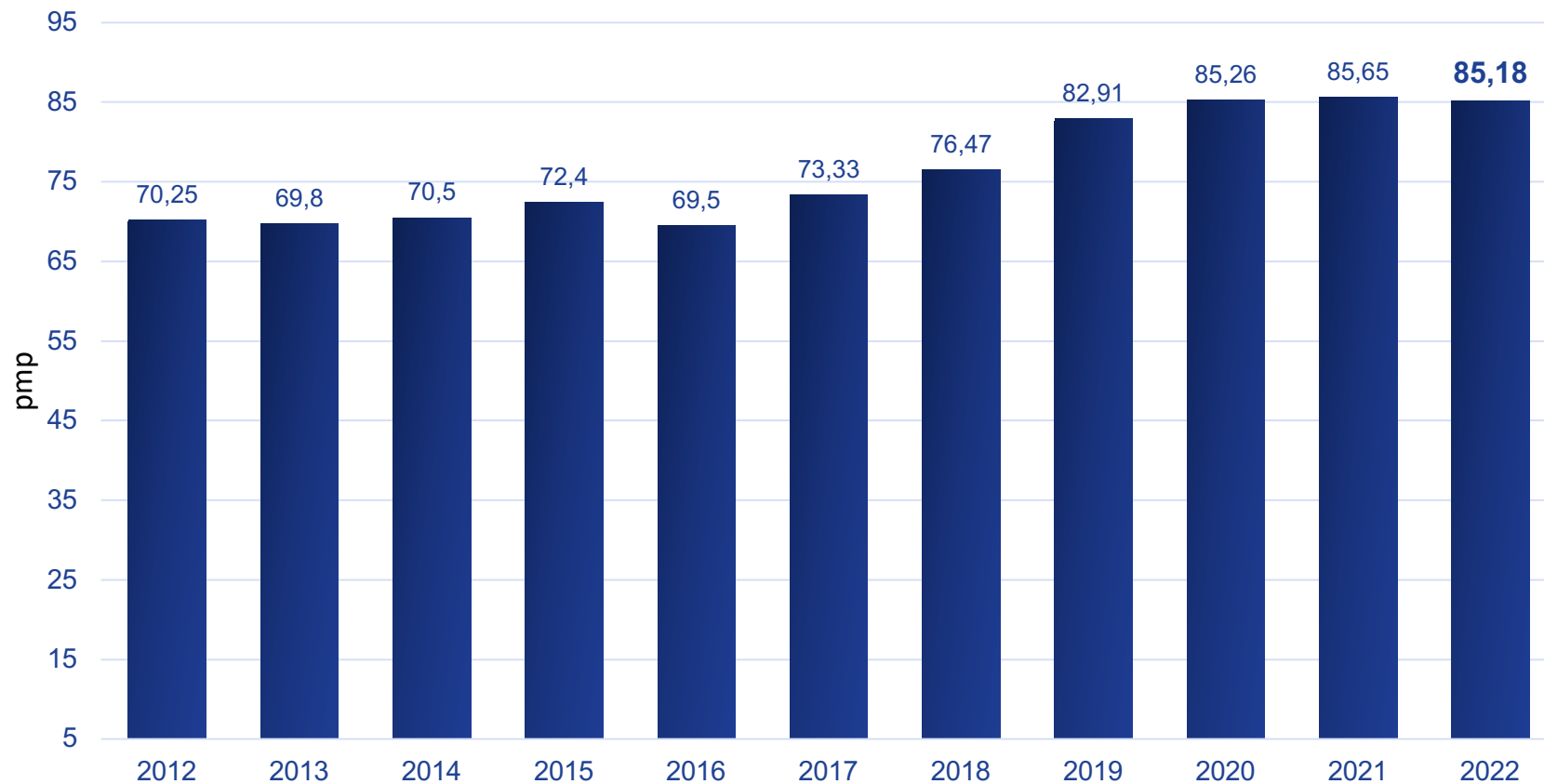
N = 257



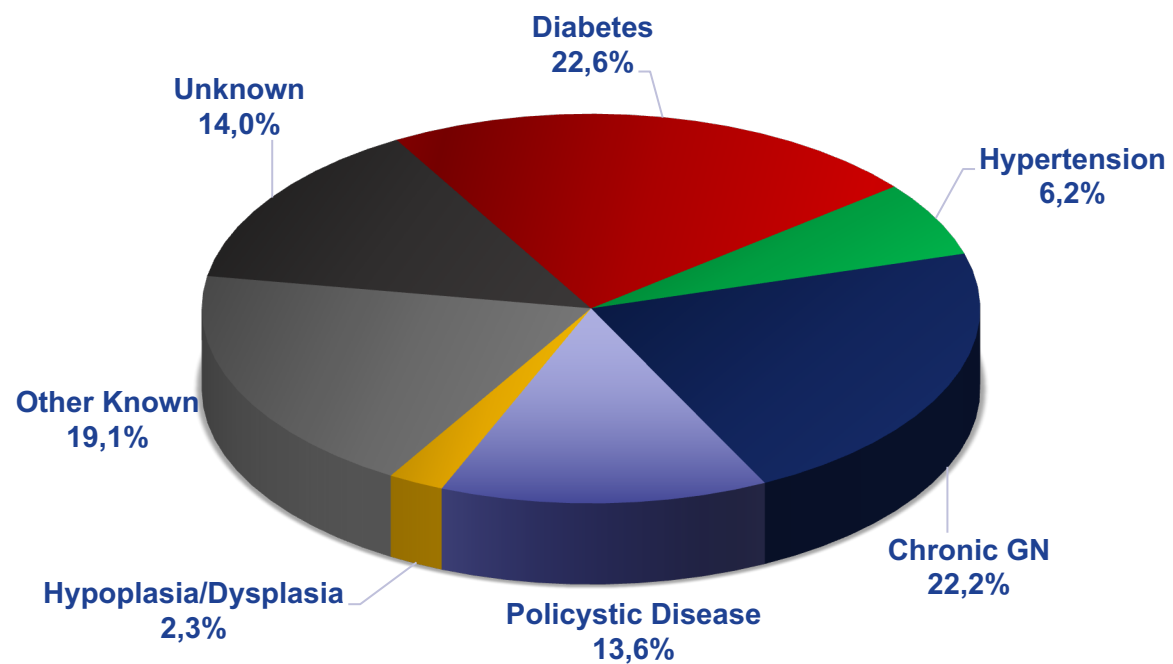
Patients treated by peritoneal dialysis *Count at 31st of December each year, 2002 – 2022*



Prevalent patients treated by peritoneal dialysis *per million population 2012 - 2022*



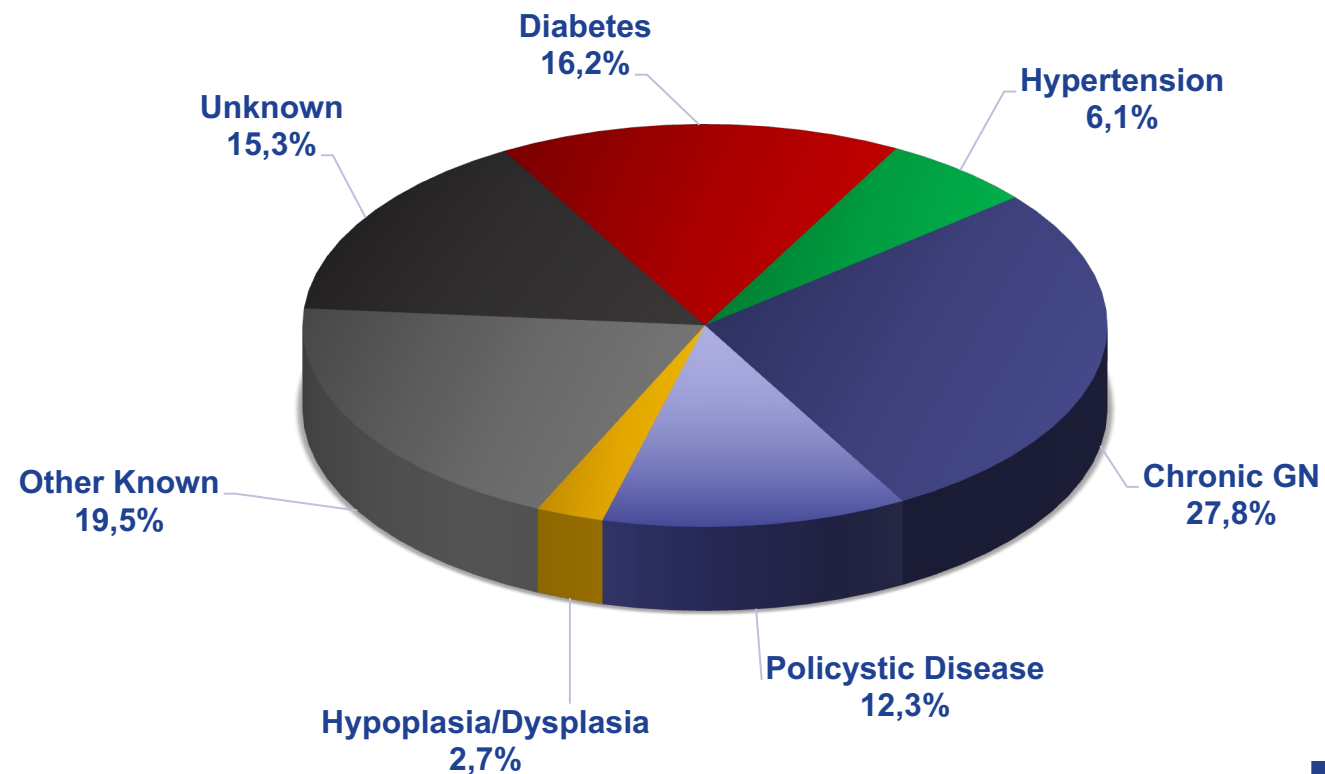
Primary renal disease of patients accepted for peritoneal dialysis *during 2022*



N = 257



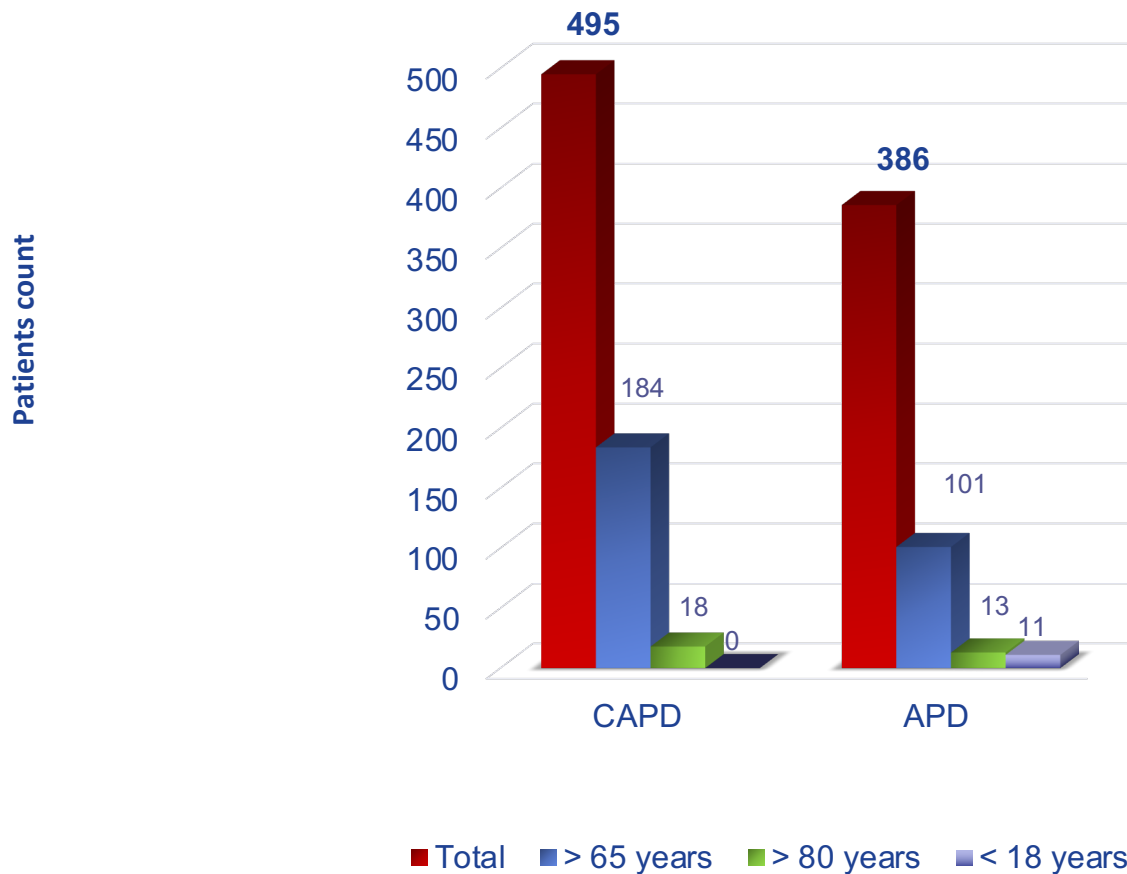
Primary renal disease of prevalent peritoneal dialysis patients *31st December 2022*



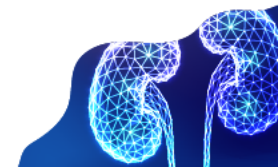
N = 881



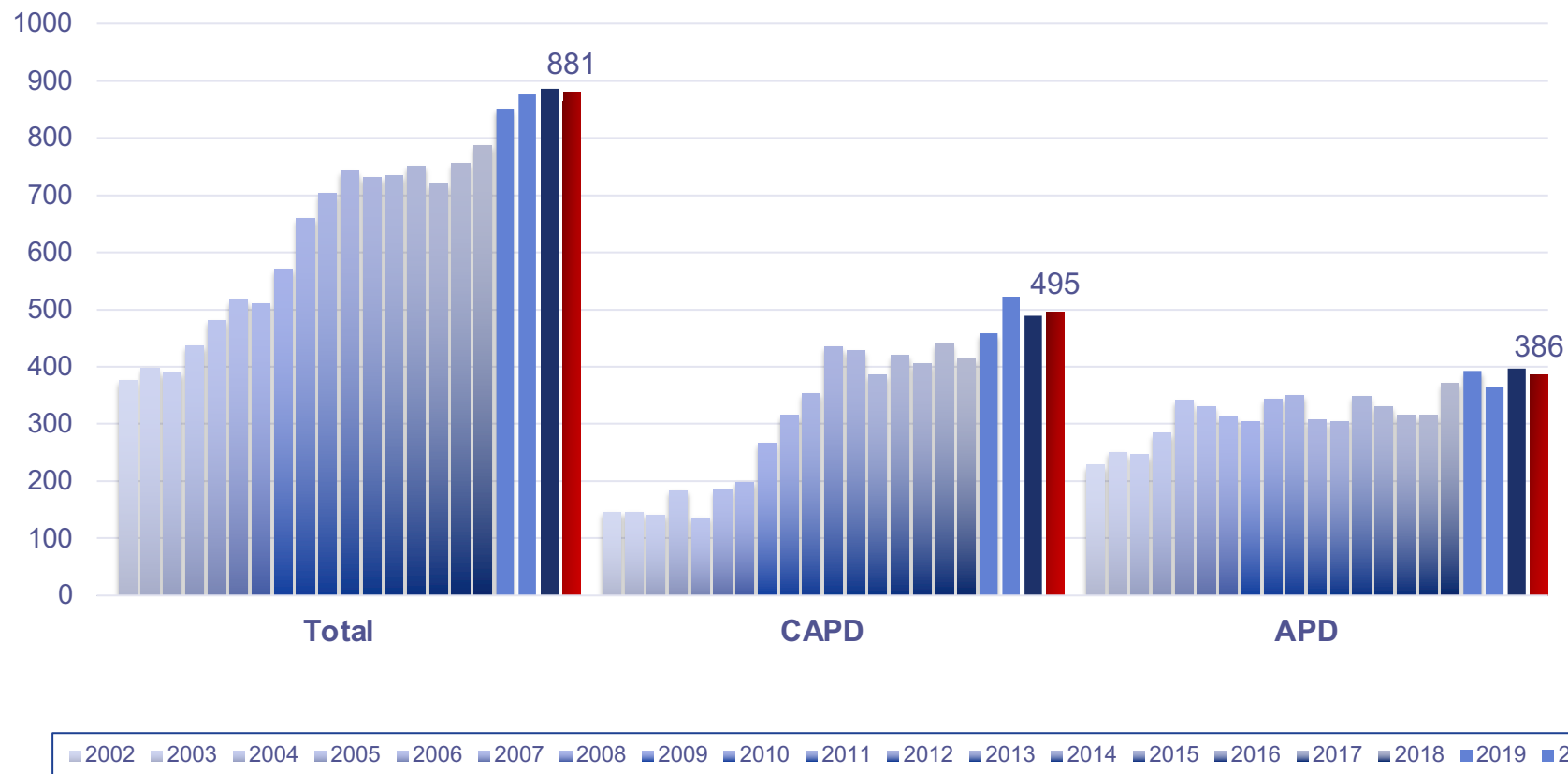
Patients treated by peritoneal dialysis *Manual vs automated, 31st of December 2022*



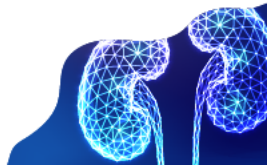
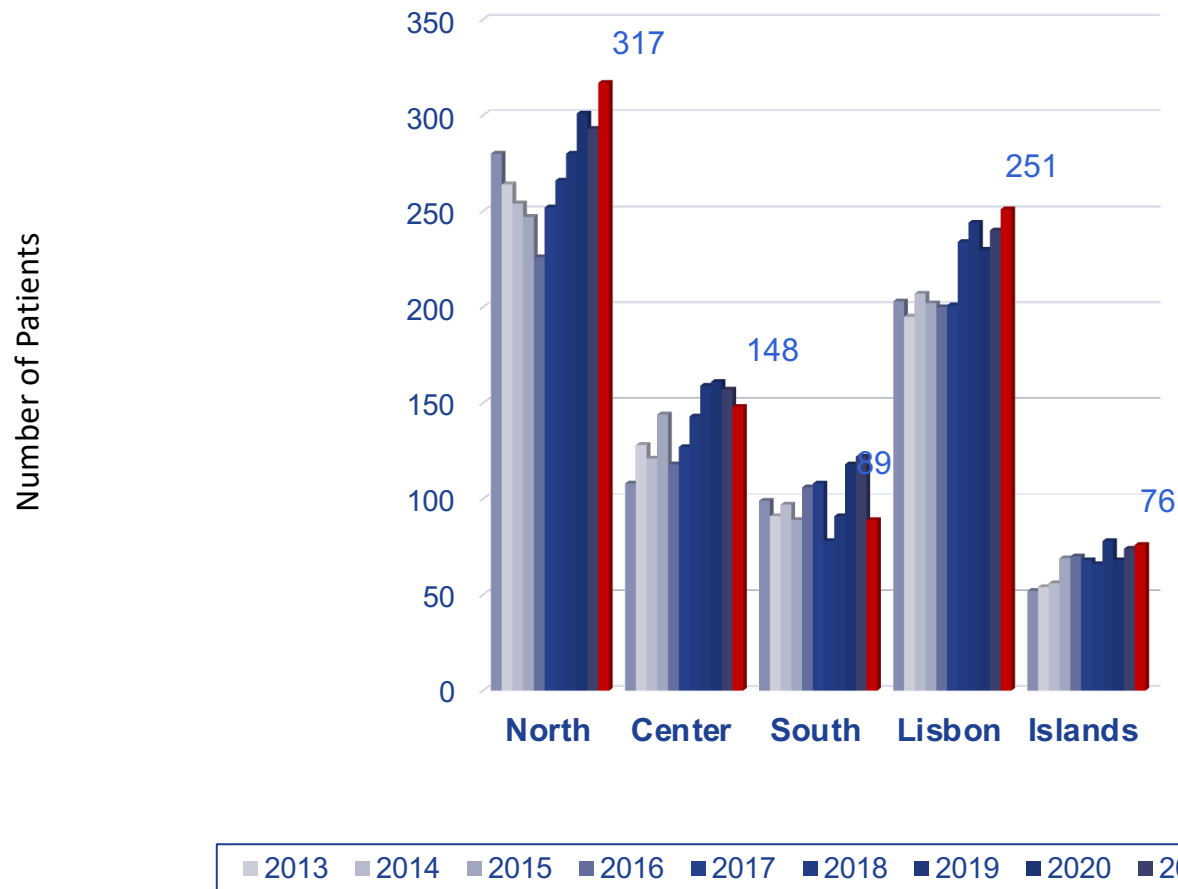
*N = 881
APD:43,8%
Age>65
years:32,3%;*



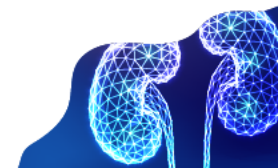
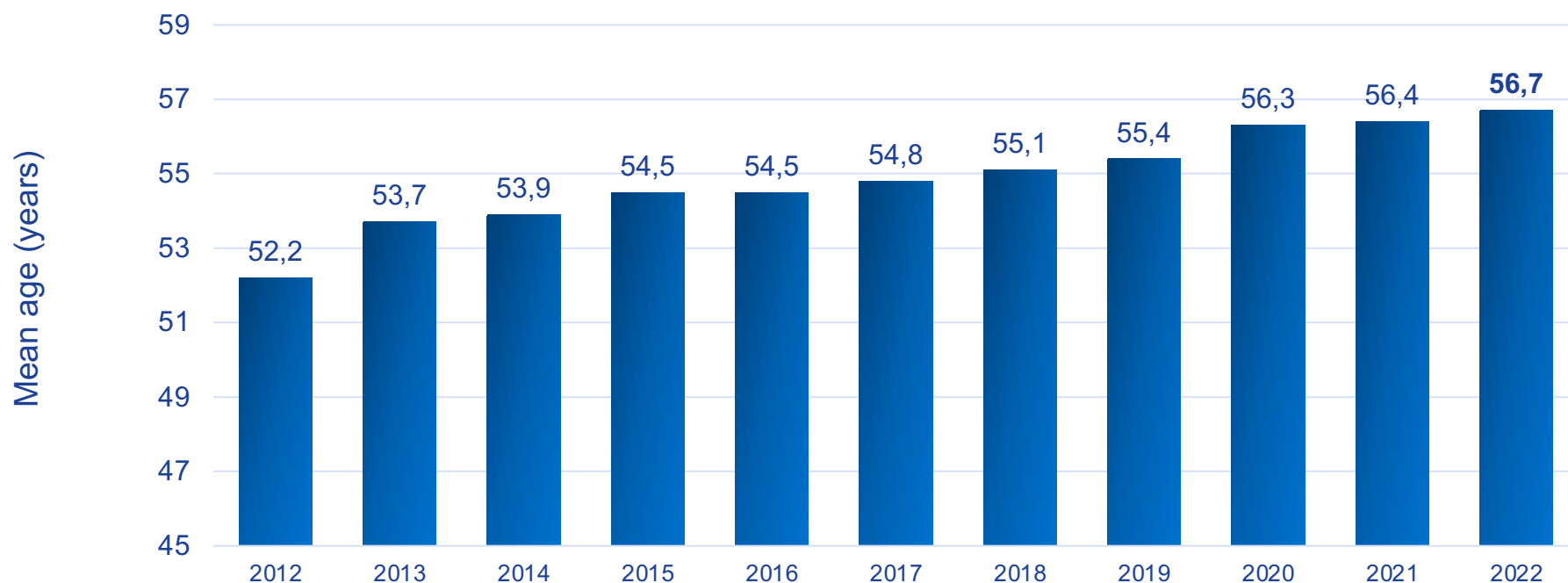
Patients treated by peritoneal dialysis *Manual vs automated, 31st December 2002 - 2022*



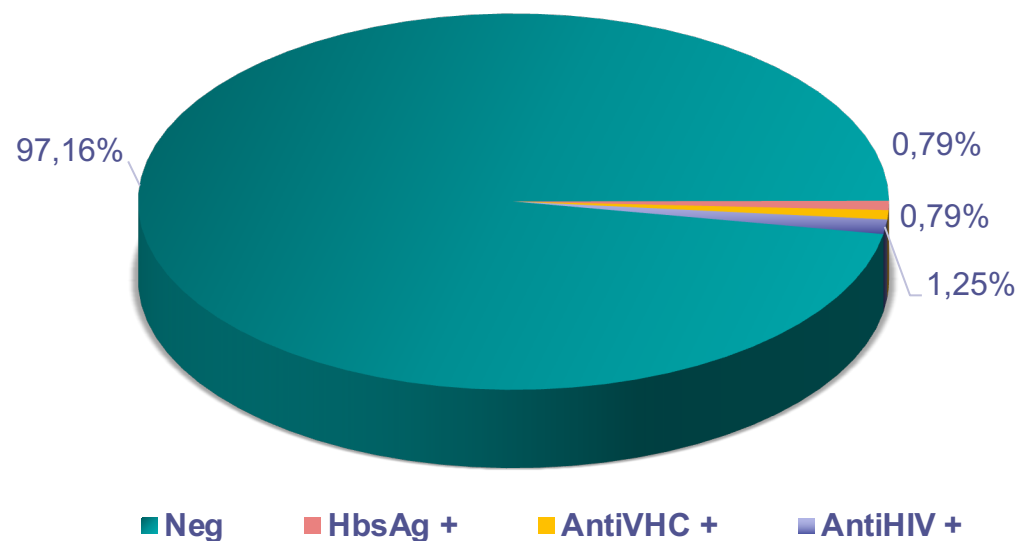
Patients treated by peritoneal dialysis by region, 31st of December 2013 to 2022



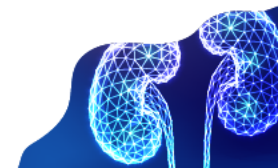
Mean Age of patients treated by peritoneal dialysis *31st of December 2012 – 2022*



Viral status in PD prevalent patients 31st December 2022

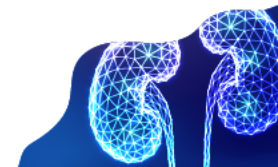


N = 881

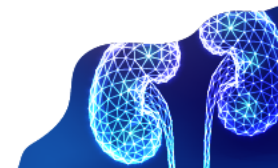
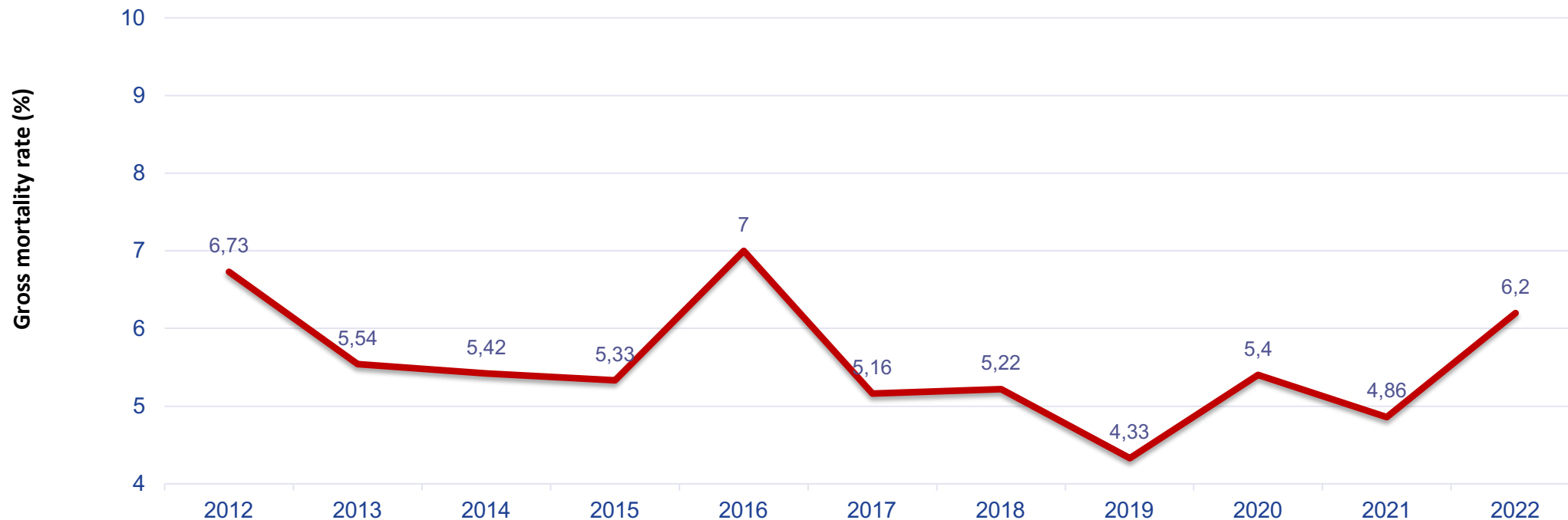


PD patients movement in 2022

	IN		OUT
New patients	257	Death	62
KTr failure	17	Transplant	92
HD to PD	68	PD to HD	154
		Renal Recovery	6
		Stop Treat. (?)	32
		Palliative Care	7
Mortality rate = 6,2 % (90 d mortality = 1,7%)			



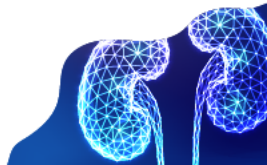
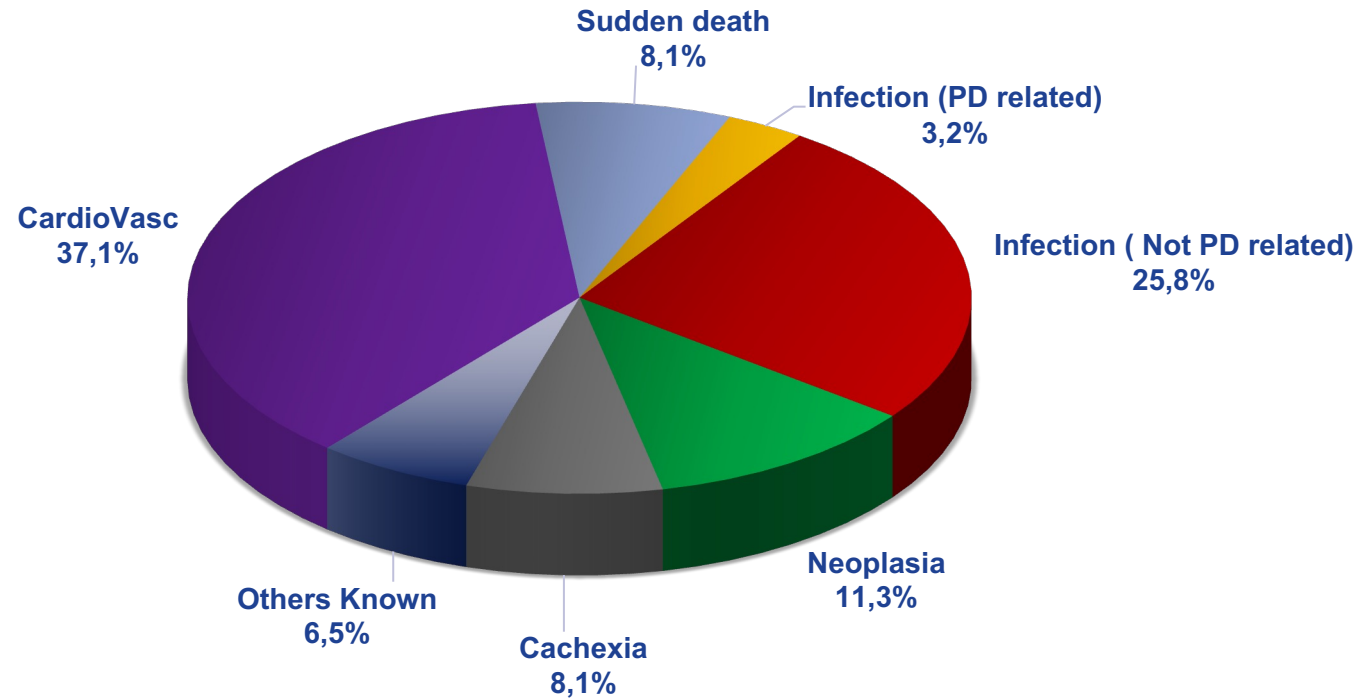
Gross mortality rate in peritoneal dialysis 2012 - 2022



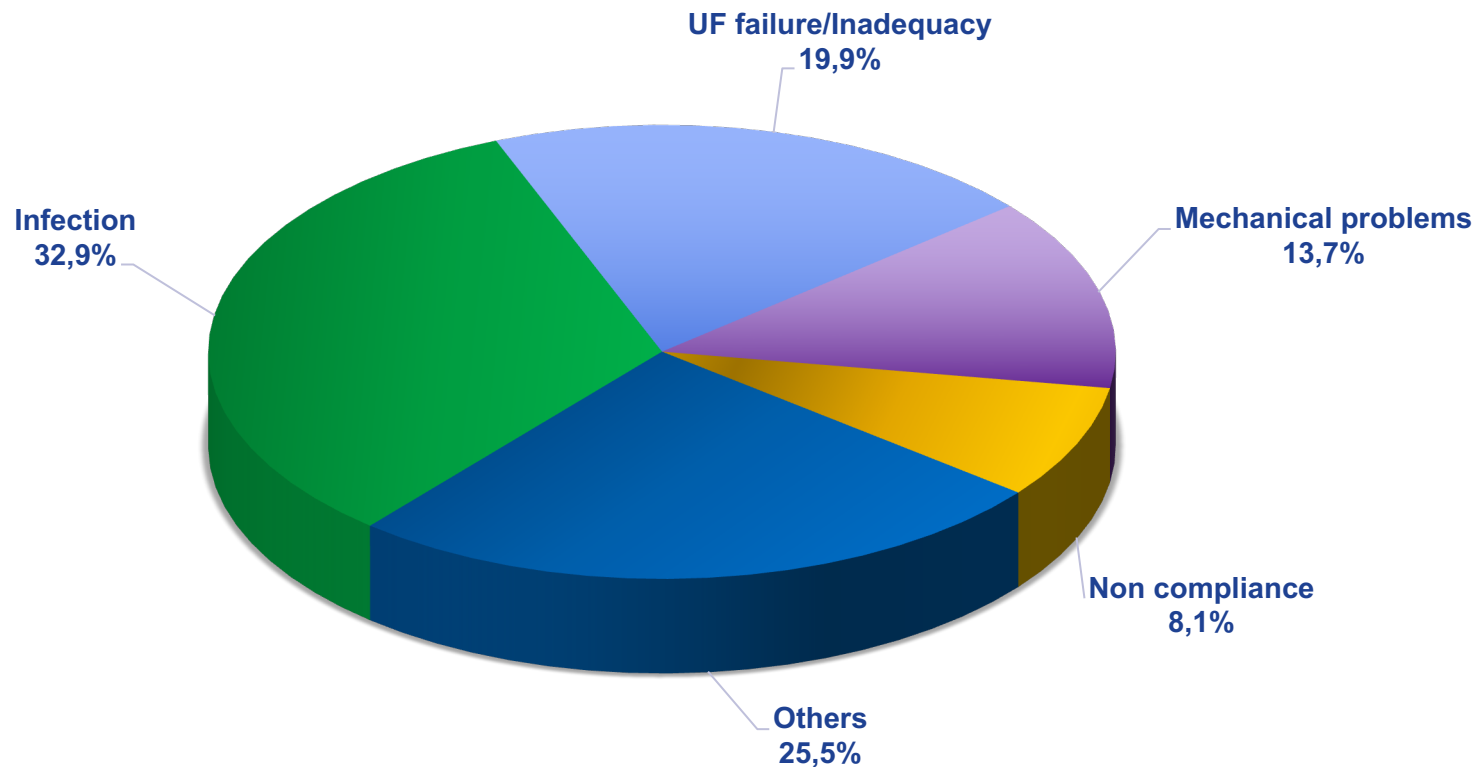
Causes of death in PD patients 2022

N = 62

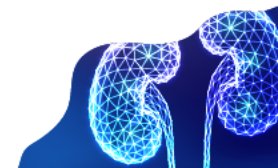
6 patients died until day 90; 1,7%
of incidente patients and 9,6% of
all deaths



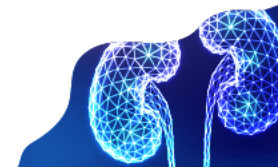
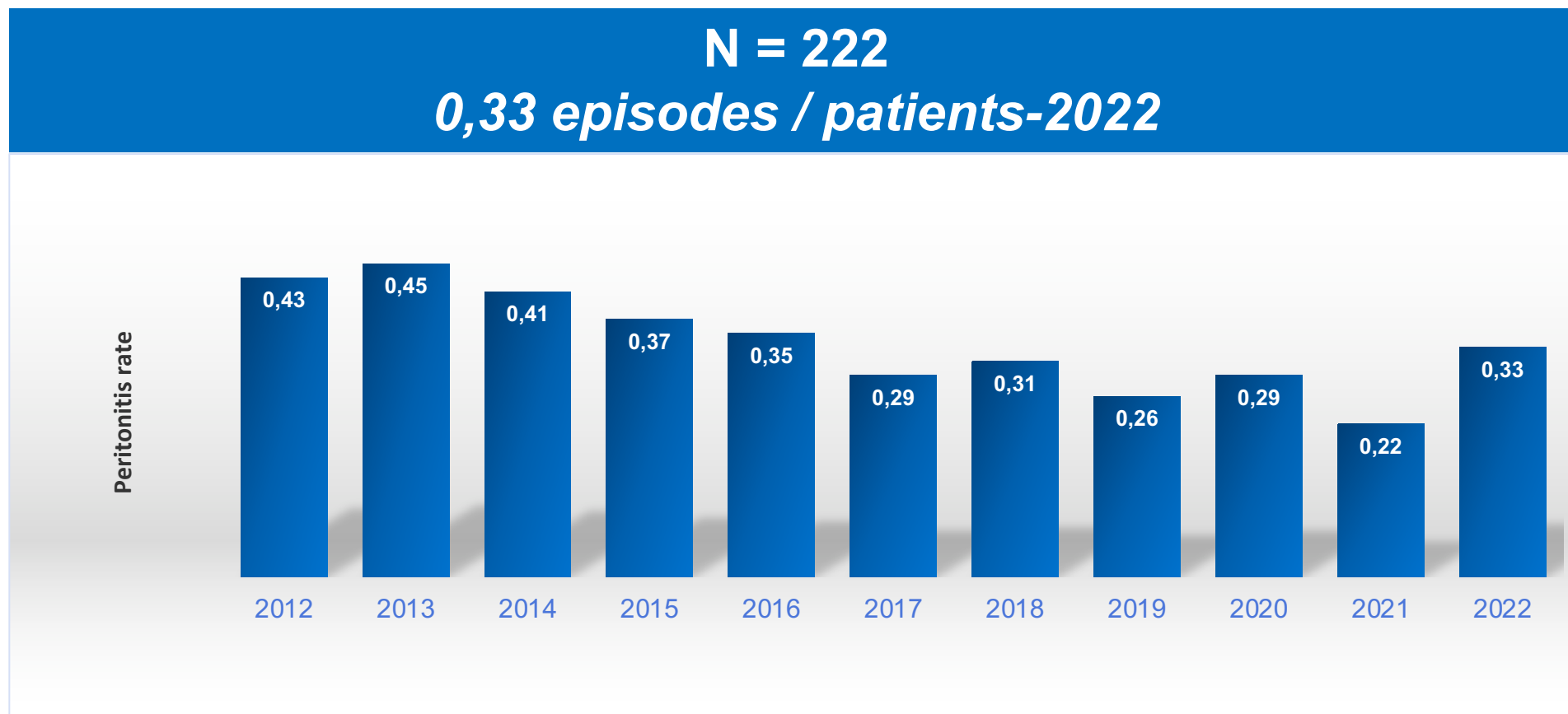
Reasons for PD withdrawal 2022



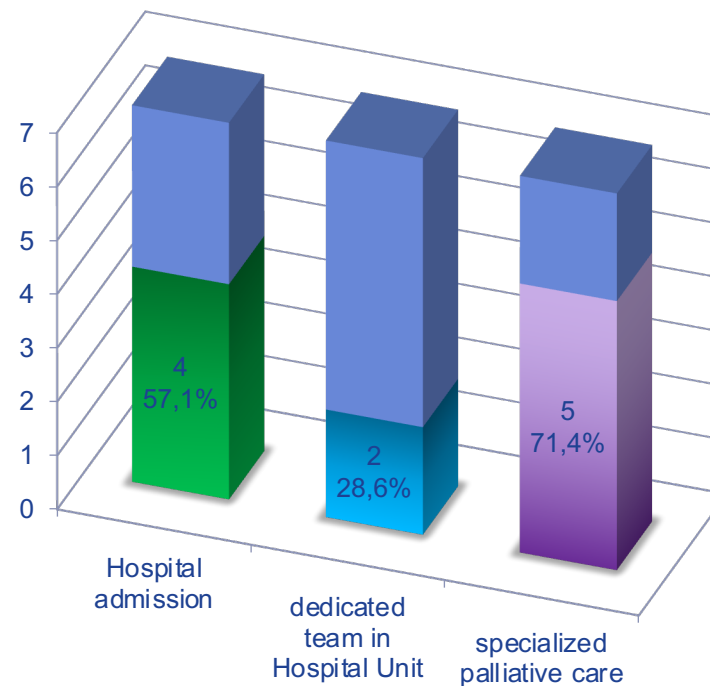
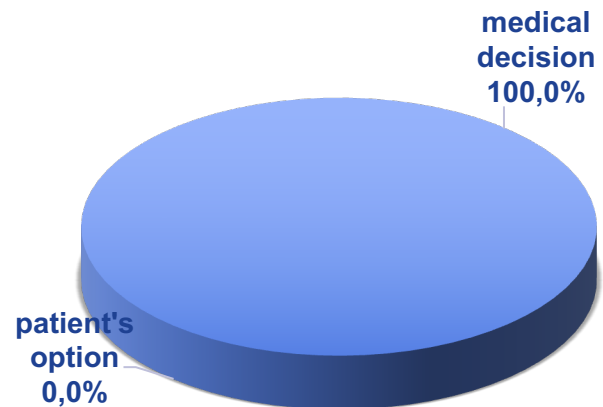
N = 161



Peritonitis episodes 2022



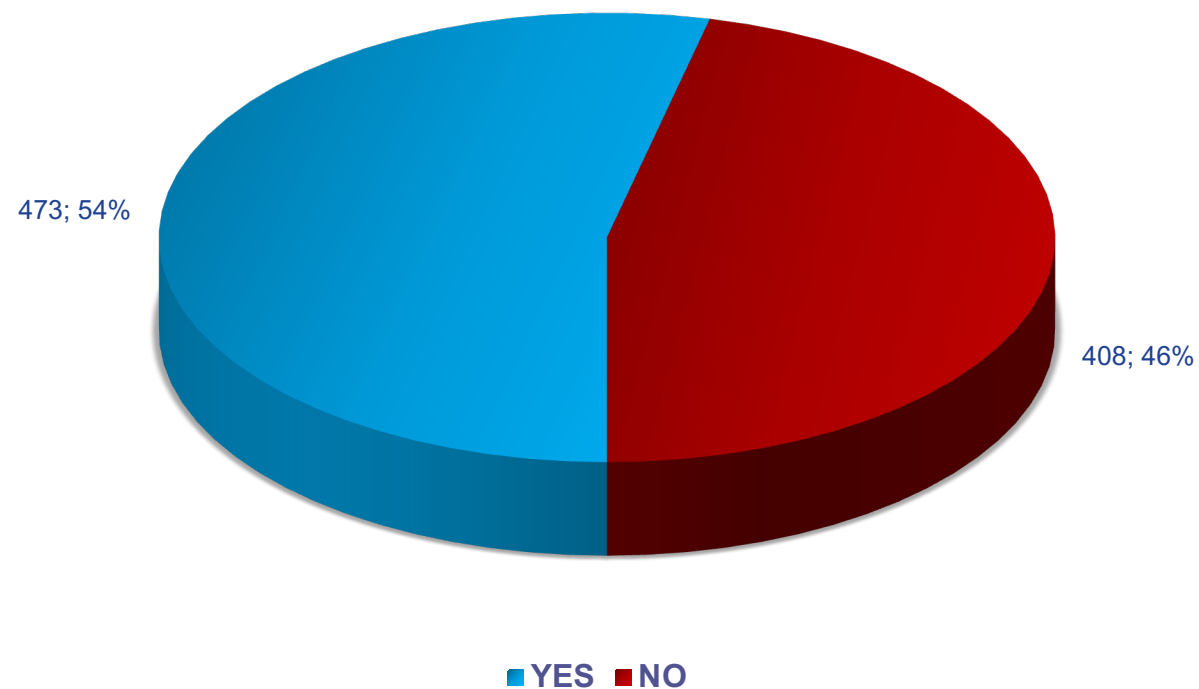
Switch from PD to CKC 2022



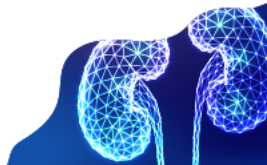
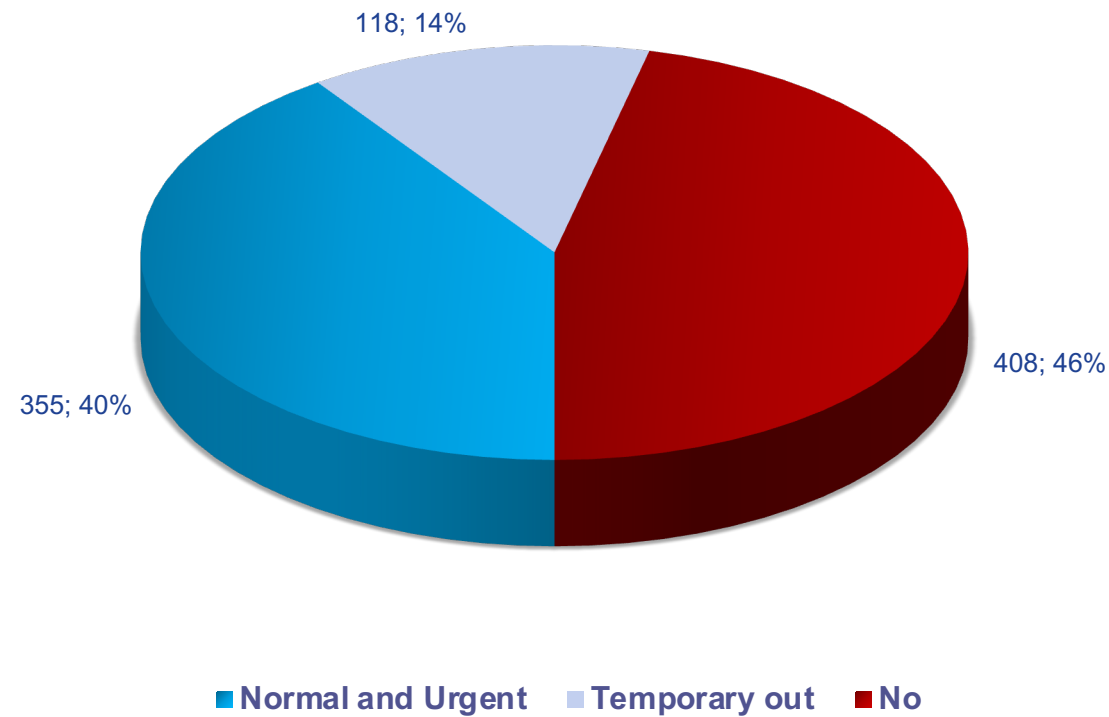
N = 7



PD patients in waiting list for renal transplantation 2022



PD patients in waiting list for renal transplantation Active and temporary contraindication for transplantation 2022



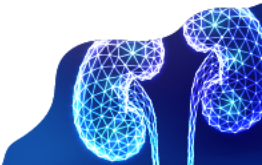
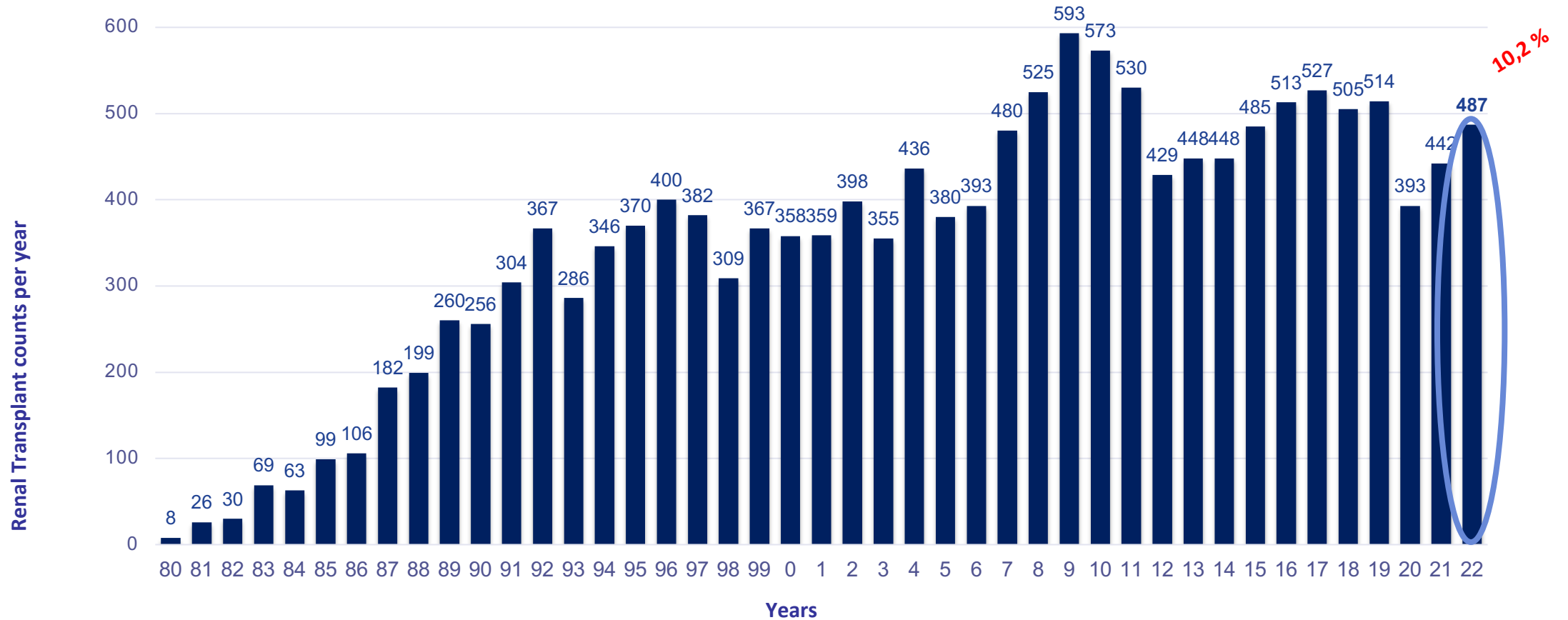
KIDNEY TRANSPLANTATION

ENCONTRO RENAL
16 - 18 NOV 2023
PORTO PALÁCIO

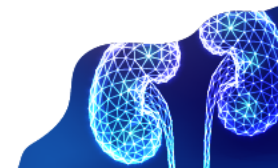
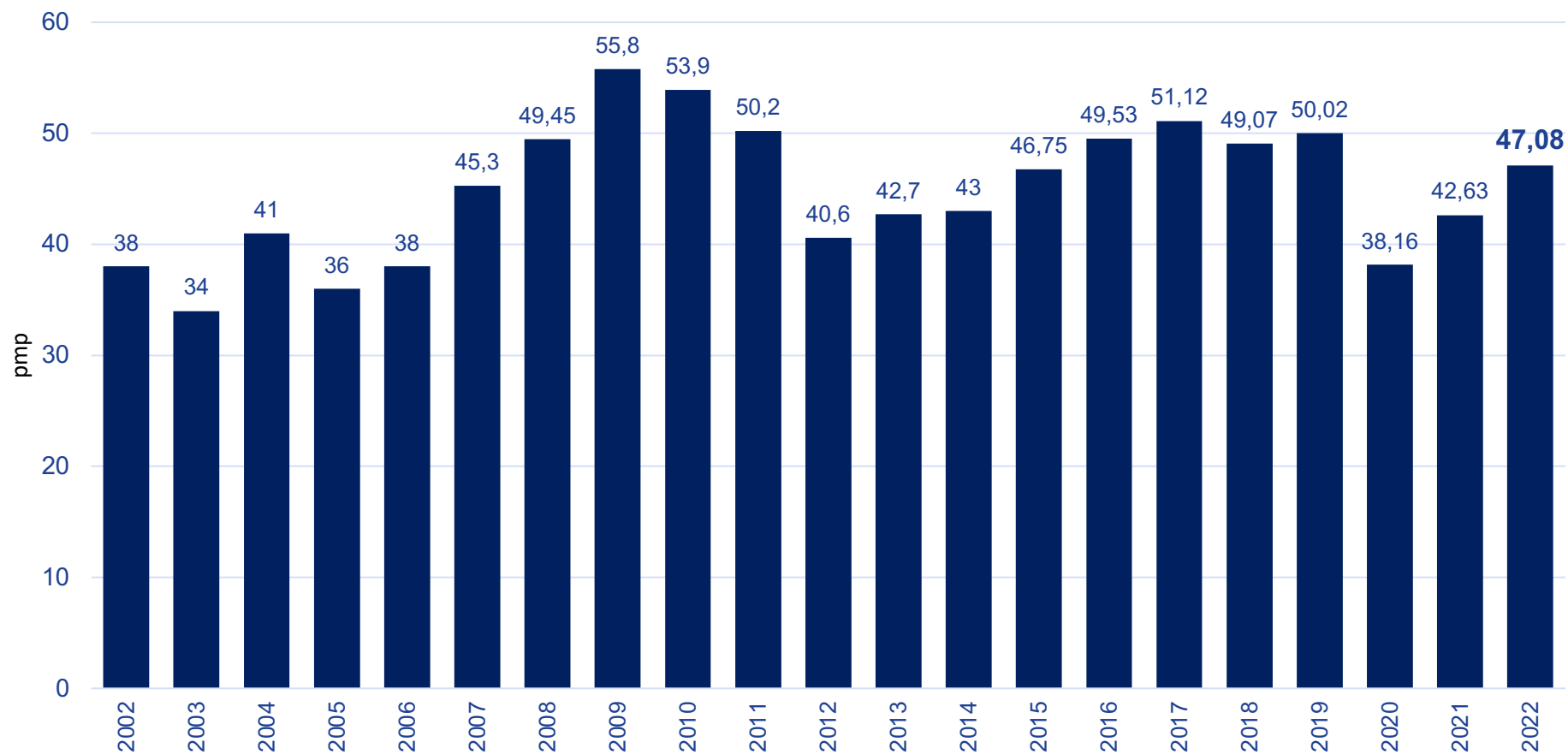


Kidney Transplants performed 1980-2022

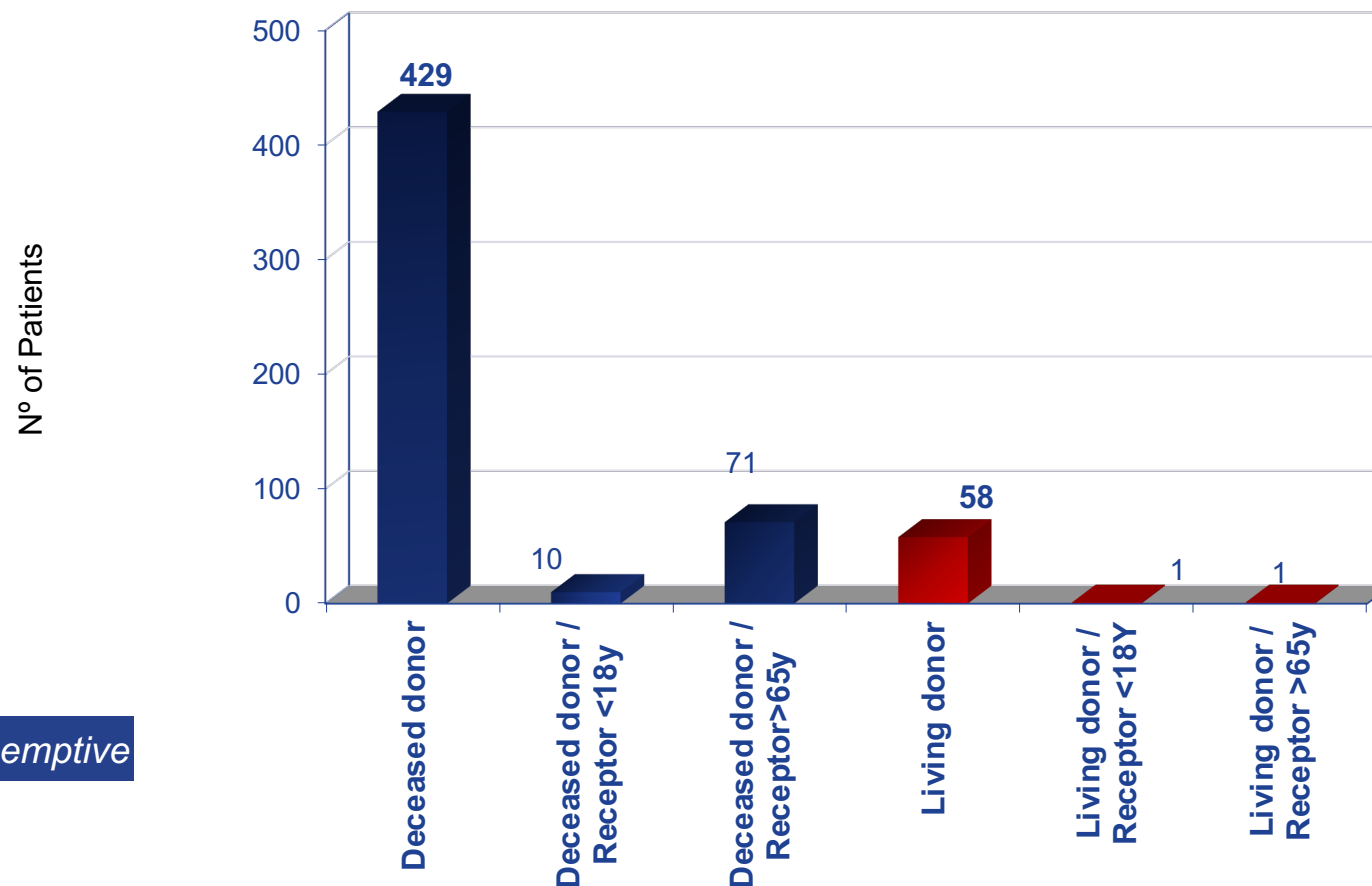
Total = 14992



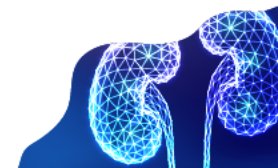
Kidney Transplants Performed *per million population, 2002 - 2022*



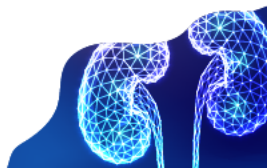
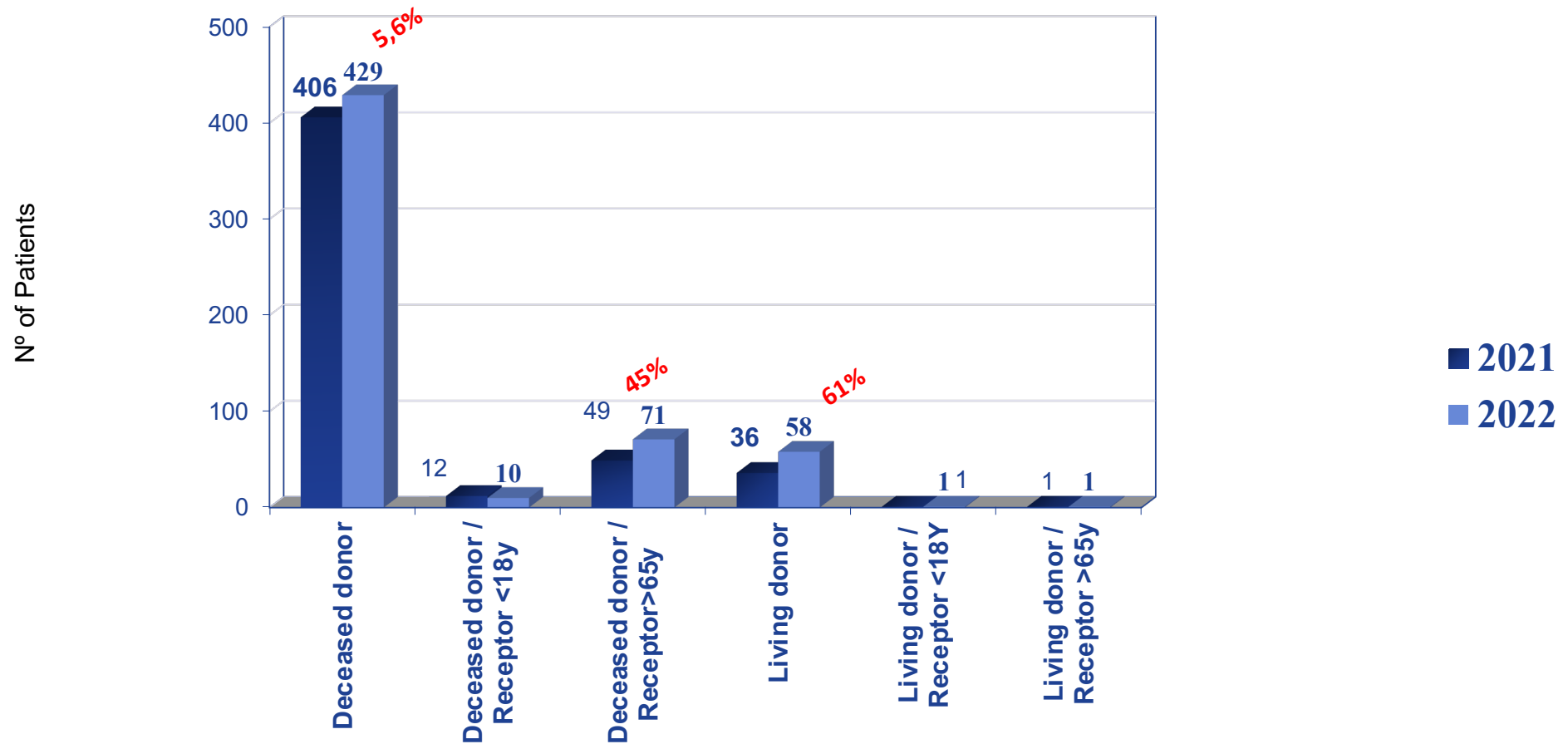
Kidney transplantation activity characterization 2022



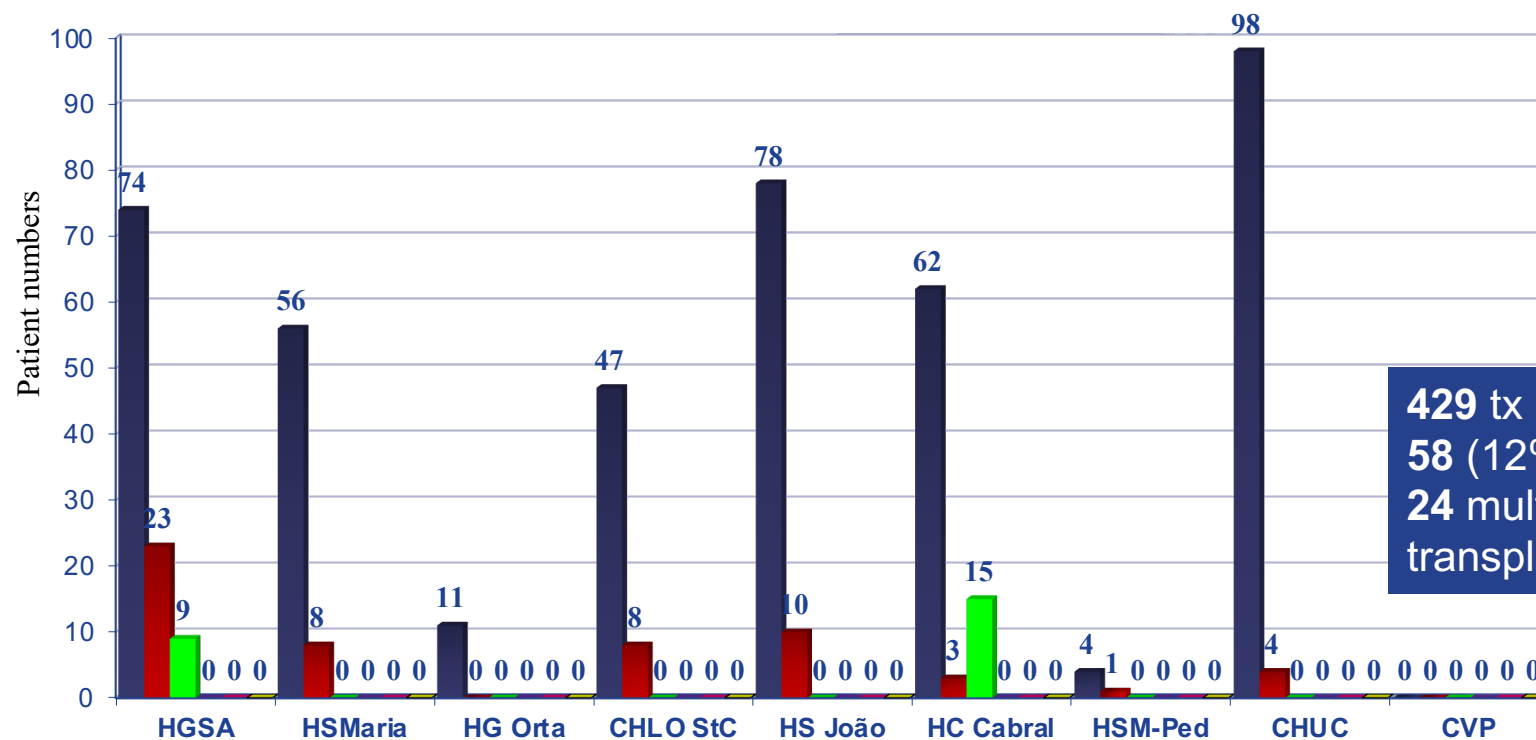
23 pre-emptive



Kidney transplantation activity characterization 2021-2022

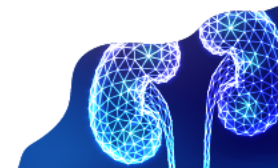


Portuguese Transplant Centers Activity 2022



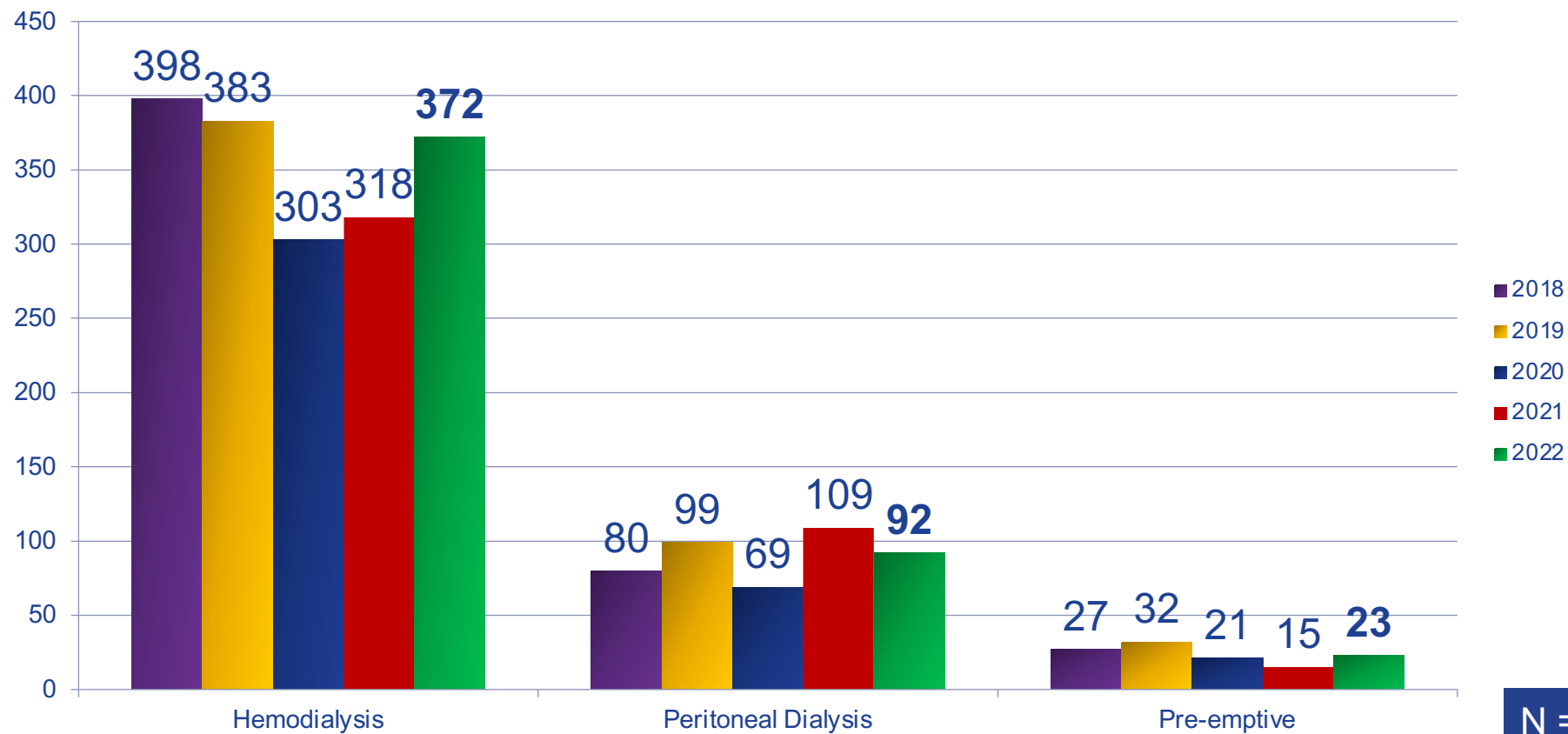
429 tx deceased donor
58 (12%) live donor
24 multi-organ
transplants total = 487

■ Deceased donor ■ Living donor ■ Kidney and Pancreas ■ Kidney and Liver ■ Kidney and Heart ■ Pancreas after Kidney



Kidney Transplanted Patients

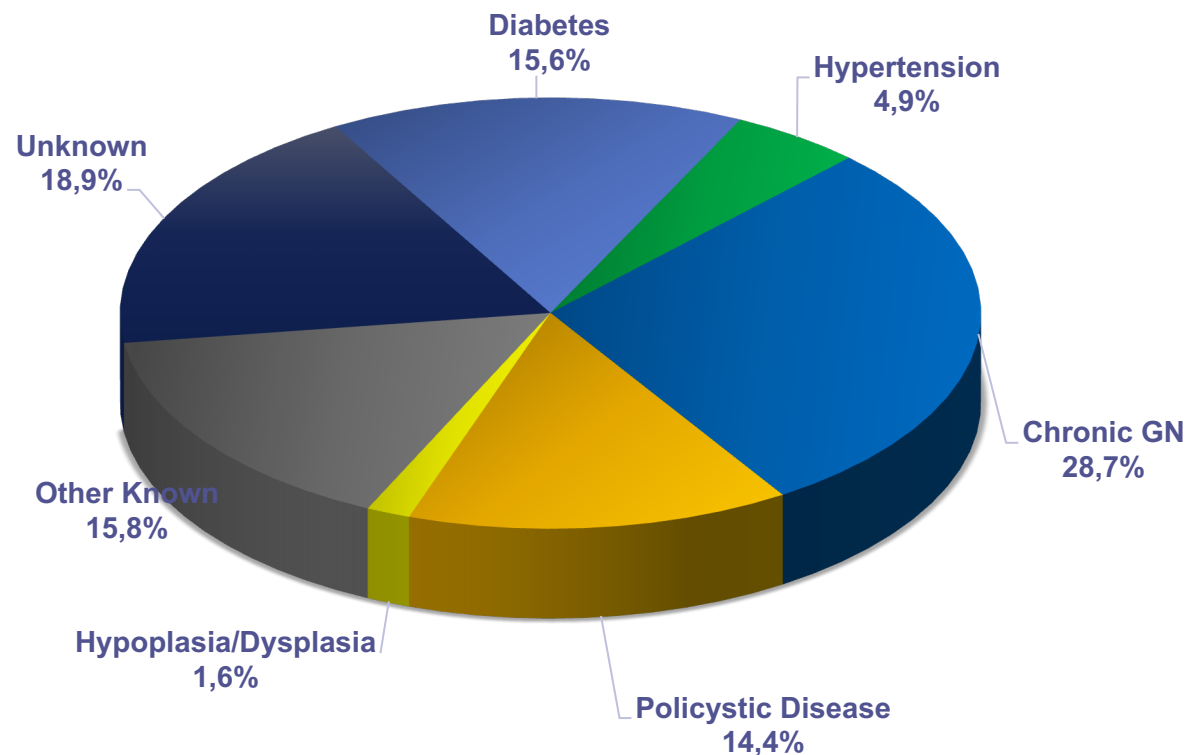
Previous kidney replacement therapy, 2018-2022



N = 487 (2022)



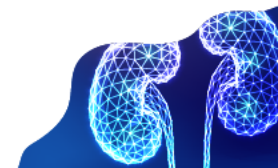
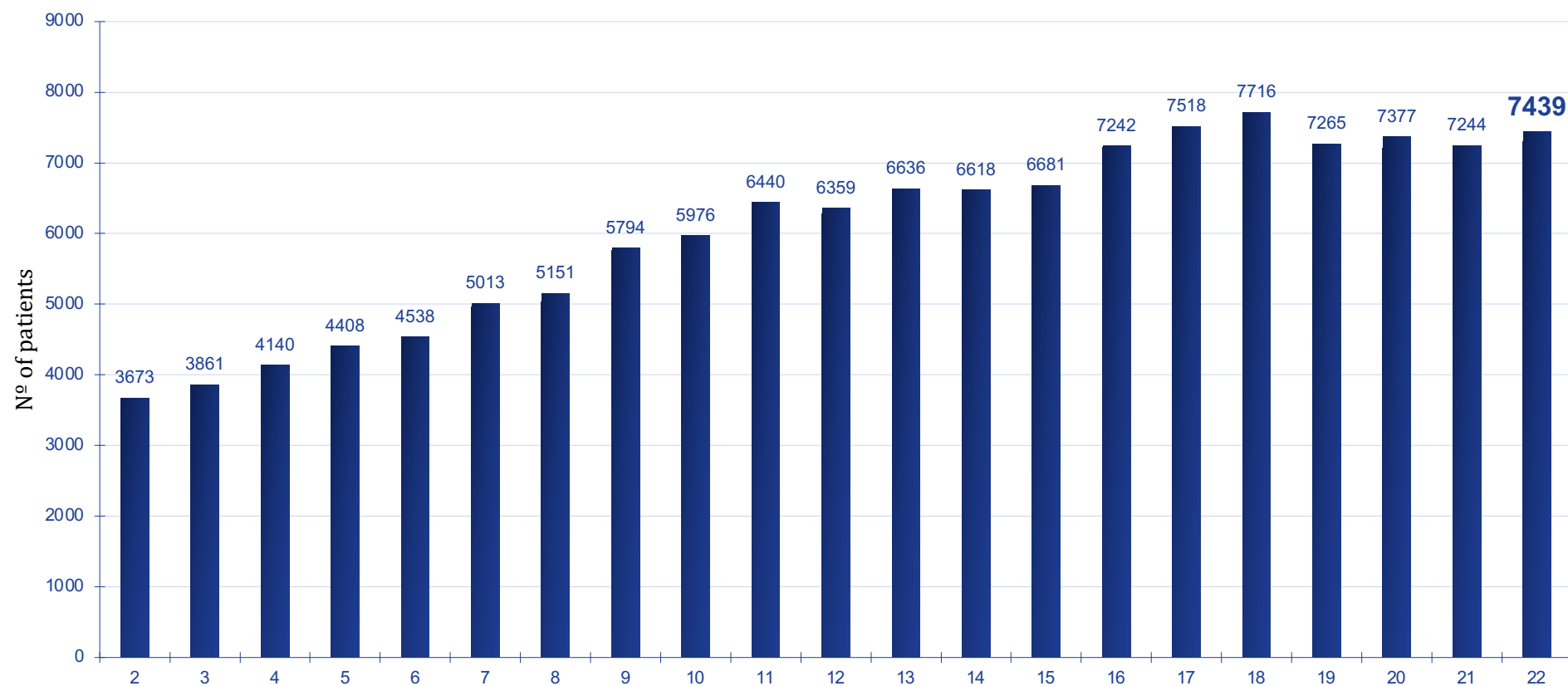
Primary renal disease of kidney transplanted patients *during 2022*



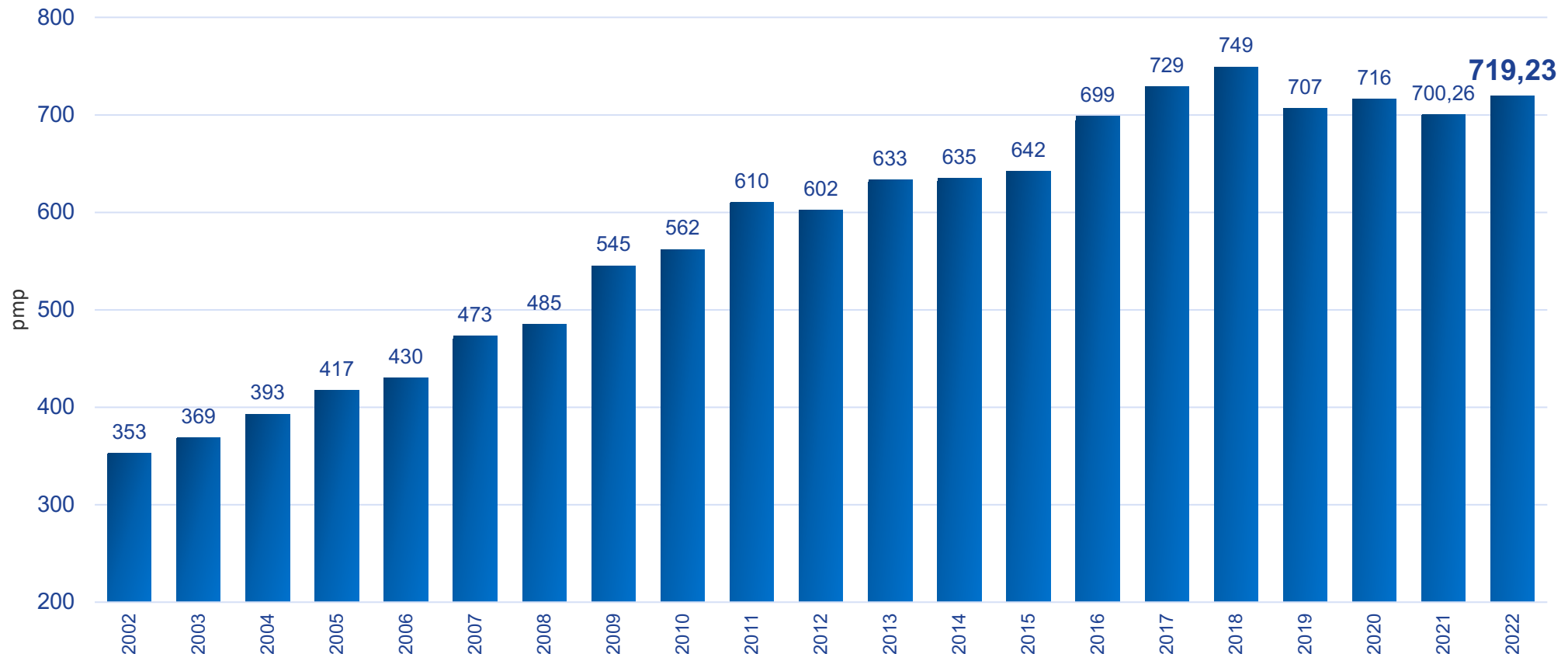
N = 487



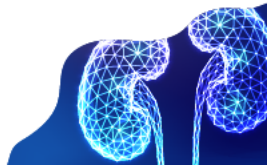
Patients with functioning graft and annual growth *31st December 2002 - 2022*



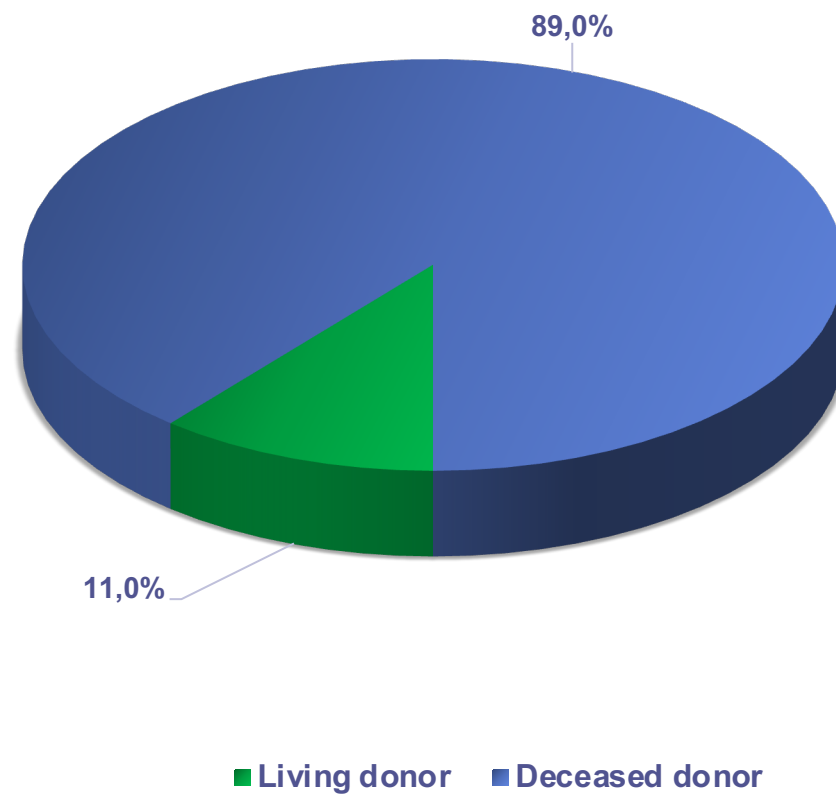
Prevalence of CKD patients with functioning graft *cumulative per million population end of each year 2002 - 2022*



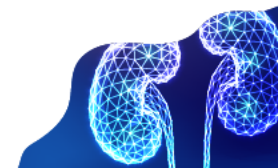
N = 7439



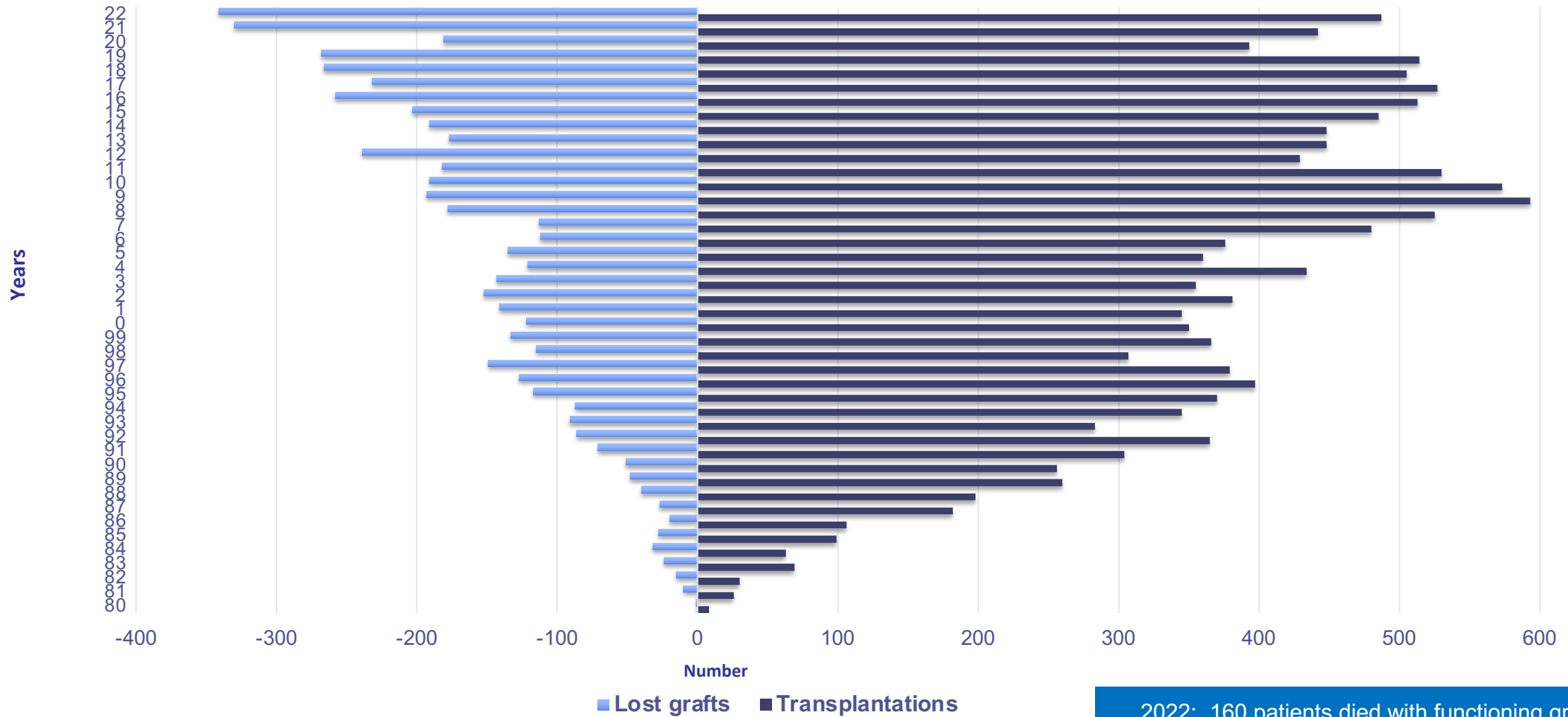
Kidney transplantation: living vs deceased donor 2022



N = 7439



Kidney transplantation activity 1980 - 2022



2022: 160 patients died with functioning graft;
164 transferred to HD / 17 transferred to PD



CONSERVATIVE KIDNEY CARE

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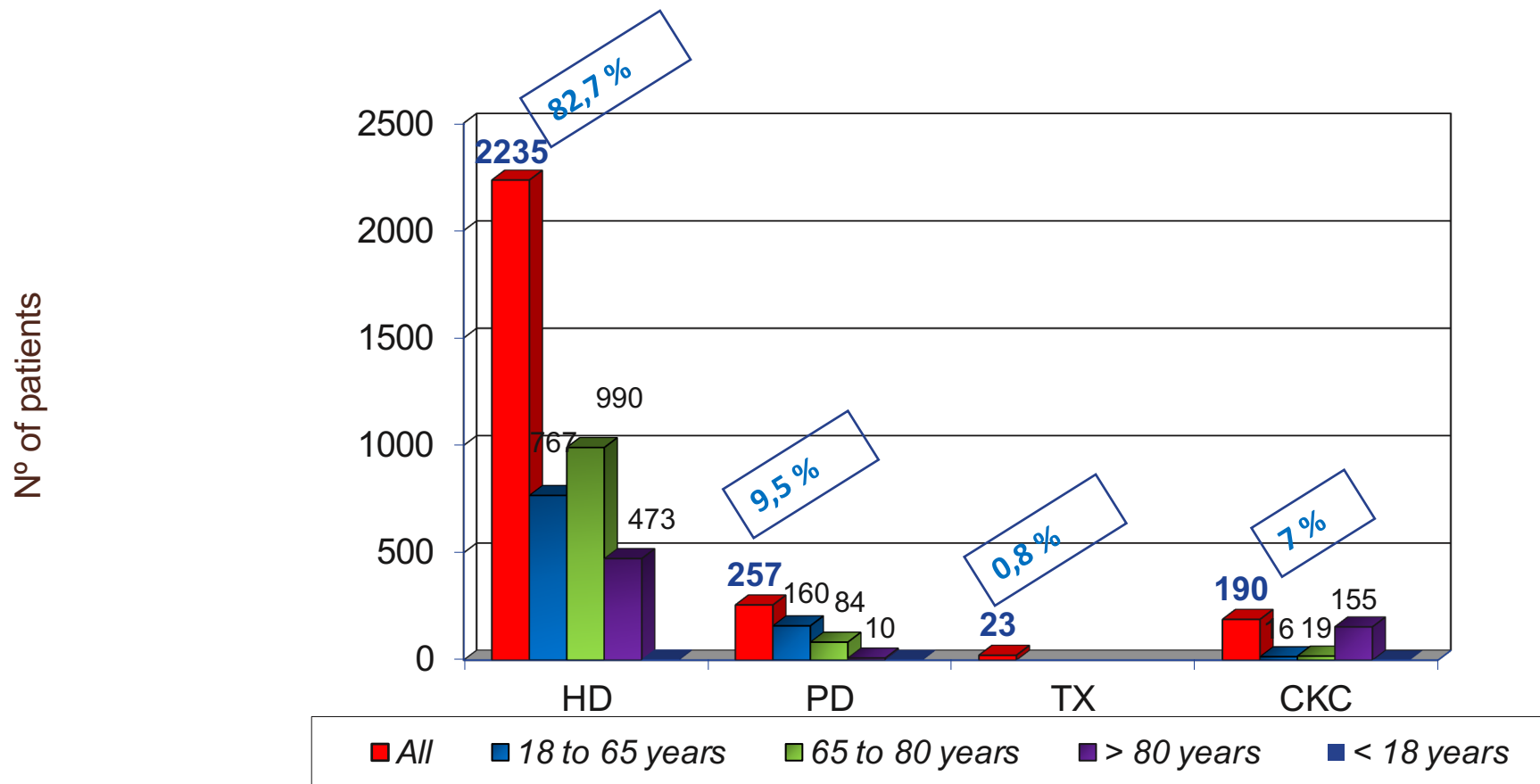


Conservative Kidney Care 2022

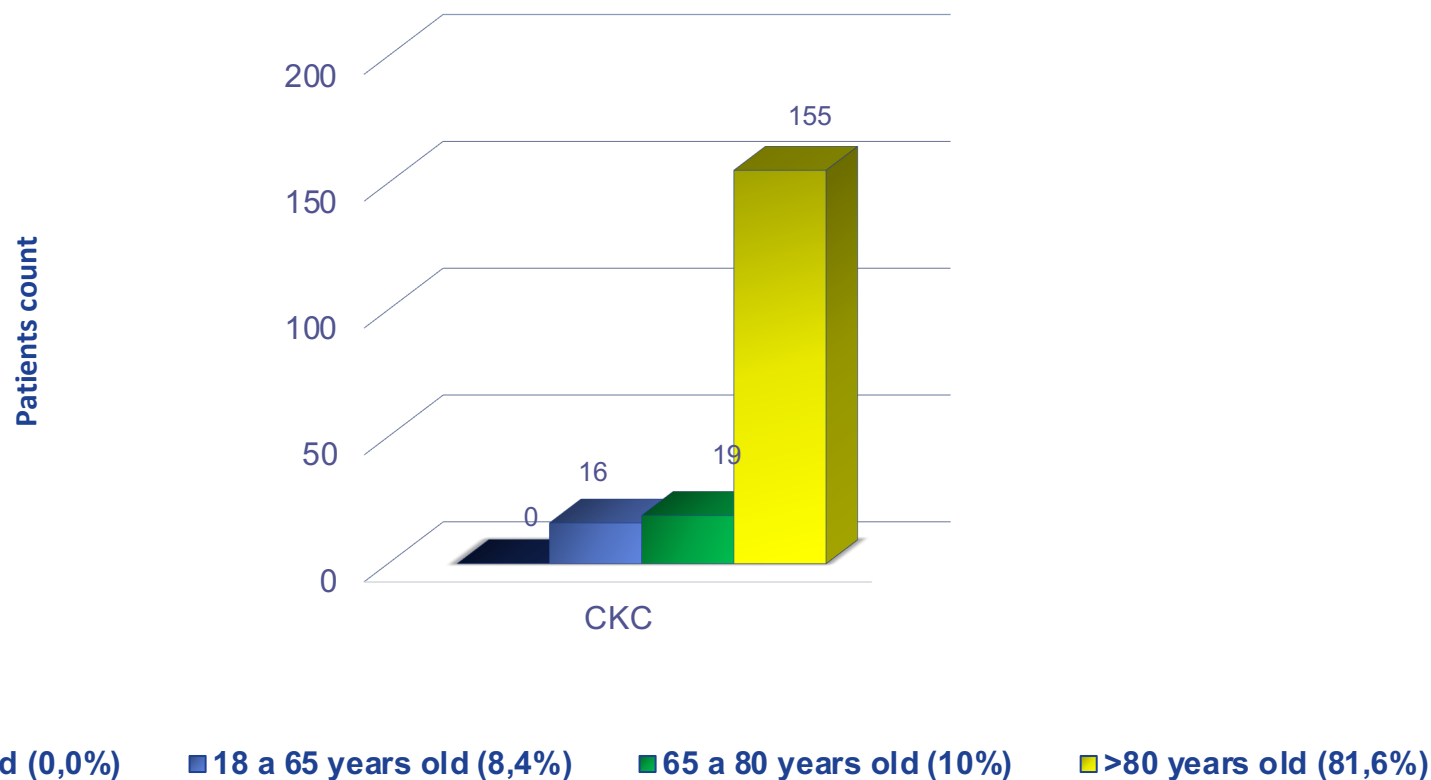
- Questionnaires for Hospital Units (29)
- 14 Hospital Units (48%)
- 7 – Dedicated Team (CKC) (25%)
- 6 – with specialized elements in Palliative Care
- 12 – Articulation with in-hospital palliative care
- 3 – Articulation with community palliative care



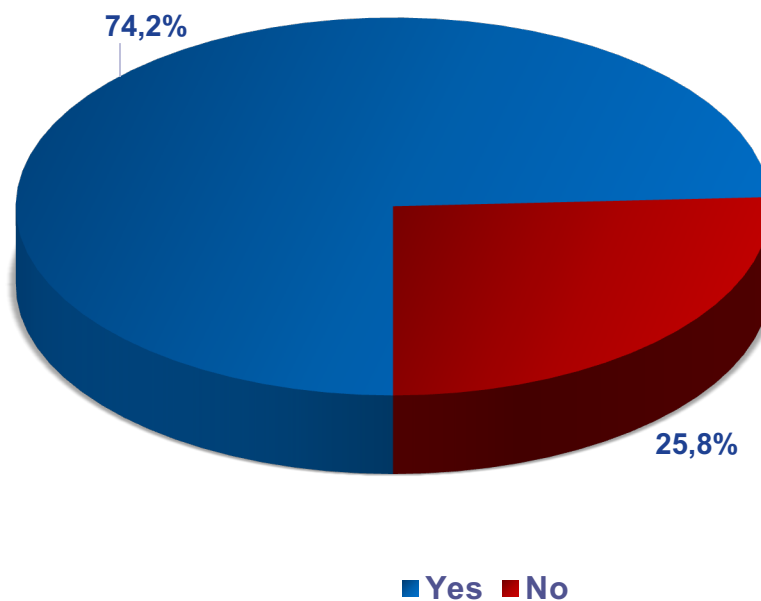
New patients starting KRT during 2022 (*n*=2705)



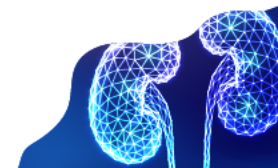
Patients accepted for Conservative Kidney Care *by age group, during 2022*



Previous follow-up by nephrology (> 3 months) CKC patients, 31st of December 2022

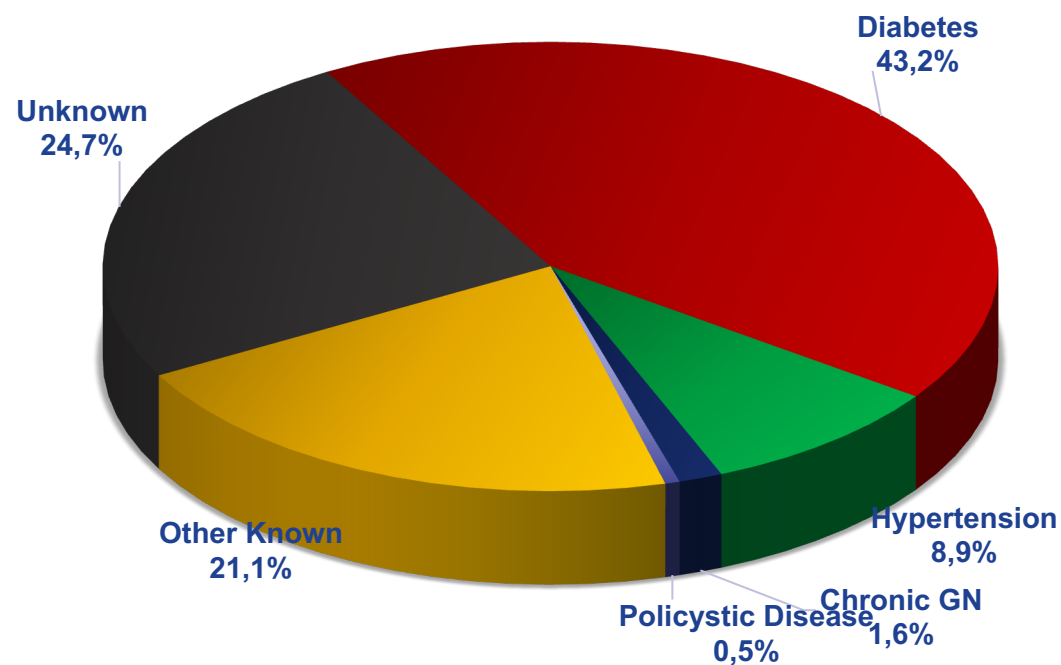


N = 190



Primary renal disease of patients accepted for Conservative Kidney Care *during 2022*

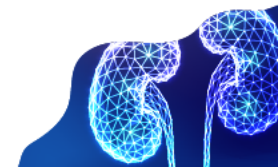
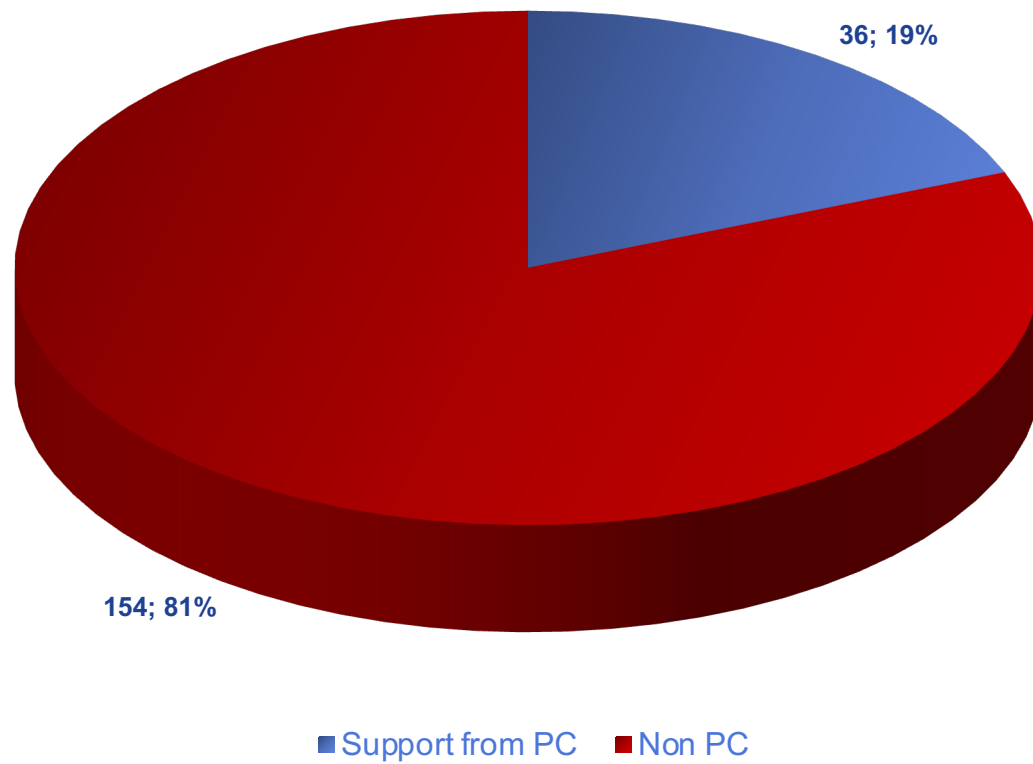
ÍNDICE DE CHARLSON
índice charlson modificado
ajustado a idade (média):
9,3



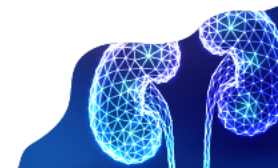
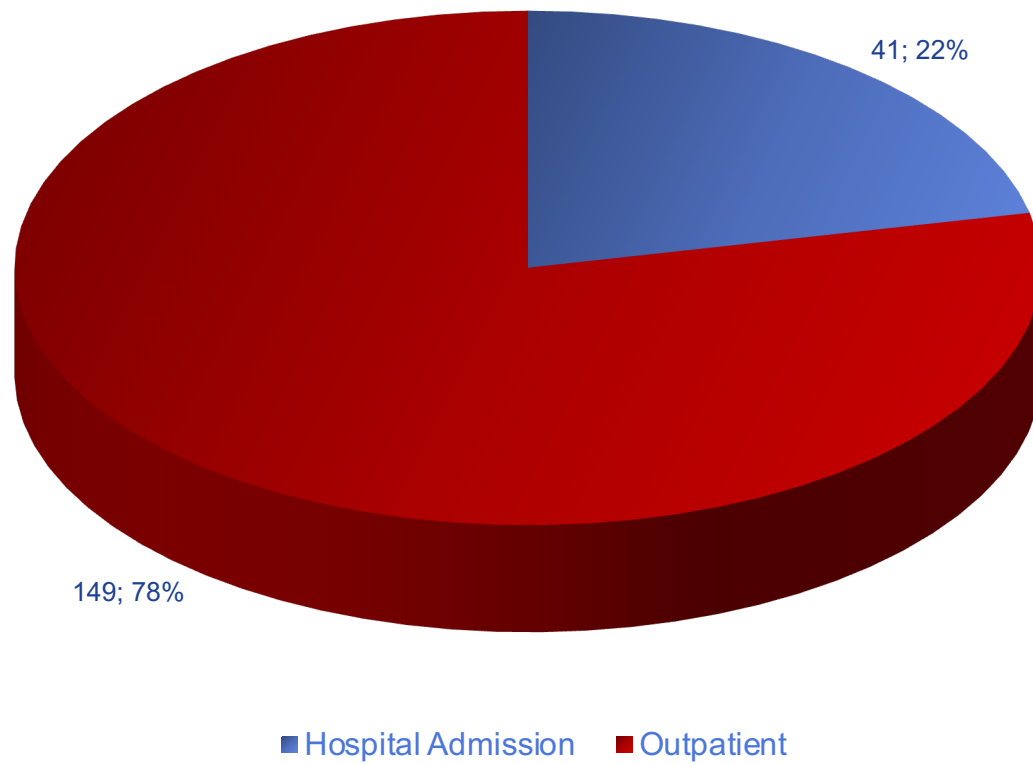
N = 190



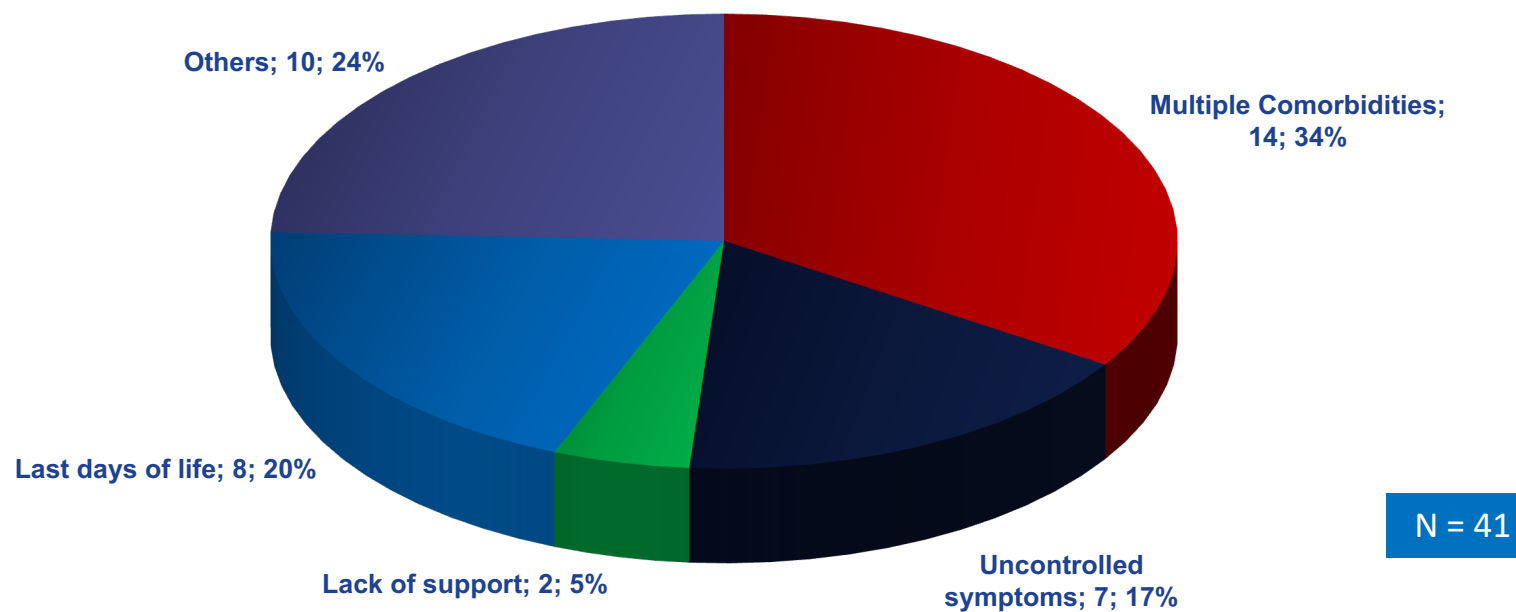
Conservative Kidney Care 2022 ($n=190$) *Differentiated Support from Palliative Care*



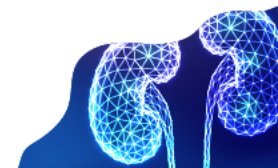
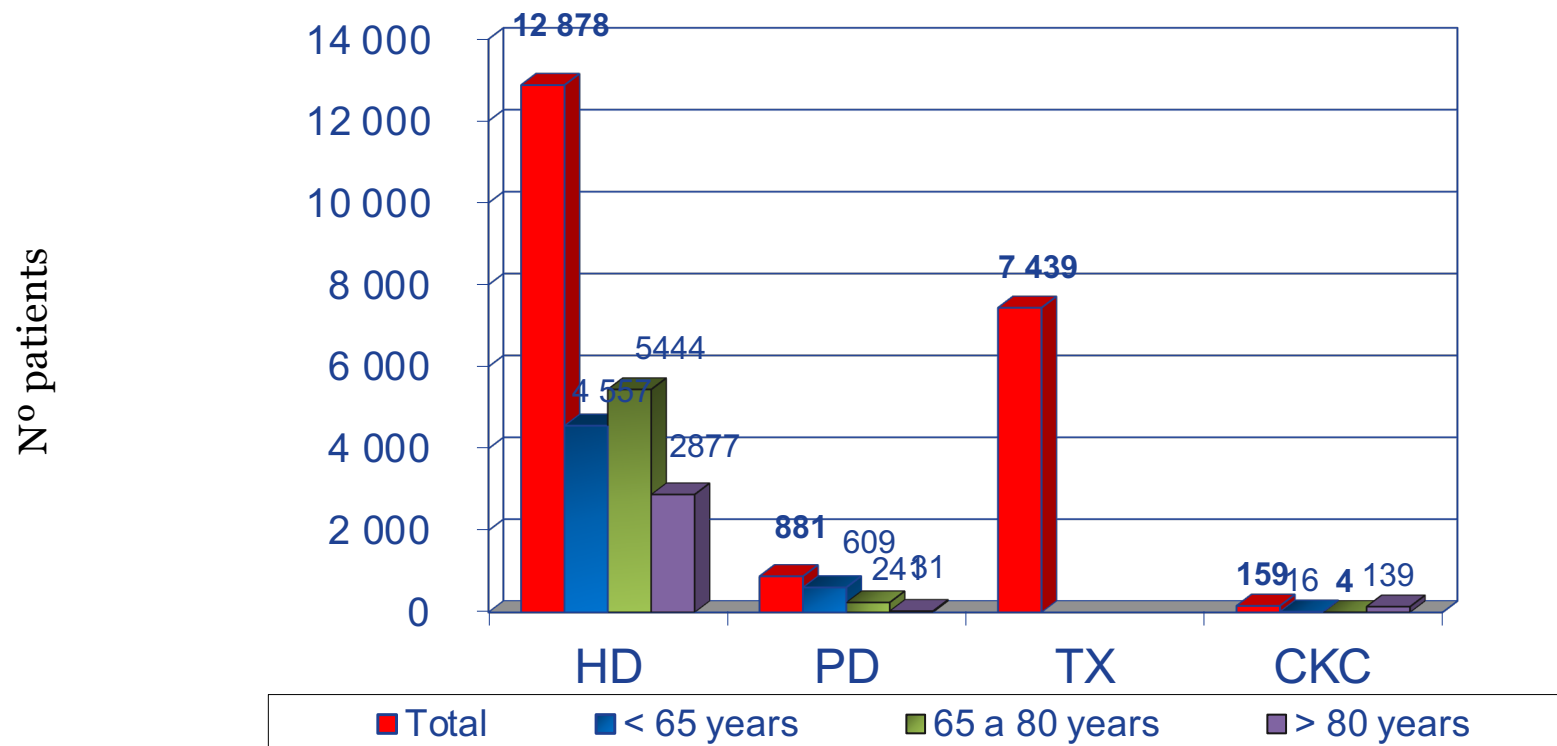
Conservative Kidney Care 2022 (*n*=190) *Hospital Admission*



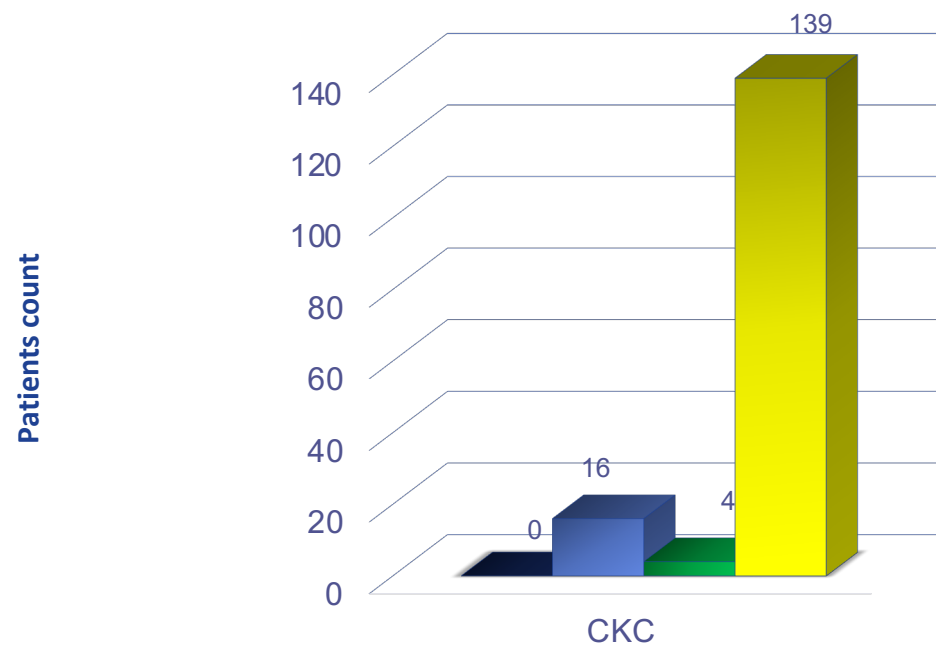
Conservative Kidney Care 2022 *Hospital Admission - Reasons*



Prevalent patients on KRT 31st December 2022



Patients treated by conservative kidney care *by age group, 31st December 2022*



Mean age CKC = 84,5 years

N = 159

■ < 18 years old (0,0%)

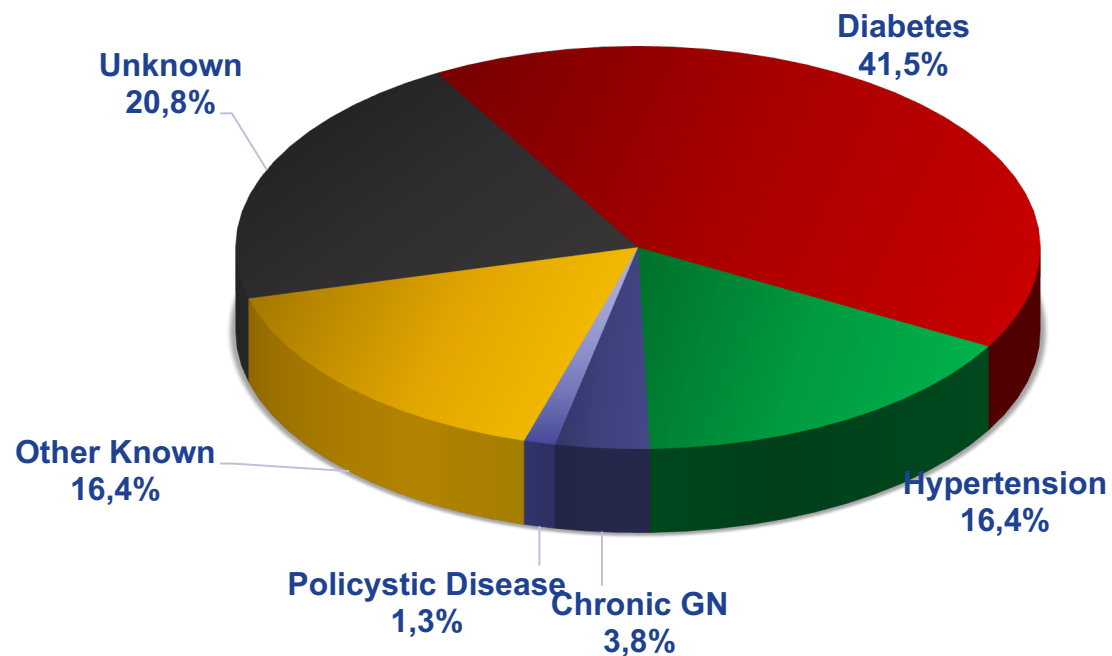
■ 18 a 65 years old (10,1%)

■ 65 a 80 years old (2,5%)

■ >80 years old (87,4%)



Primary renal disease of prevalent patients (CKC) 31st December 2022

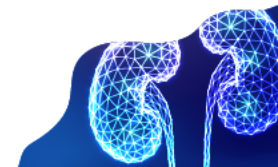


N = 159



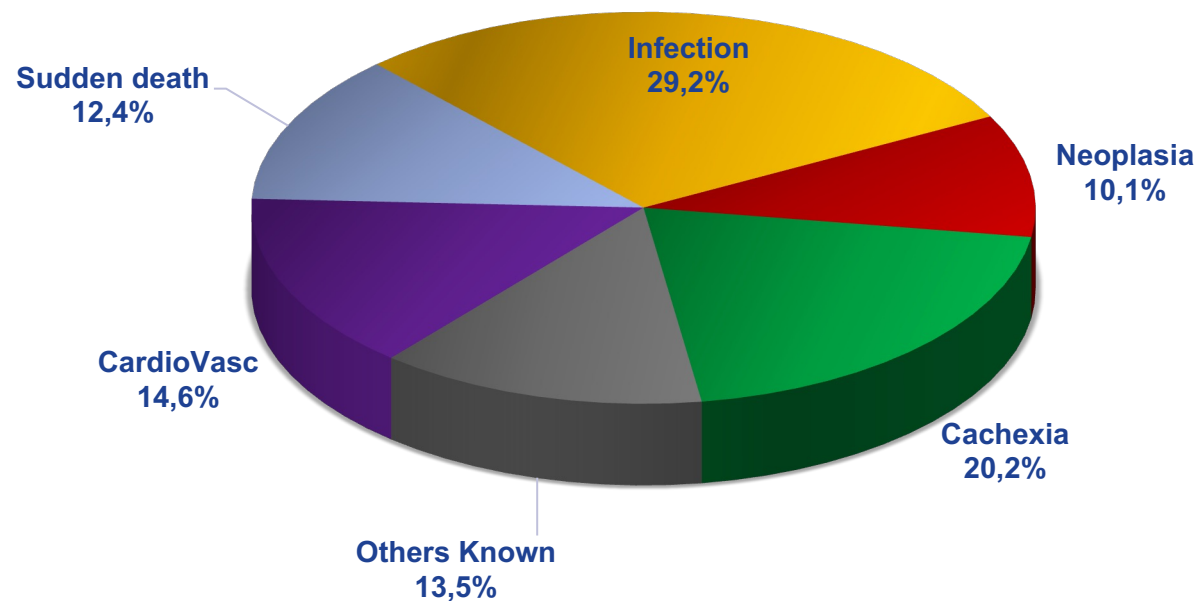
CKC patients movement in 2022

	IN		OUT
New patients	190	Death	93
HD to CKC	32	CKC to HD	12
PD to CKC	2	CKC to PD	0
HD to palliative care	132		
PD to palliative care	7		
Mortality rate = 87 % Mean follow-up time (days) - 169			



Causes of death in CKC patients 2022

N = 93



Portuguese Registry of Kidney Replacement Therapy 2022

- ✓ Incidência de novos doentes a iniciar TSFR é elevada - > 240 pmp
- ✓ 23,6% destes doentes tem > 80 anos
- ✓ A prevalência de doentes sob TSFR continua muito elevada > 2040 pmp
- ✓ A prevalência dos doentes em diálise continua a aumentar (aumento de 2% em relação a 2021)



Portuguese Registry of Kidney Replacement Therapy 2022

Hemodiálise

- ✓ A incidência diminuiu 0,5 % , a Prevalência aumentou 2,2% em relação a 2021
- ✓ Doentes vindos do TX/DP representam 12,6% do total de doentes entrados em HD
- ✓ A idade média aumentou (68,3 anos)
- ✓ Melhoria da % de doentes a iniciar HD por CVC (60,9%) e da taxa de CVC nos doentes prevalentes (19,1%)
- ✓ Continua a diminuir a taxa de mortalidade (12,4%). Causa mais prevalente - Infecção

Diálise Peritoneal

- ✓ A incidência aumentou 0,8%, a Prevalência diminuiu 0,5% em relação a 2021
- ✓ A idade média continua a aumentar
- ✓ A taxa de mortalidade aumentou em relação a 2021 (6,2%)
- ✓ A taxa de peritonites aumentou em relação a 2021 (0,33 episódios/doente.ano)

Transplantação Renal

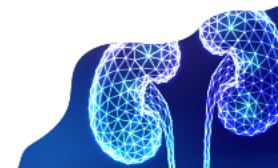
- ✓ A incidência aumentou 10,2% em relação a 2021
- ✓ Crescimento do Tx renal com dador vivo (61% em relação a 2021)
- ✓ Pool de doentes transplantados continua a crescer



Portuguese Registry of Kidney Replacement Therapy 2022

Tratamento Conservador da DRC

- ✓ 48 % das Unidades Hospitalares têm doentes em tratamento conservador e 25 % uma equipa dedicada ao TC
- ✓ 86 % destas Unidades têm elementos com formação em Cuidados Paliativos
- ✓ 7% do total de doentes incidentes iniciou TC (82% > 80 anos)
- ✓ Elevada % de DM como causa da DRC
- ✓ Mortalidade elevada – 87%
- ✓ Tempo médio de seguimento – 169 dias
- ✓ Apenas 22% necessitou de internamento e 19% de Cuidados Paliativos diferenciados
- ✓ A suspensão de Diálise parece não estar articulada com as Equipas de TC



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PORTO PALÁCIO NOV 2023

**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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