

Conference Theme  
**True Partnership and Global Approach  
in Management of Renal Care**



Scientific Programme

# Multiborbidity in renal care

## Evolution of mobility

30 years registration (evolution)  
of 'dialysis practise'

in Flanders (Belgium)

Paul Van Malderen  
O.LV ZH - Aalst - Belgium  
on behalf of ORPADT



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The patient population with a renal function replacement therapy today, represents a large group of patients with a significantly increased "morbidity - comorbidity problem"

Care for these patients has become more complex and requires a wider focus than simply performing and following the treatment.

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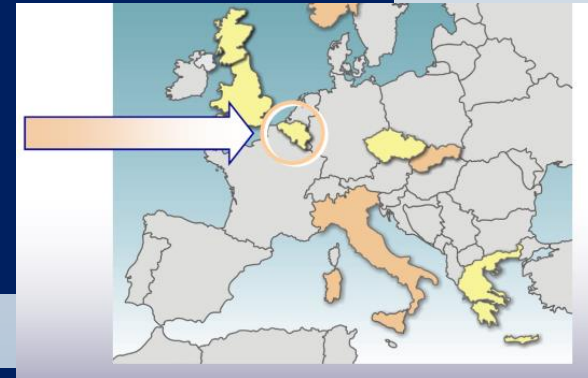
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# 1. Multimorbidity in renal care

Comorbidity in patients starting RRT

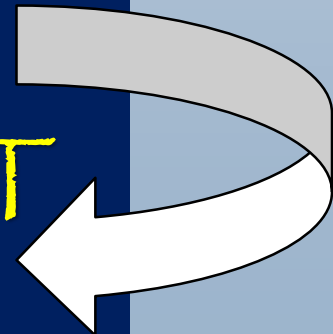
“the reality today”



# 2. Evolution of renal practice over time

How we treat our patients today?

A (selected) view on the ORPADT  
'practise data'



# Comorbidity of new patients starting Renal Replacement Therapy in Europe (source EDTA)

**Table 1.** Comorbidities in adult patients starting RRT in 2014, by country

	All		Diabetes mellitus (as comorbidity or PRD)			Diabetes mellitus (comorbidity only)			Diabetes mellitus (as PRD)			Ischaemic heart disease			Congestive heart failure*			Peripheral vascular disease			Cerebrovascular disease			Malignancy			Number of comorbidities**			
	N	Pmp	Yes	No	Miss	Yes	No	Miss	Yes	No	Miss	Yes	No	Miss	Yes	No	Miss	Yes	No	Miss	Yes	No	Miss	Yes	No	Miss	0	1	2	≥3
			%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Austria	1021	150	41.9	53.2	4.9	16.6	78.6	4.9	25.4	74.6	0	29.5	64.3	6.3	23.3	70.5	6.2	22.9	70.8	6.3	29.1	64.6	6.3	17.5	76.5	6.0	26.9	25.9	19.4	27.8
Belgium (Dutch speaking)	1145	227	40.3	57.6	2.1	22.3	75.6	2.1	18.1	81.9	0	34.2	63.1	2.6	30.5	66.8	2.7	23.4	74.0	2.6	17.9	79.6	2.5	20.2	77.4	2.4	23.9	25.7	24.7	25.7
Belgium (French speaking)	828	227	37.8	60.4	1.8	15.1	83.1	1.8	22.7	77.3	0	20.4	77.3	2.3	21.6	76.1	2.3	12.8	84.9	2.3	10.5	87.2	2.3	12.2	85.5	2.3	40.7	27.4	14.1	17.8
Denmark	741	170	36.2	63.6	0.3	11.5	88.3	0.3	24.7	75.3	0	24.0	75.7	0.3	19.7	80.0	0.3	17.3	82.5	0.3	18.8	81.0	0.3	19.4	80.3	0.3	26.7	33.3	24.3	15.7
Finland	447	105	47.4	50.1	2.5	10.5	87.0	2.5	36.9	63.1	0	22.8	75.4	1.8	8.9	85.7	5.4	17.2	80.5	2.2	11.2	86.1	2.7	15.0	77.2	7.8	31.5	35.8	17.7	15.0
Iceland ***	40	84	27.5	72.5	0	15.0	85.0	0	12.5	87.5	0	40.0	55.0	5.0	27.5	62.5	10.0	17.5	65.0	17.5	12.5	82.5	5.0	12.5	85.0	2.5	37.5	20.0	15.0	27.5
Norway	511	132	33.1	66.9	0	15.5	84.5	0	17.6	82.4	0	28.6	71.0	0.4	18.0	81.4	0.6	19.6	80.0	0.4	16.6	83.0	0.4	19.2	80.8	0	31.3	31.1	18.6	19.0
Spain (Aragon)	162	150	41.4	58.6	0	16.7	83.3	0	24.7	75.3	0	14.8	85.2	0	18.5	81.5	0	9.3	90.7	0	5.6	94.4	0	5.6	94.4	0	42.6	29.6	21.0	6.8
Spain (Catalonia)	1169	195	40.0	54.5	5.5	17.1	77.0	5.5	22.5	77.5	0	20.5	73.3	6.2	-	-	-	17.9	76.0	6.2	10.6	83.2	6.2	15.2	72.6	12.1	39.8	28.8	21.5	9.9
Spain (Galicia)	396	172	41.4	58.6	0	12.6	87.4	0	28.8	71.2	0	19.7	80.3	0	23.0	77.0	0	19.7	80.3	0	8.6	91.4	0	14.1	85.9	0	31.1	33.1	20.2	15.7
Sweden	1140	152	38.2	61.8	0	14.2	85.8	0	23.9	76.1	0.1	22.5	77.5	0	-	-	-	10.9	89.1	0	12.2	87.8	0	15.9	84.1	0	40.1	32.5	17.6	9.8
All countries	7578	168	39.5	58.3	2.2	15.9	81.9	2.2	23.5	76.5	0.0	25.0	72.4	2.6	22.3	75.0	2.7	17.7	79.7	2.7	15.5	81.9	2.6	16.4	79.8	3.8	30.0	29.1	20.3	20.6

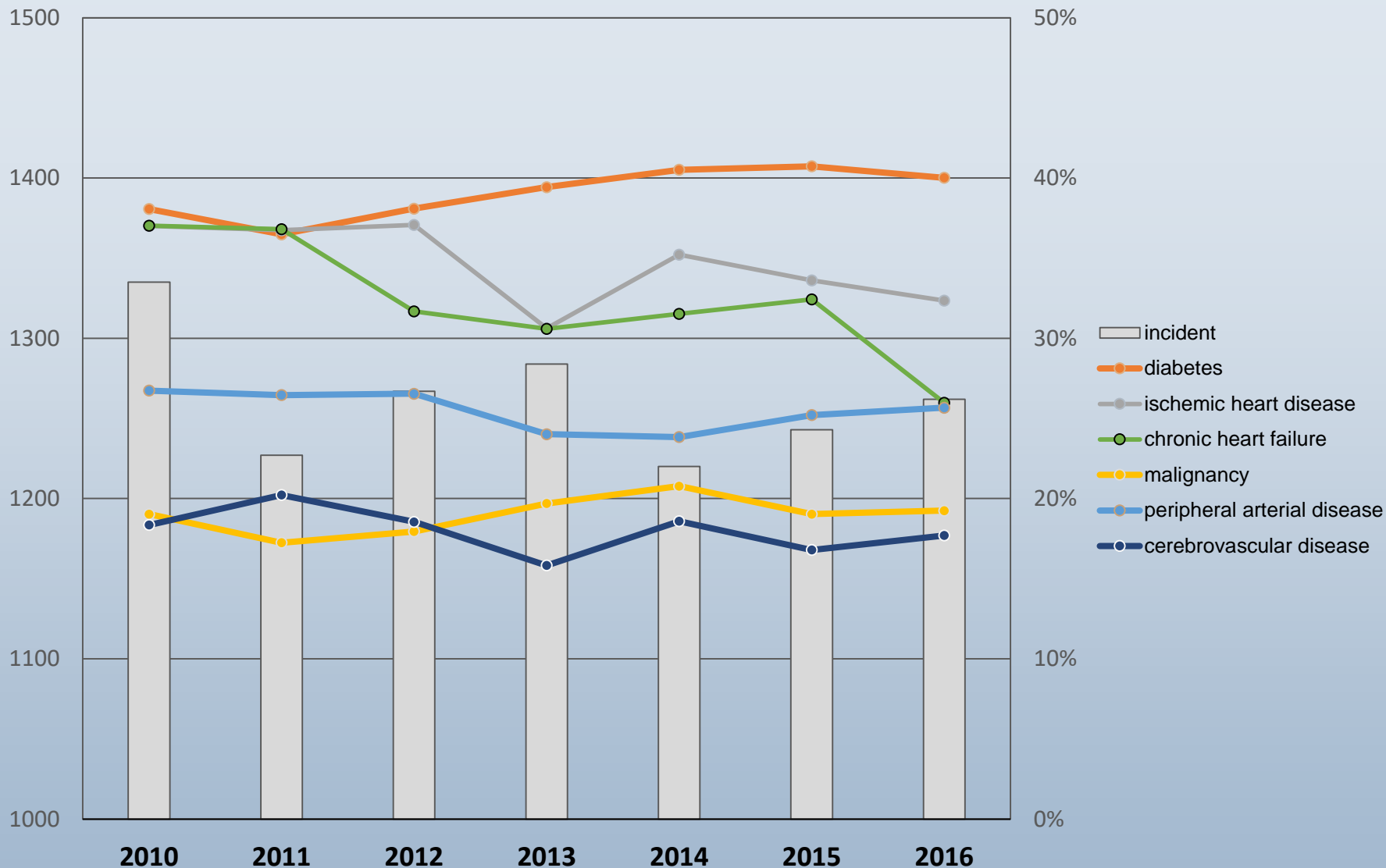
Abbreviations used: PRD = primary renal disease, Pmp = per million population, Miss = missing

Percentages are row percentages.

\* For 'All countries' data from Spain (Catalonia) and Sweden were excluded.

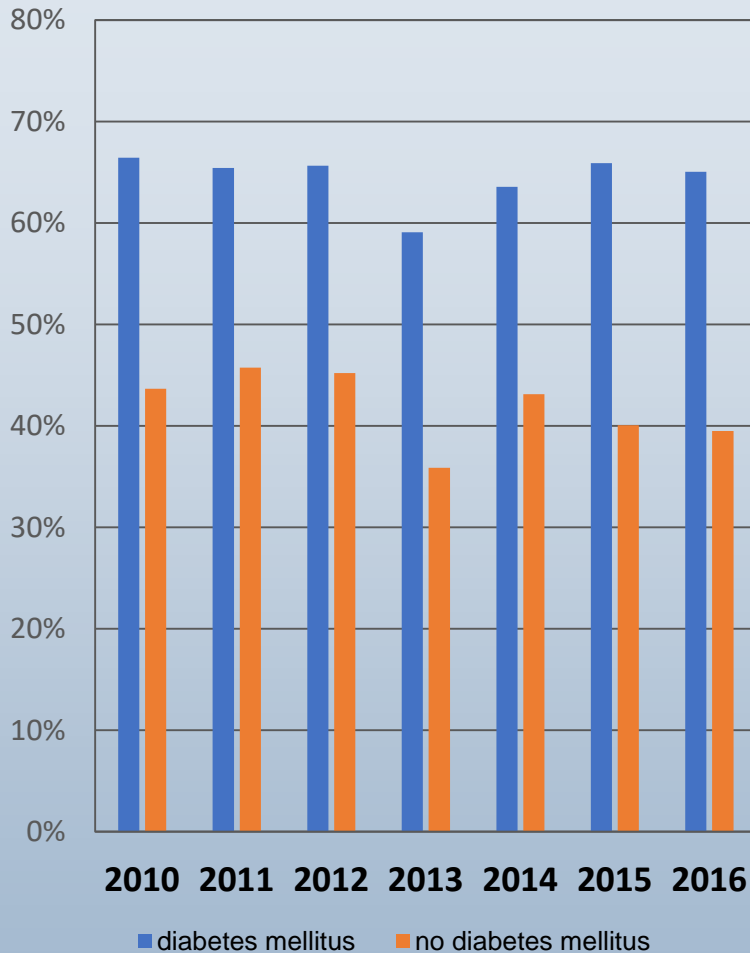
\*\* For the sum of comorbidities diabetes mellitus was included when present as comorbidity or as primary renal disease; for Spain (Catalonia) and Sweden the number of comorbidities does not include CHF; for 'All countries' data from Spain (Catalonia) and Sweden were excluded.

\*\*\* Data included patients starting RRT in 2013 and 2014.

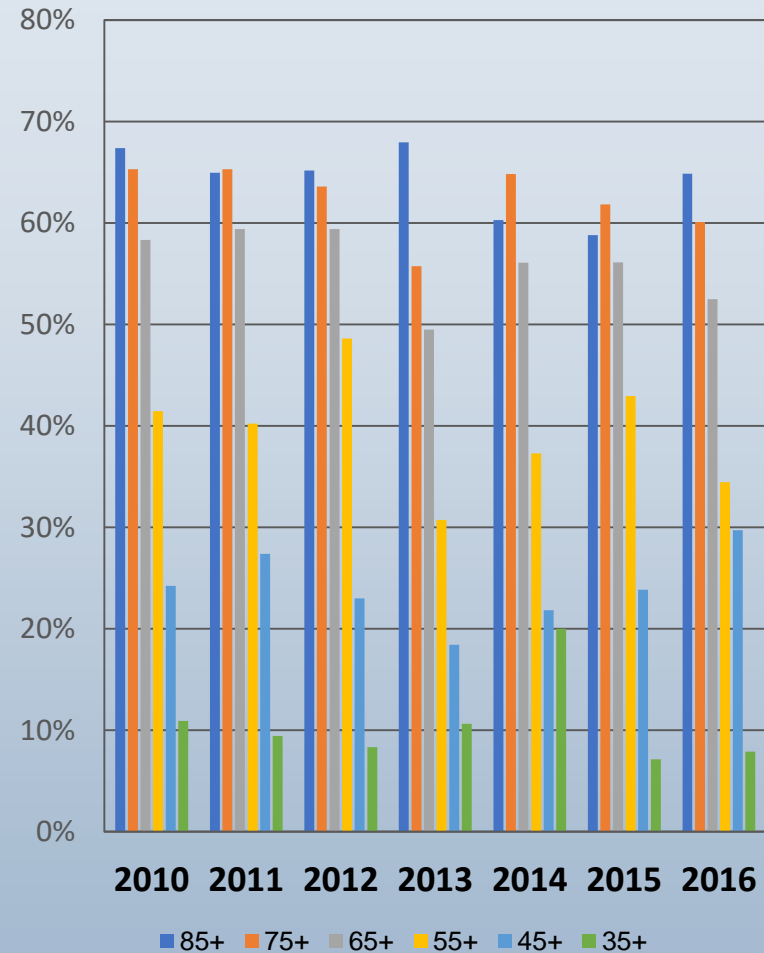


NBVN – Belgium : incident RRT patients per year: number, percentages (selected) comorbidities

composite cardiovascular comorbidity

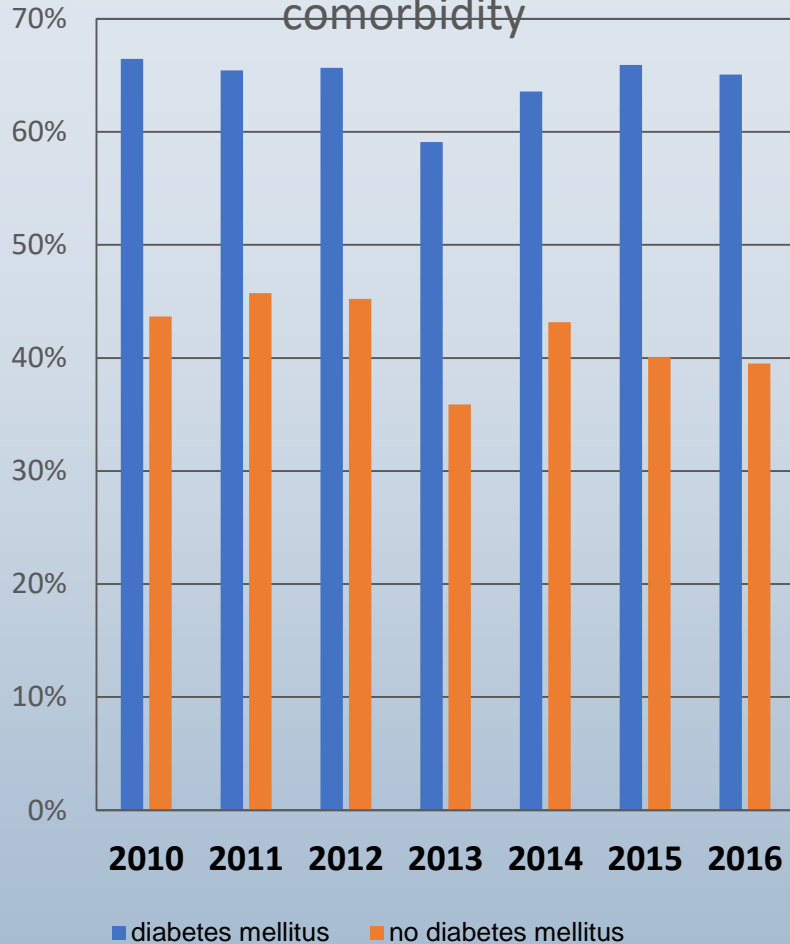


composite cardiovascular comorbidity

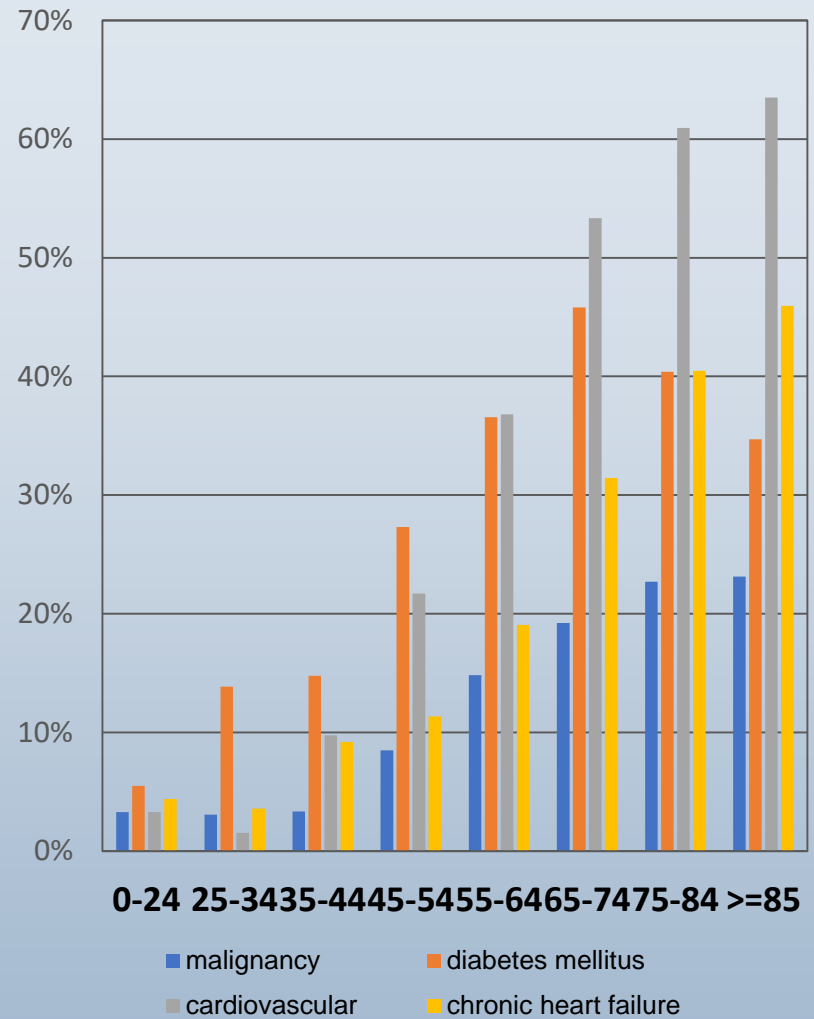


NBVN – Belgium : incident RRT patients per year: **(!! registry new RRT patients )**  
 percentage composite cardiovascular comorbidity ( *ischemic heart disease, peripheral arterial disease, cerebrovascular disease* ), according to presence / absence of diabetes mellitus, and according to age class (years)

composite cardiovascular comorbidity



comorbidity – age class



NBVN – Belgium : incident RRT patients per year: 1. Percentage composite cardiovascular comorbidity (*ischemic heart disease, peripheral arterial disease, cerebrovascular disease*), according to presence / absence of diabetes mellitus. 2. Comorbidity according to age class (*years*)



*With the support of :*

*NBVN (Nederlandstalige Belgische Vereniging voor Nefrologie)*

*DTV (Dialyse Technici Vereniging)*

*VND (Vlaamse Nefrologische Diëtisten)*

*SWDT (Sociale Werkers Dialyse Transplantatie)*

## *ORPADT-survey*

Since 1988 the Flemish dialysis and transplant nurses' organization, ORPADT, has charted the nephrological care practice in Flanders through a 3-year survey. The query focuses on a multidisciplinary approach to the numerous facets of our professional practice and allows us to analyze evolutions of the patient on different medical, nursing, organizational aspects.

*Results : ..... ← (end) 2015*



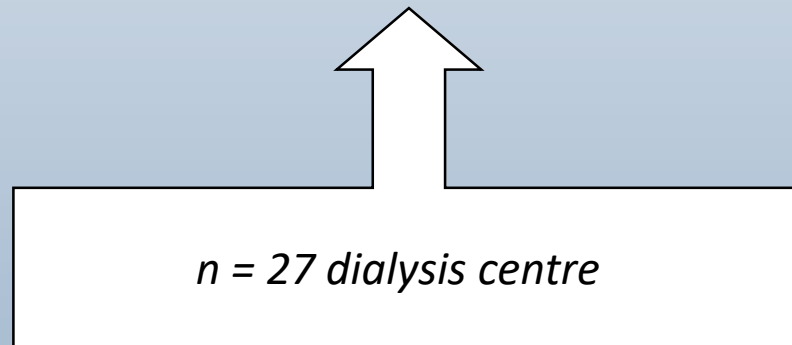
## The ORPADT survey consisted of a centre and a unit questionnaire

The ORPADT questionnaire consists of a centre questionnaire and a unit questionnaire. The centre questionnaire included a general descriptive part (description of the centre, modalities offered, number of patients and staff...), treatment specific parts (peritoneal dialysis, transplantation, patients), specific parts (for technician, dietitian, social worker).....

The unit questionnaire focused on haemodialysis treatment and was completed in each location of the centre where haemodialysis was organized (main units and satellites). The situation of the last day of the year has been studied.



# *Results of the centre questionnaire*

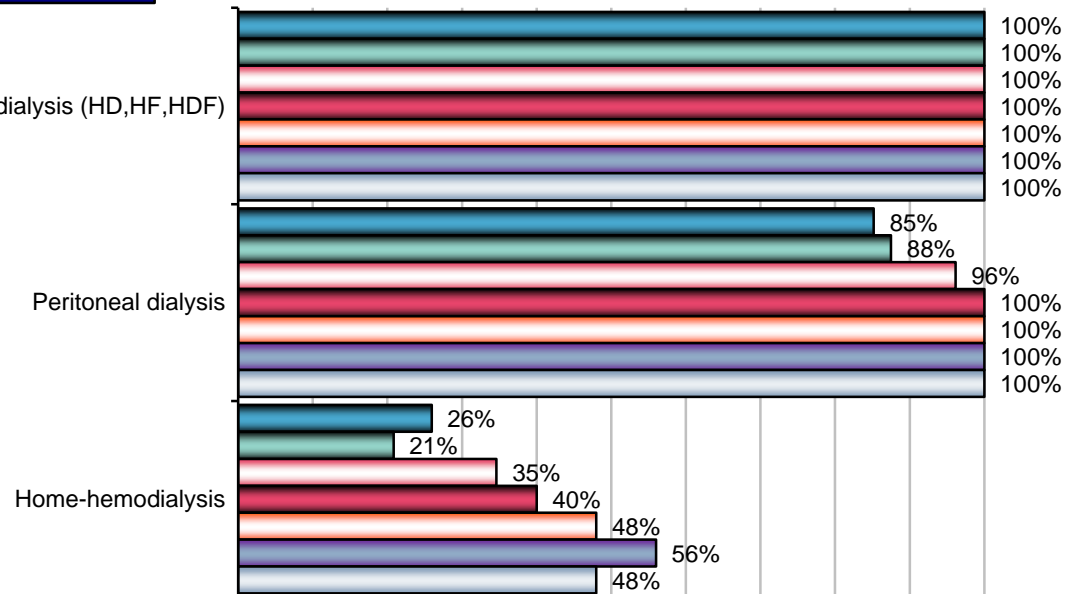
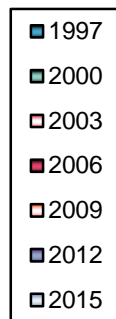




# Dialysis modalities in the centres

## Evolution dialysis modalities

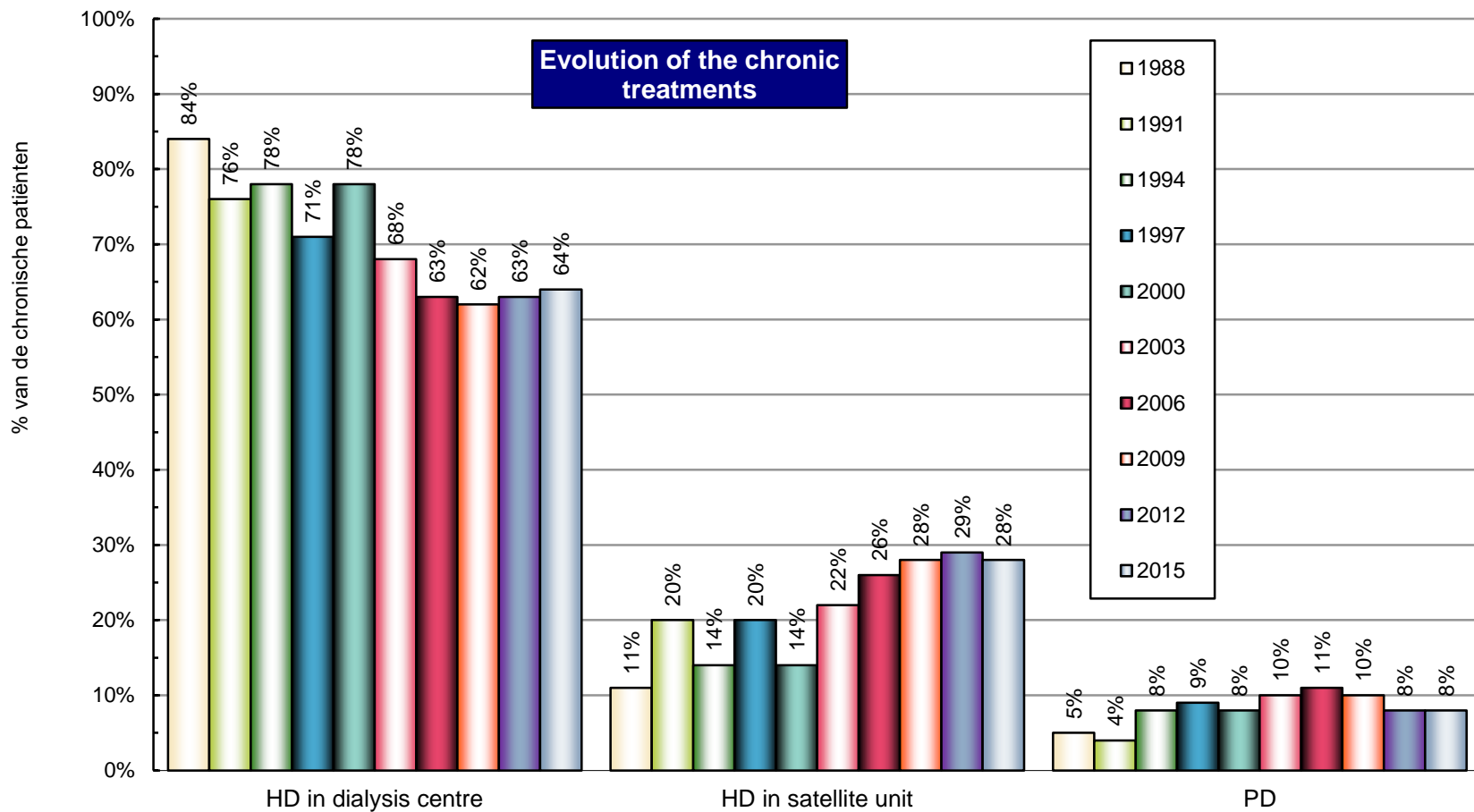
Centre - hemodialysis (HD, HF, HDF)  
% van de centra



- 13 centre 'offered' hemedialysis as a treatment form (15 in 2012)
- 7/13 centre have 'effective' patients in home-dialysis (5 in 2012)
- **Totally 31 patients were treated at home (18 in 2012)**
  - 8/31 patients ⇔ 3x dialysis / week
  - 15/31 patients ⇔ 4x dialysis / week
  - 4/31 patients ⇔ 5x dialyse / week
  - 4/31 patiënten ⇔ dialysis at night



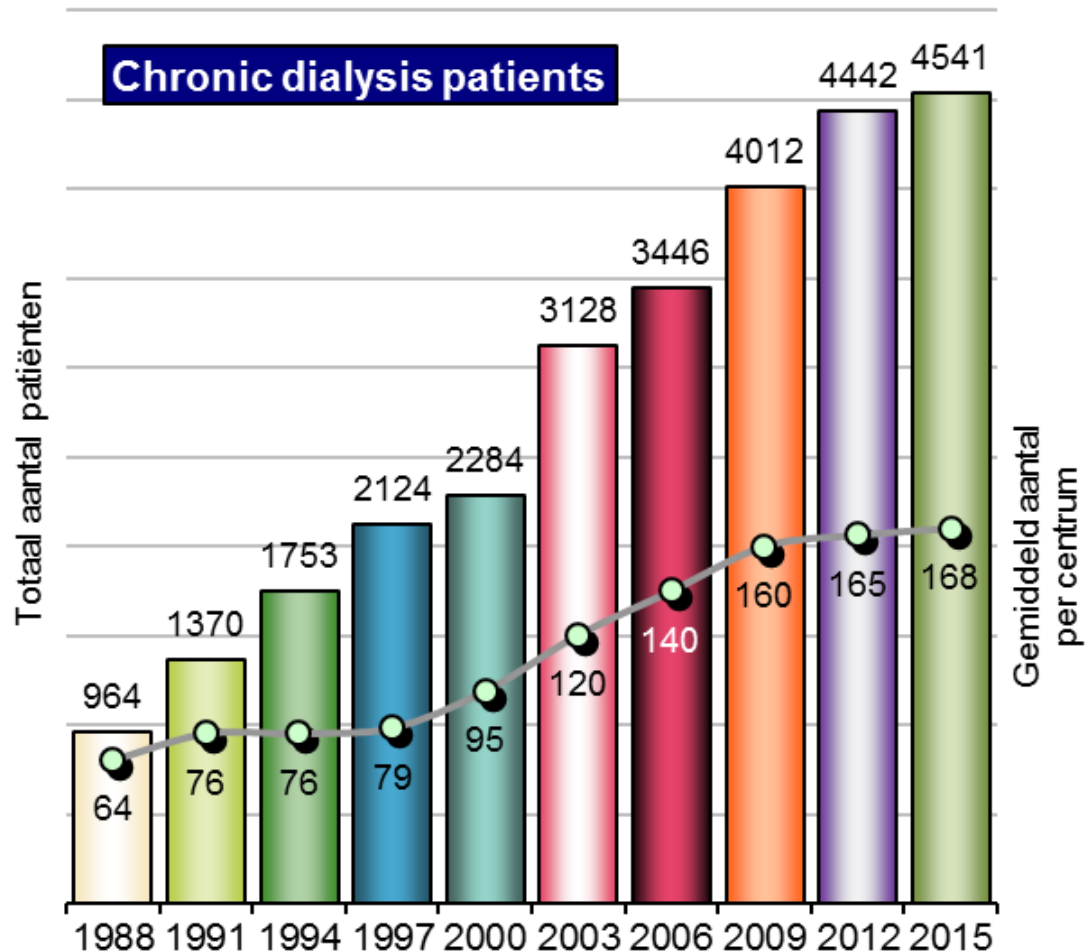
# Evolution of chronic dialysis treatments





# Evolution dialysis population

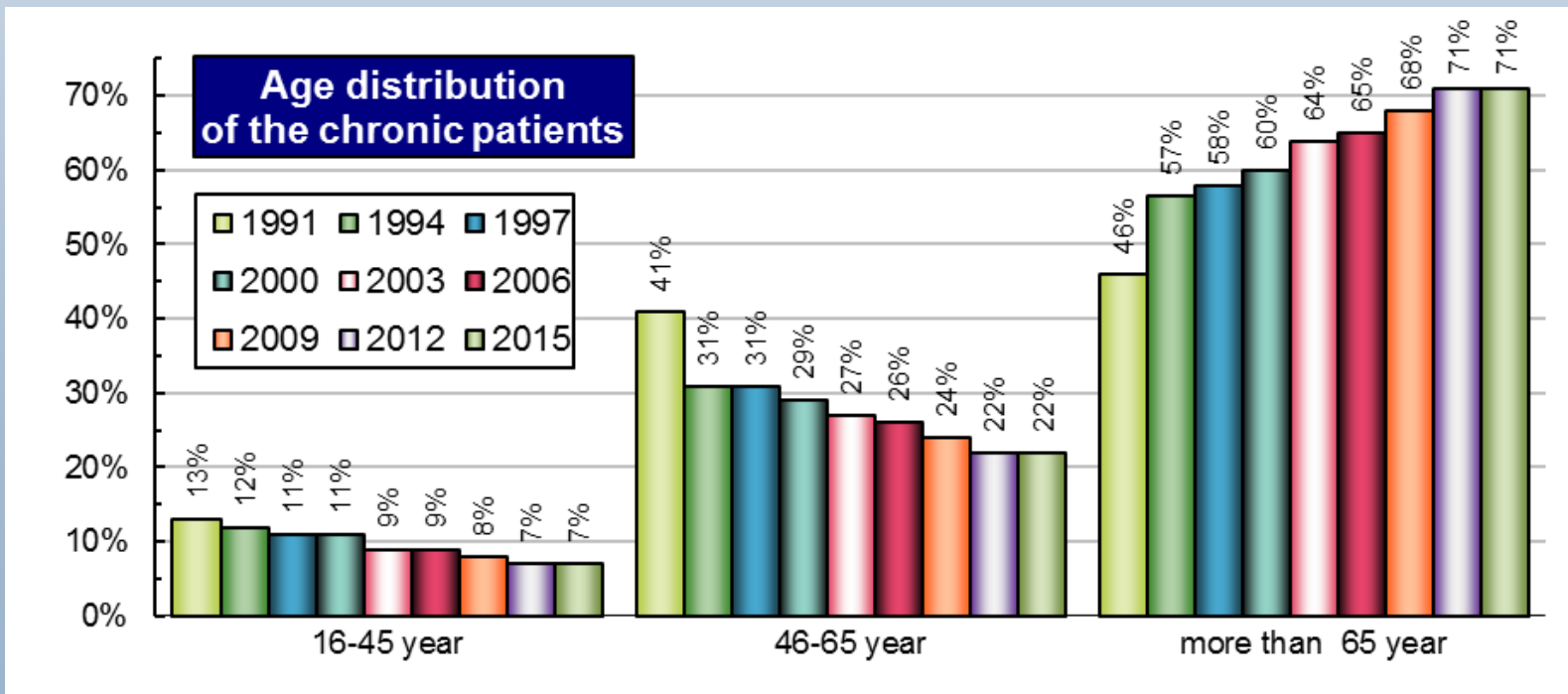
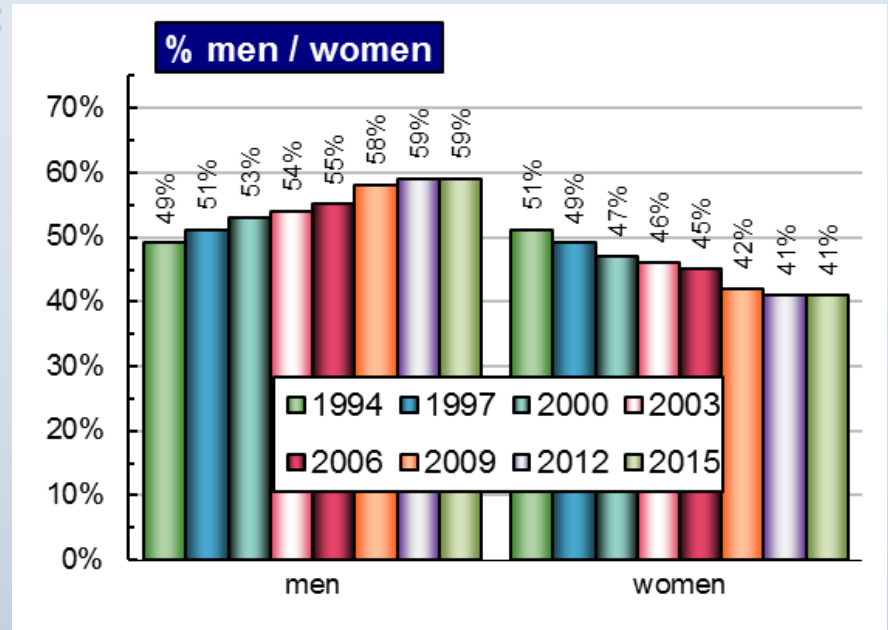
- Total number of patients in the 27 centre : 4541
- Mean number per centre : 168 (var. 73-278).
- The increase in patients who need RRT is less obvious during the last years.





# Chronic dialysis: demography

- 3049 (73%) of the HD patients and 158 (45%) of the PD patients were above 65 years.
- **464 (11%) of the HD patients and 14 (4%) of the PD patients were above 85 years.**

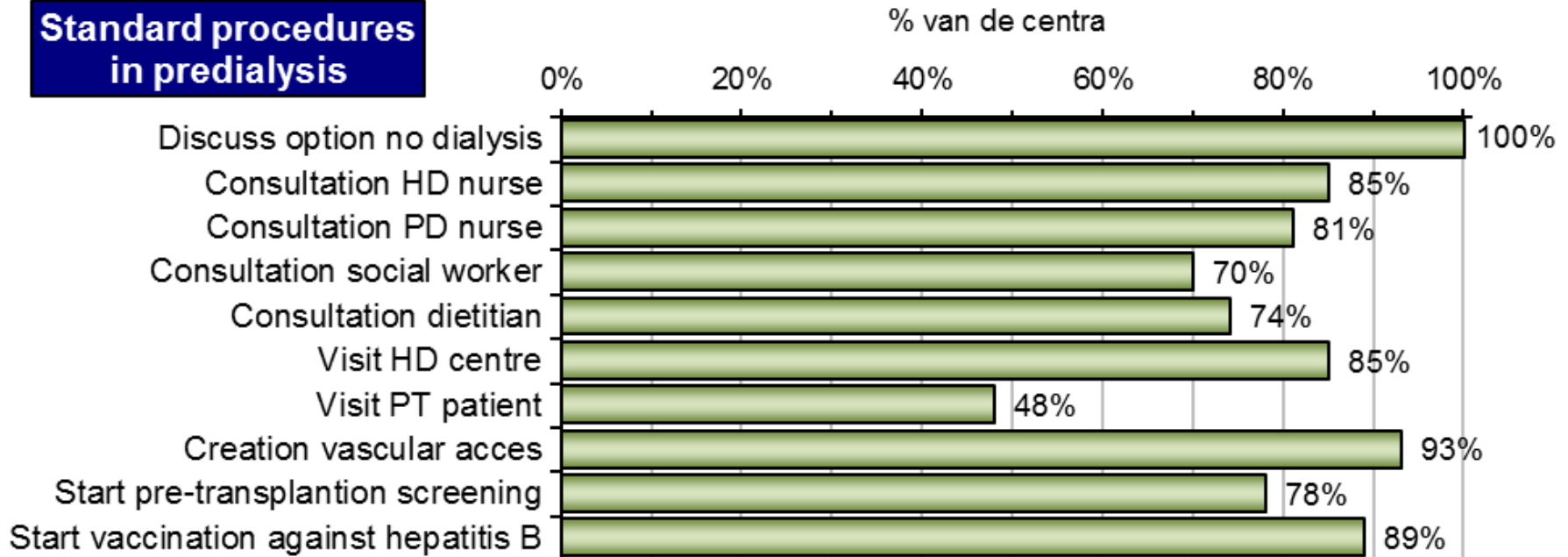




# Predialysis (1)

- 22/27 centra (82%) had a CARE PATHWAY PREDIALYSIS for the multidisciplinary approach en treatment of patients with not-terminal kidney disease (59% in 2012).
- 14/22 centra with a CARE PATHWAY PREDIALYSIS used a fixed GFR rate to take patients in the program ( of which 9 used a GFR 15-29 ml/min (KDOQI 4)).
- In the multidisciplinary team of the care pathway were involved, besides the nephrologist : predialysis nurse (16), HD nurse (9), PD nurse (14), dietitian (14), social worker (15), vascular surgeon (7), psychologist (1).

## Standard procedures in predialysis



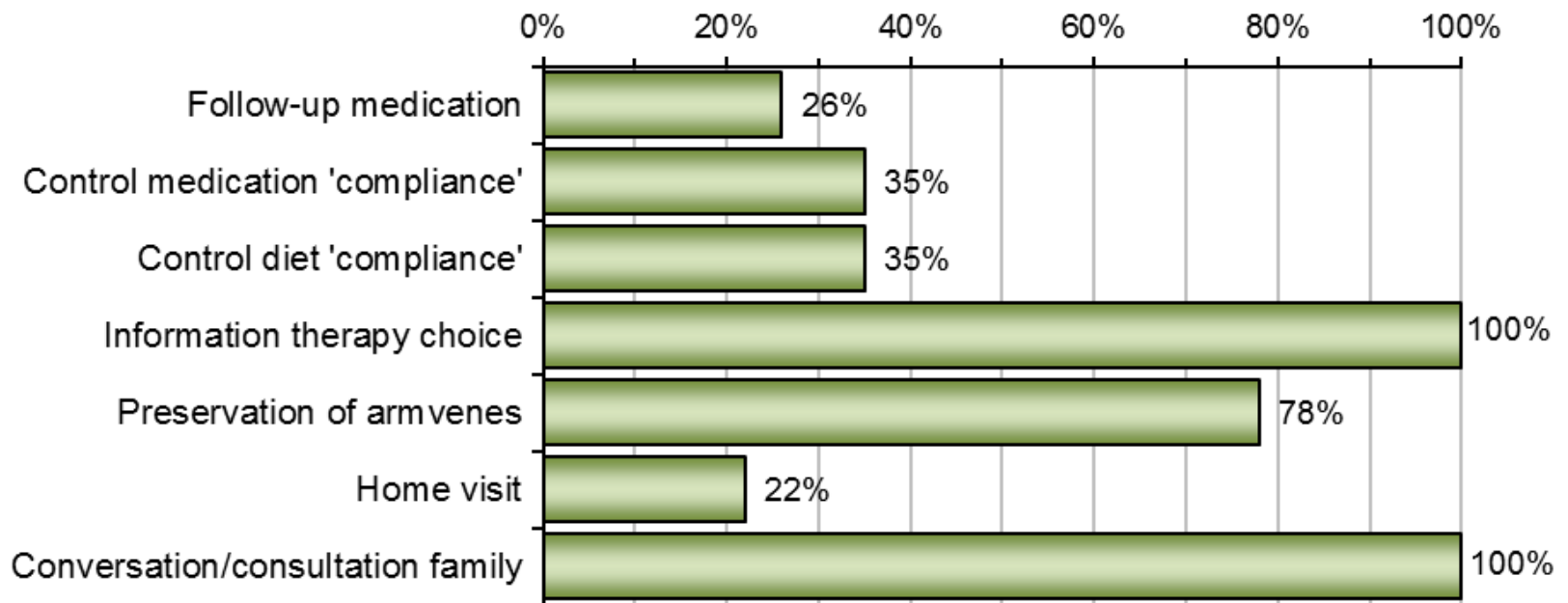


# Predialysis (2)

➤ 23/27 of the centre (85%) had a 'predialysis nurse' ⇔ (67% in 2012).

## Specific tasks of the predialysis nurse

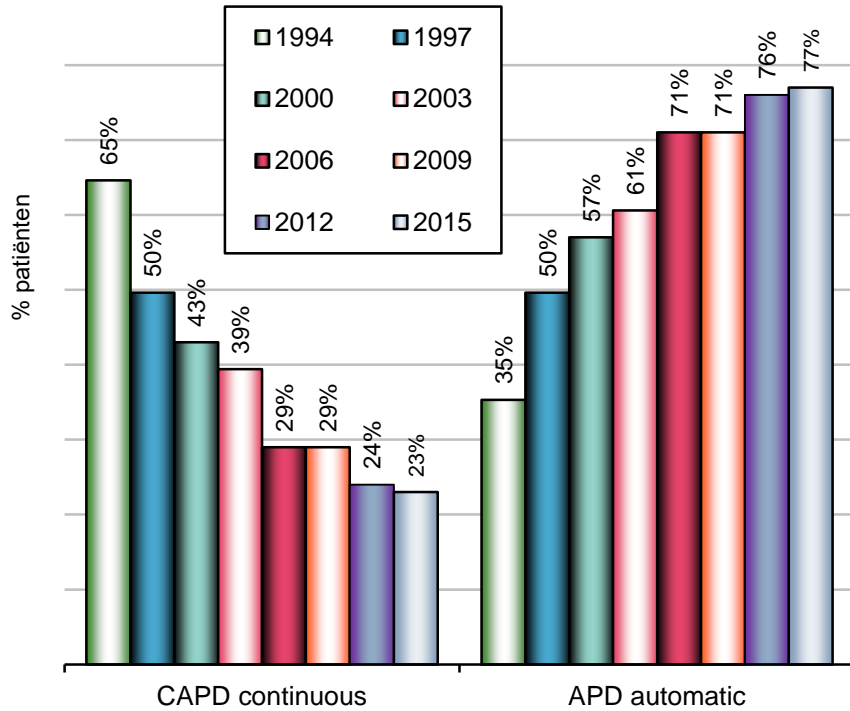
% of the centre (n=23)



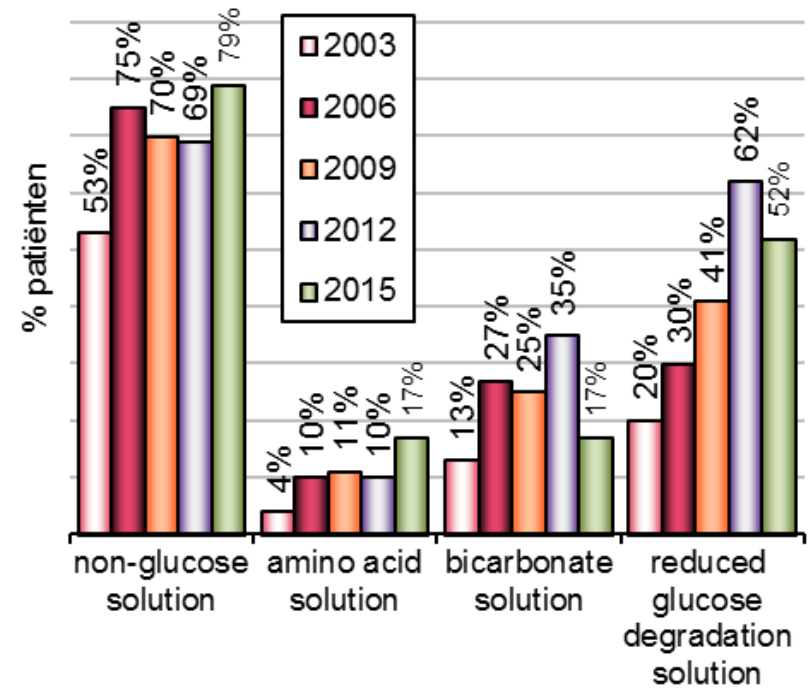


# PD: treatment

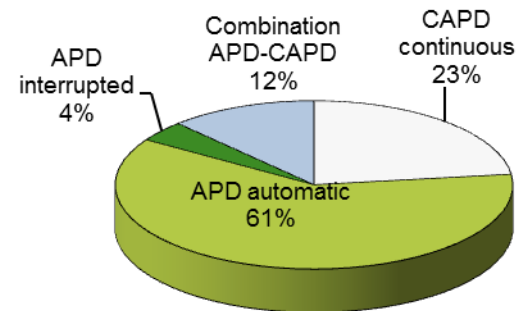
**PD treatment choice**



**PD use of solutions**



**2015: detail partition**



➤ The combination APD-CAPD changed slightly from 9% in 2012 to 12% in 2015.

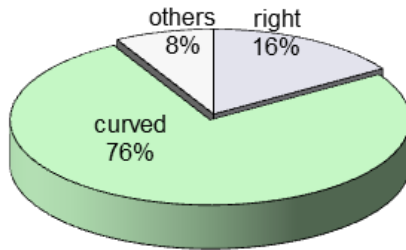


# PD: catheters

7/27 centra (26%) attached the PD-catheter by insertion standard at the peritoneum (41% in 2012).

## PD catheters

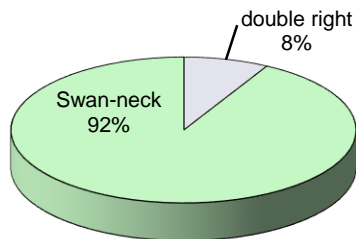
### INTRAPERITONEAAL



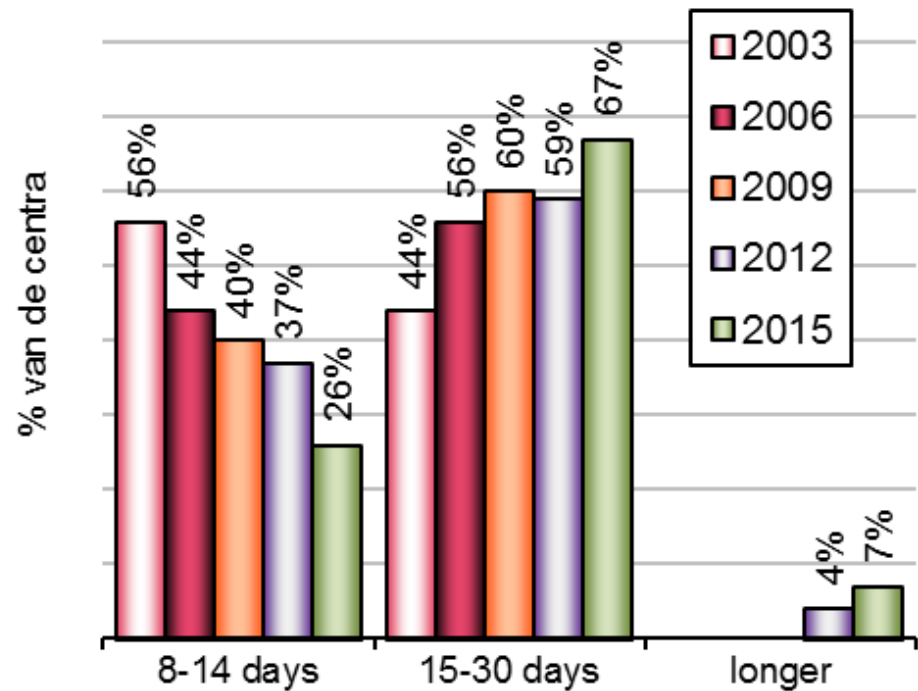
% van PD pati

## PD katheters

### EXTRAPERITONEAAL

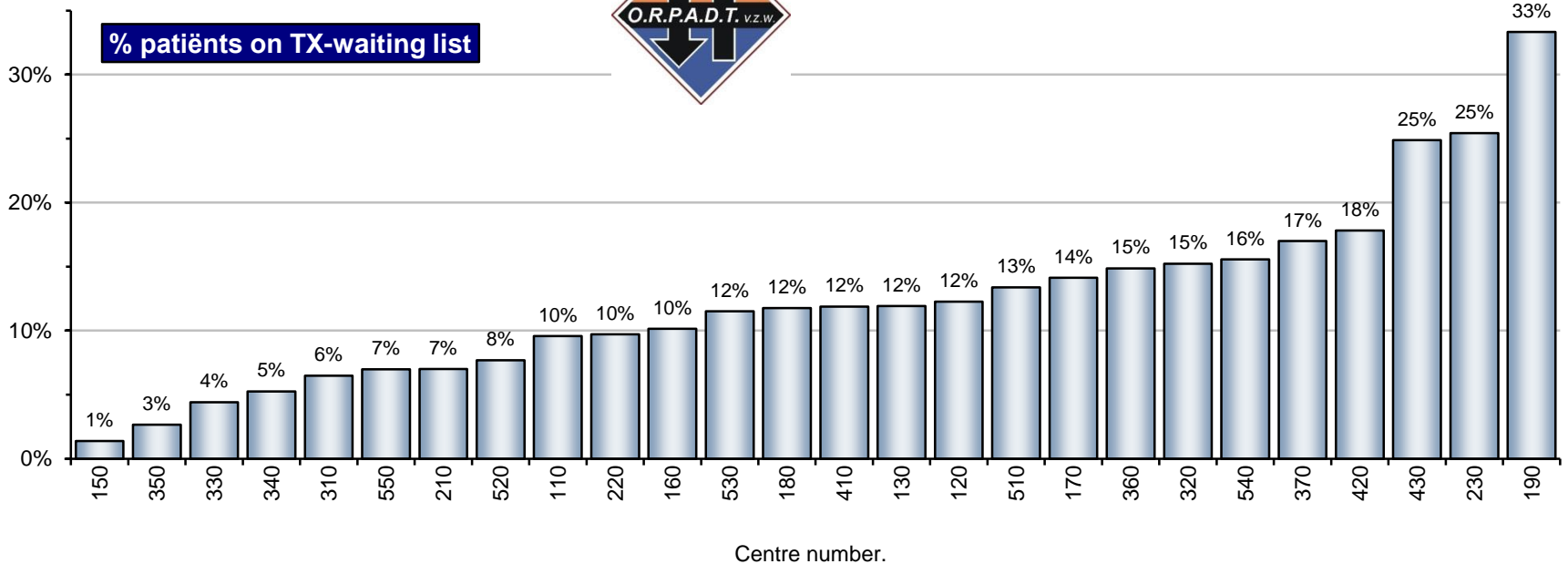
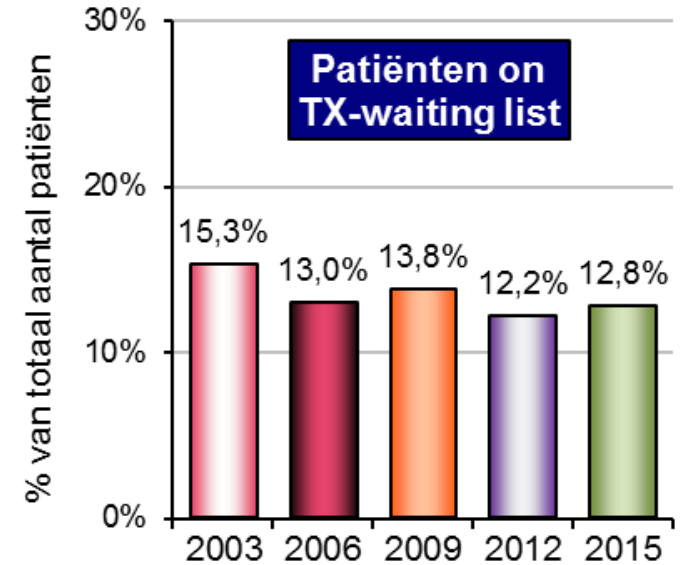


## Waiting time after insertion PD catheter



# Waiting List for Transplantation

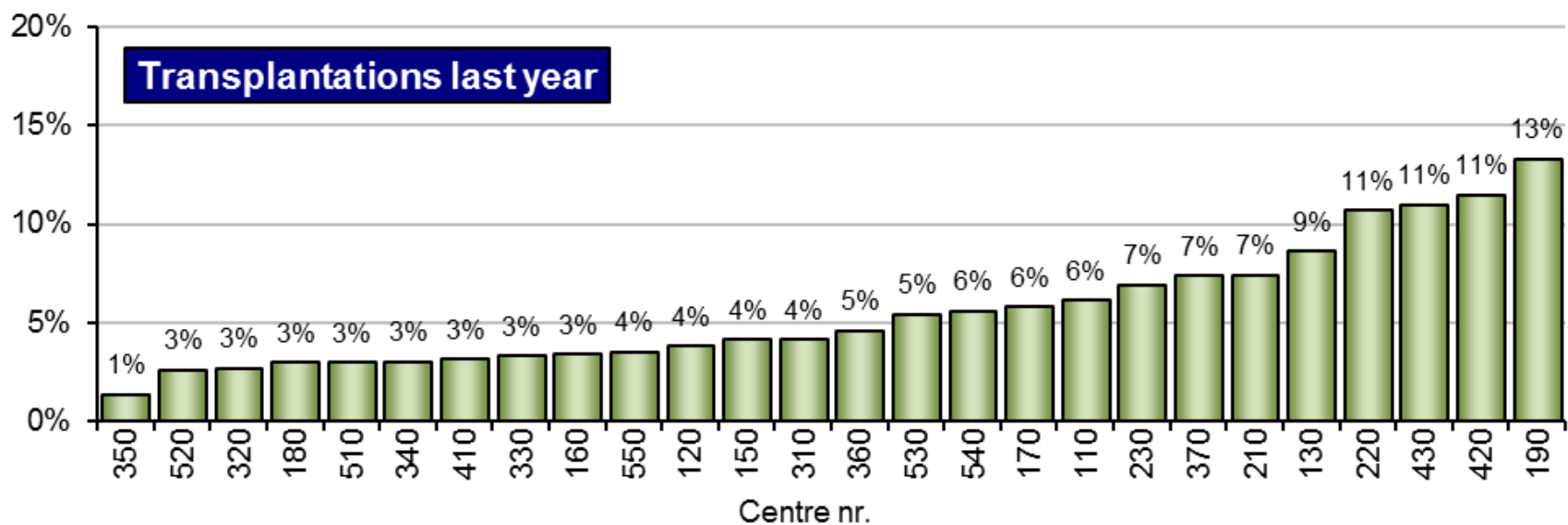
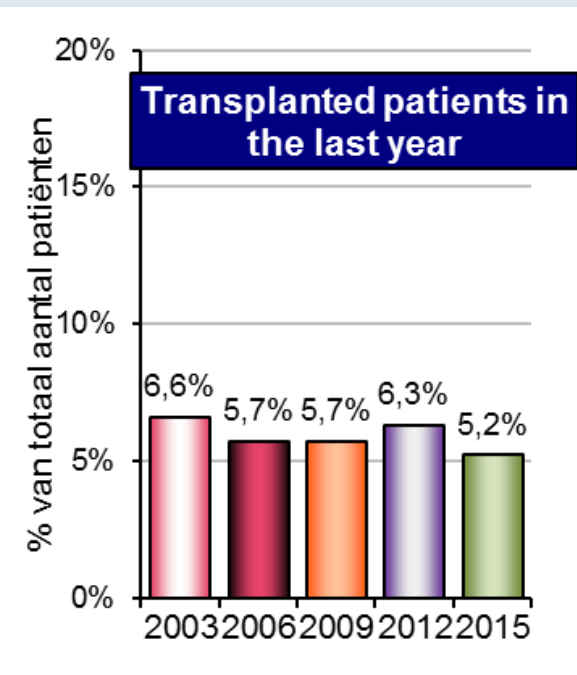
- 13% of patients were on a Tx waiting list.
- 28 patiënten were listed for a multi-organ transplantation.
- 13% of patients were aged > 65 year (10% in 2012).





# Transplantations (TX)

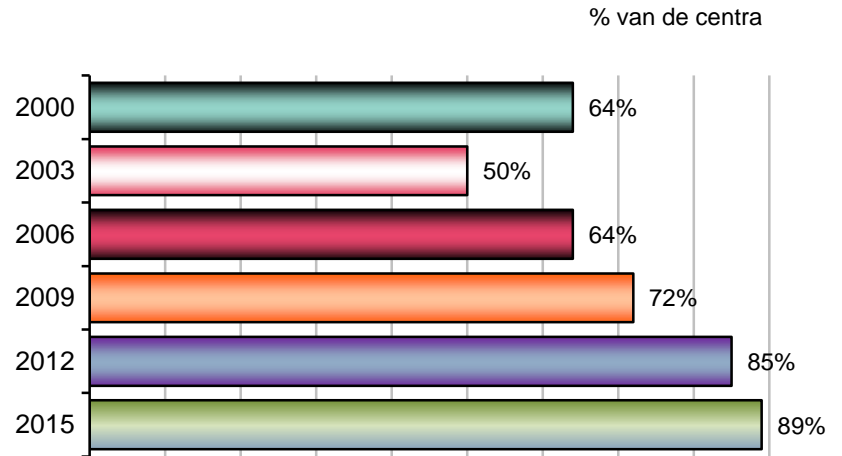
- 9 patiënten were transplanted before start of dialysis, 16 were transplanted from a living-related donor and 22 from a living unrelated donor.
- 88% of the centre discussed the option of TX with living-related donors, 50% the option living-unrelated donors.
- 7 centre did besides the routine pre-TX-screenings and follow-up also pre-transplantation information sessions.
- **9 centre have a dedicated nurse for the specific follow-up of TX patiënts, 8 also a donor-transplant coördinator.**





# Renal Dietitian

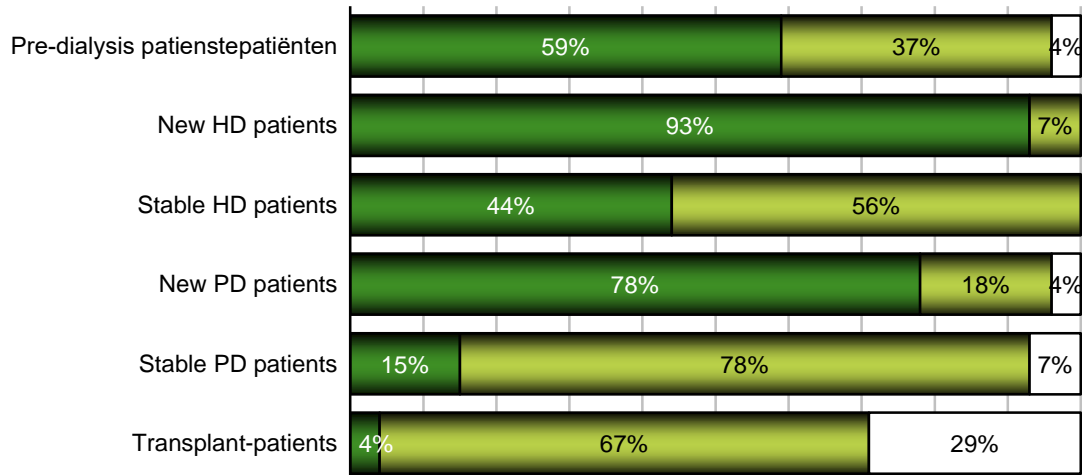
## Does your centre have a renal dietitian ?



## Frequency of diet advice

% of the centre

- on a regular basis
- only in case of problems
- never

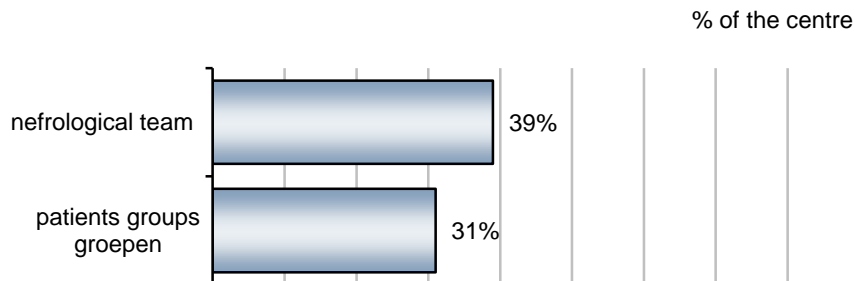




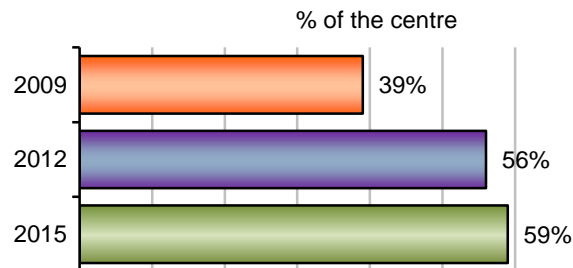
# Renal dietitian

- **Screening for malnutrition increased significant comparing to 2009.**
- The involvement of the renal dietitian at therapy adjustments for phosphate binders, energy and protein additions decreased strongly comparing to 2012

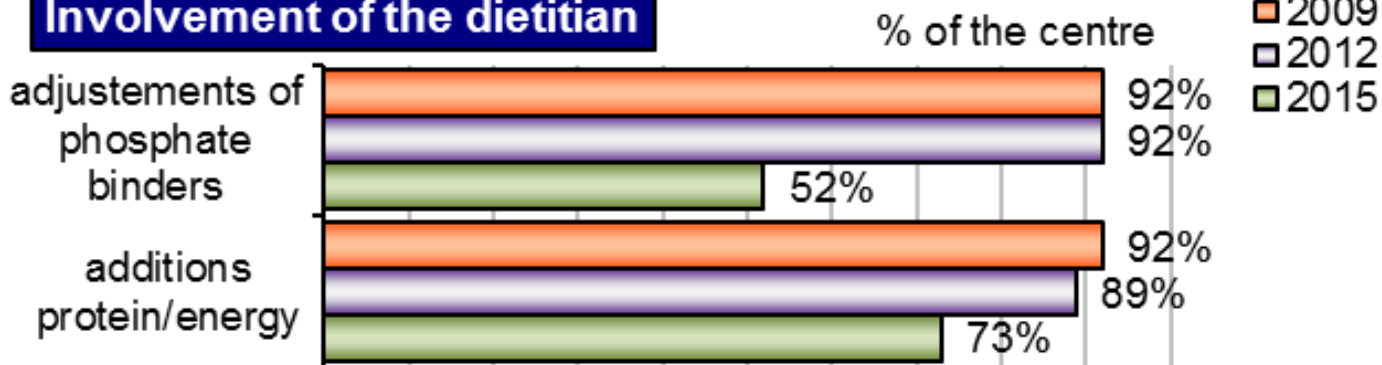
## Organizes the dietitian regular educational sessions ?



## Screening of all patients for malnutrition



## Involvement of the dietitian

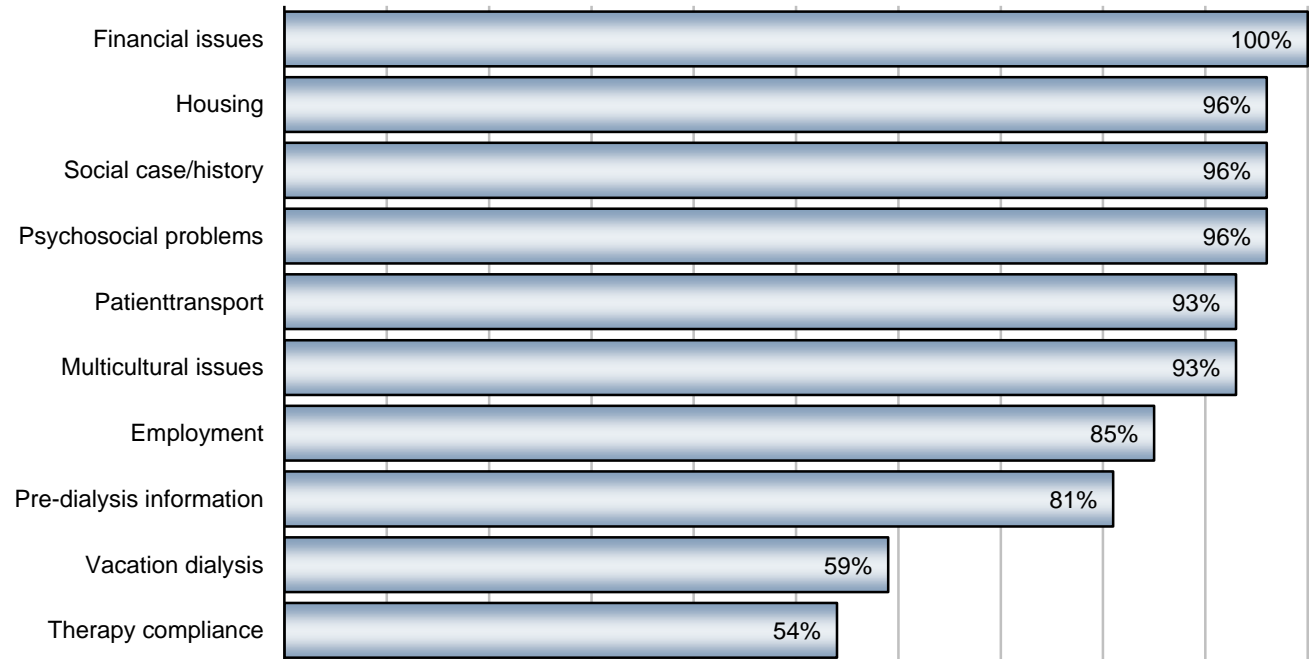




# Social worker

## Specific tasks of the social worker

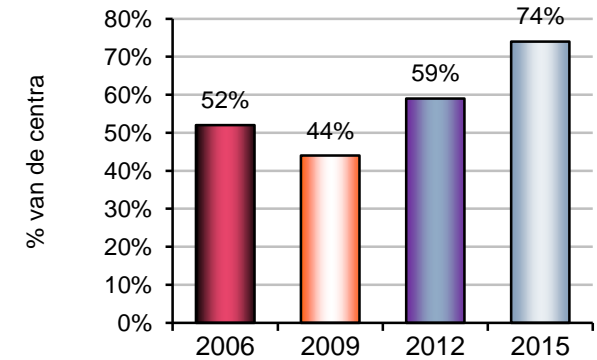
% of the centre



# Multidisciplinary Team Working

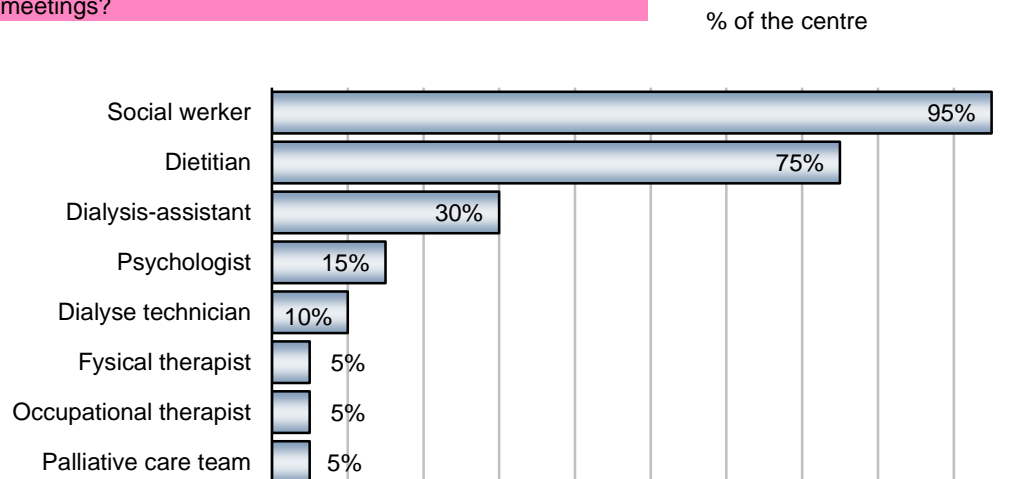
- The multidisciplinary discussion of new patients has further increased.
- Besides nurses and doctors the involvement of other disciplines stays nearly the same in the earlier surveys.

## Multidisciplinaire team meetings discussing patientcare of a new patient ?



## Multidisciplinaire team meetings discussing patient care of a new patient ?

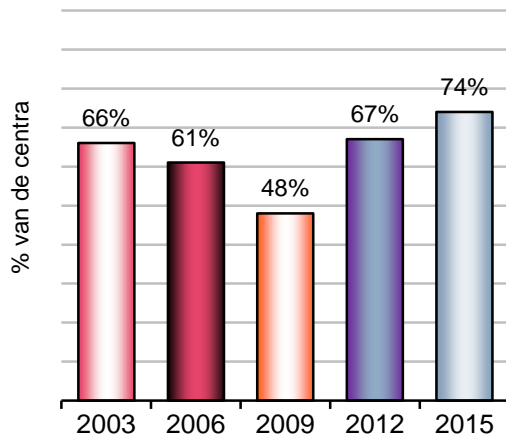
In addition to nurses and doctors who else is involved in the meetings?



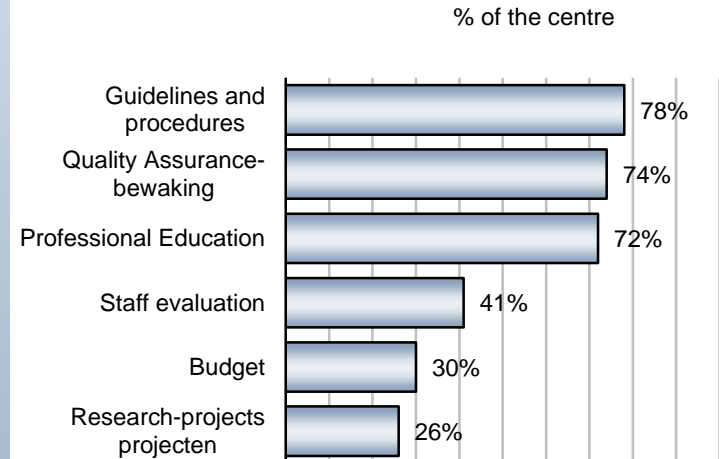


# Multidisciplinary team consultation/discussion

## Monthly multidisciplinary discussion of patient care

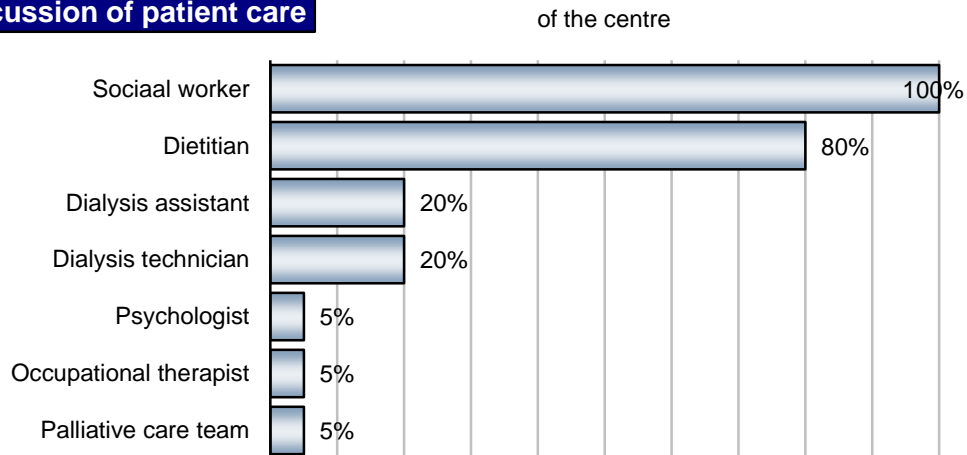


## Other topics discussed at the multidisciplinary teammeetings



In addition to nurses and doctors who else is involved in the meetings?

## Monthly multidisciplinary discussion of patient care

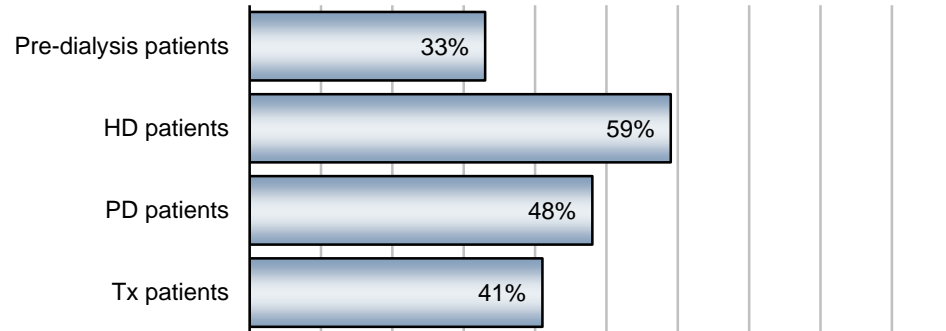




# (DNR) (do not resuscitate) approach/policy

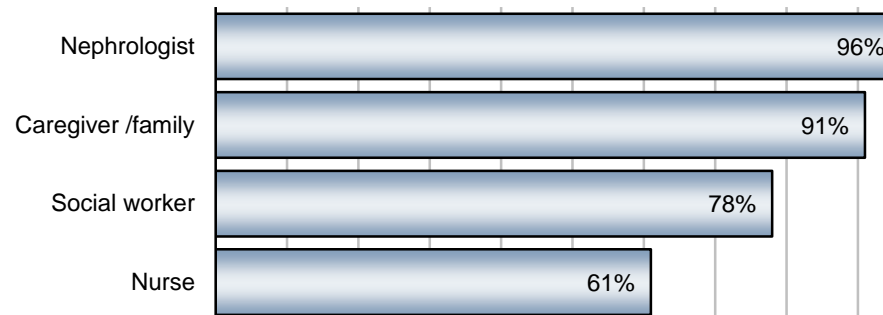
The 'desired' therapy approach, if the patient is evolving into a palliative stage, is systematically discussed .

% of the centre




Who is standard involved in this conversation?

% of the centre





# *Results of the hemodialysis units questionnary*



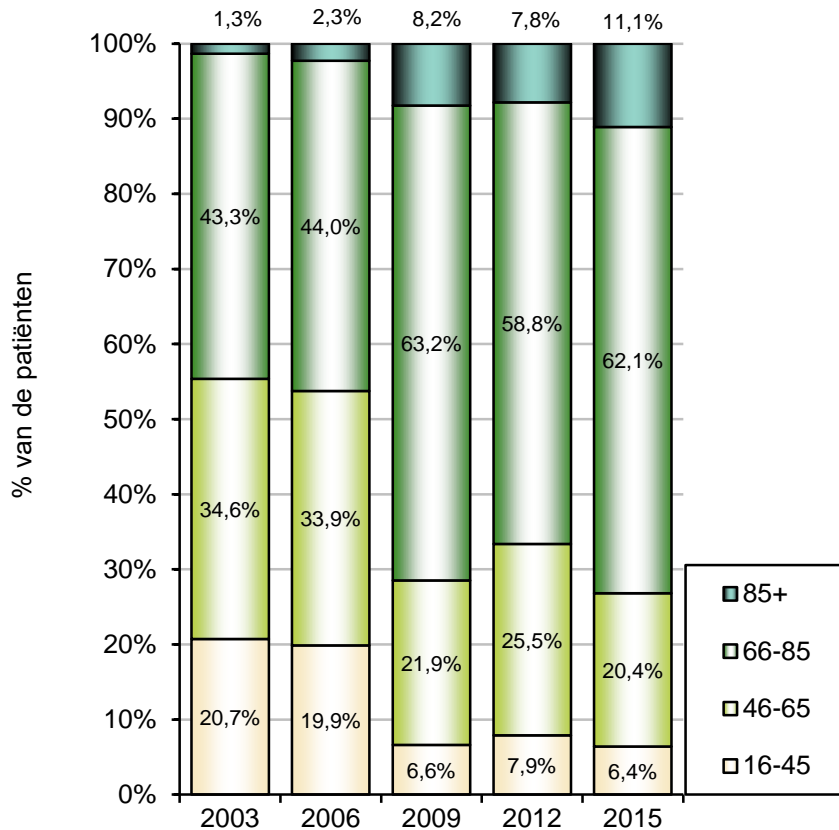
*n= 81 HD afdelingen  
27 in de voogdijcentra  
54 CAD*



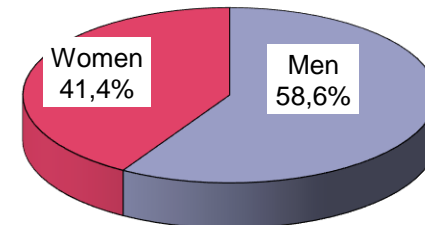
# HD patients: demographic profile

- Mean number of HD patients per HD unit: 52 (var. 7-245).
- Mean number of patients in head-centre 110 (var. 31-245), in satellite units : 23 (var. 7-88).
- In the headcentre 73% of the HD patients were older than 65, in the satellite units were 71% older than 65 (in 2009 there was still a difference of 72% versus 60%).

Age profile HD patients



M-V ratio HD patients

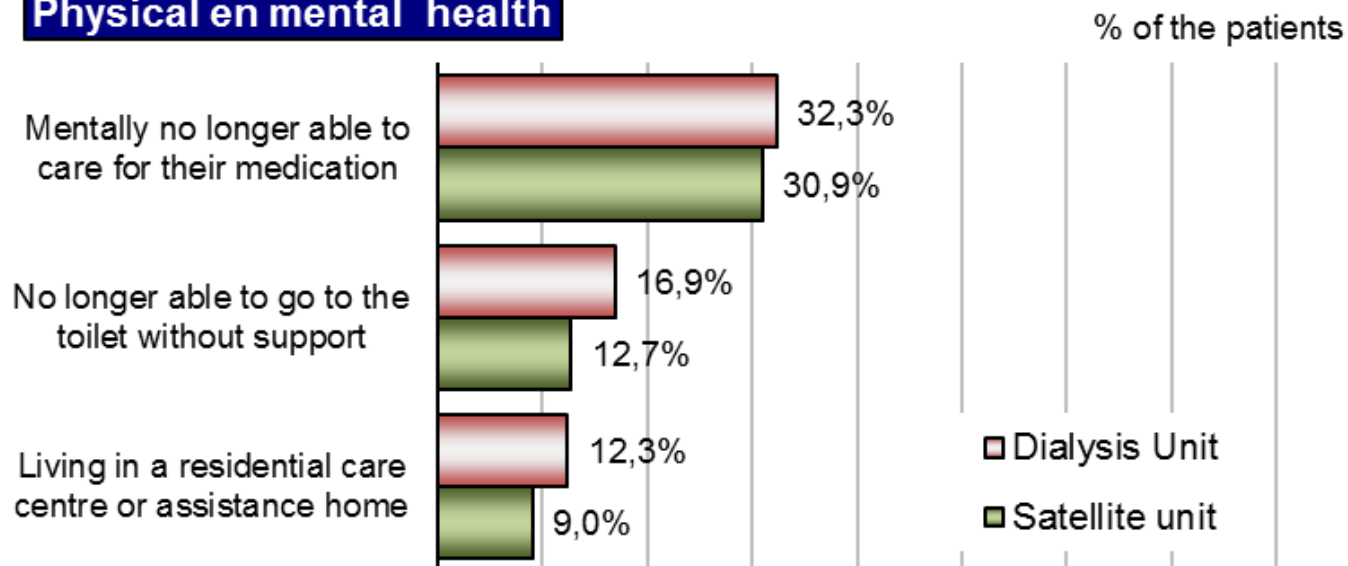




# HD: Disability

- In the HD population had 660 patients (15.6%) a certain degree of immobility (this means that these patients could't go to the toilet without help) (compared to 13.3% in 2012).
- In the HD population we noted by 1139 patients (31.9%) a certain degree of mental retardation (they were no longer able to care for their own medication) (compared to 27.9% in 2012).
- 477 HD patient (11.3%) stayed in a residential care centre or are living in a assistance home (compared to 11.1% in 2012).

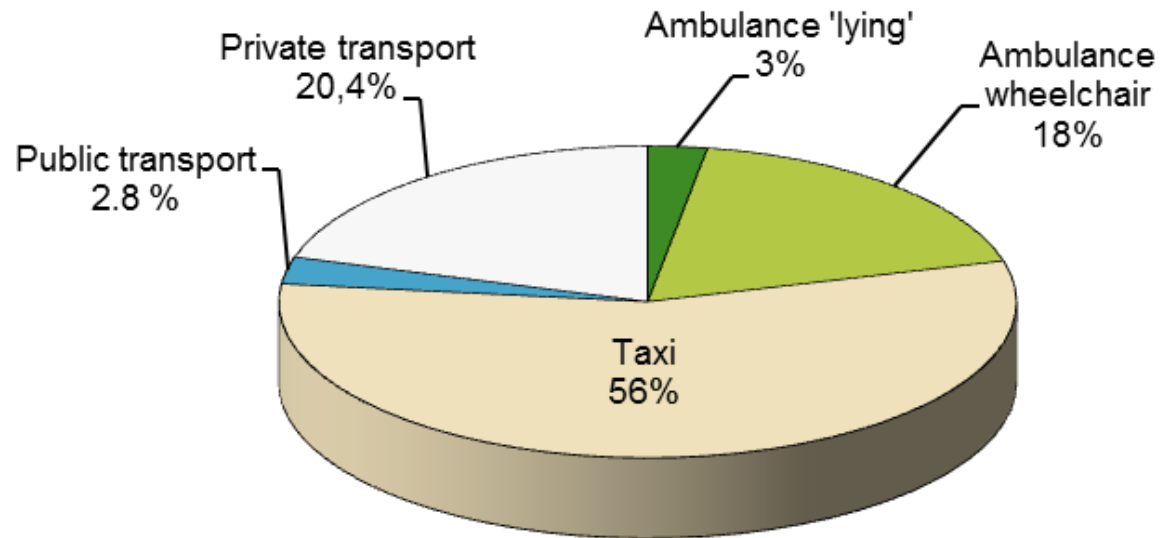
## Physical en mental health





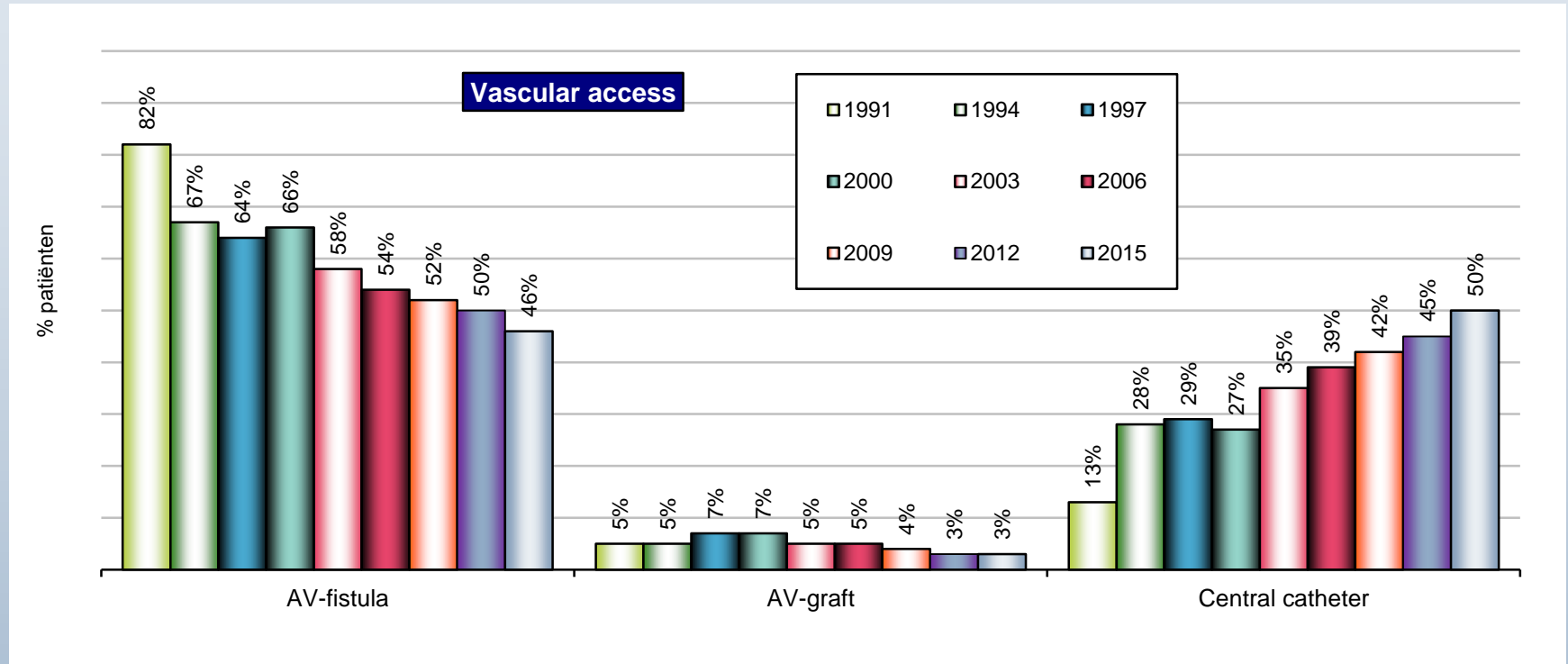
# Hemodialysis transport

## Transport to the dialysis unit



The need for at least 'wheelchair' transport increases at each survey

# HD: Evolution vascular access



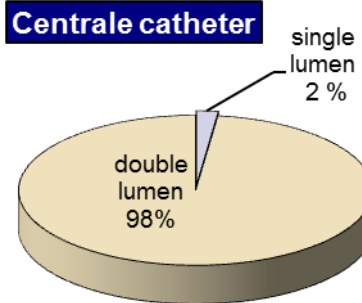
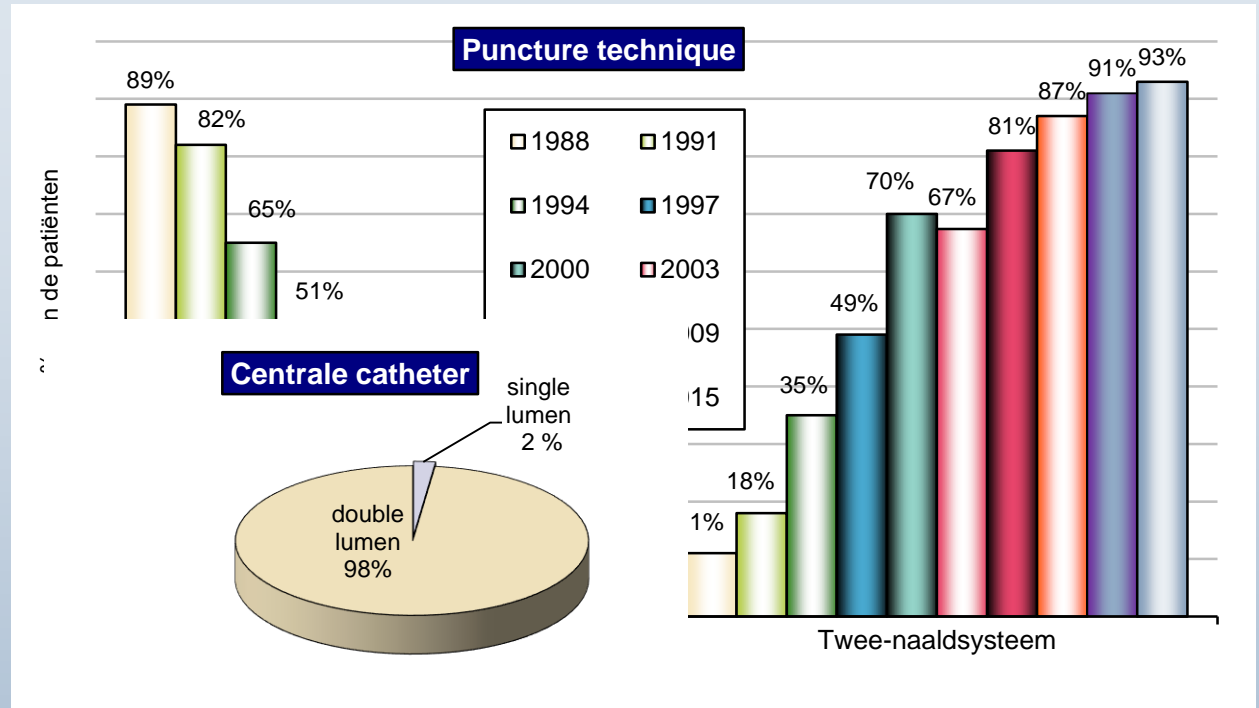
➤ The use of central catheters increased further to 50%.

➤ 68 patients were dialyzed with a combination of AV-fistel and catheter, 7 with another access



# HD: single needle / double needle

The single needle puncture technique has dropped to 7 %



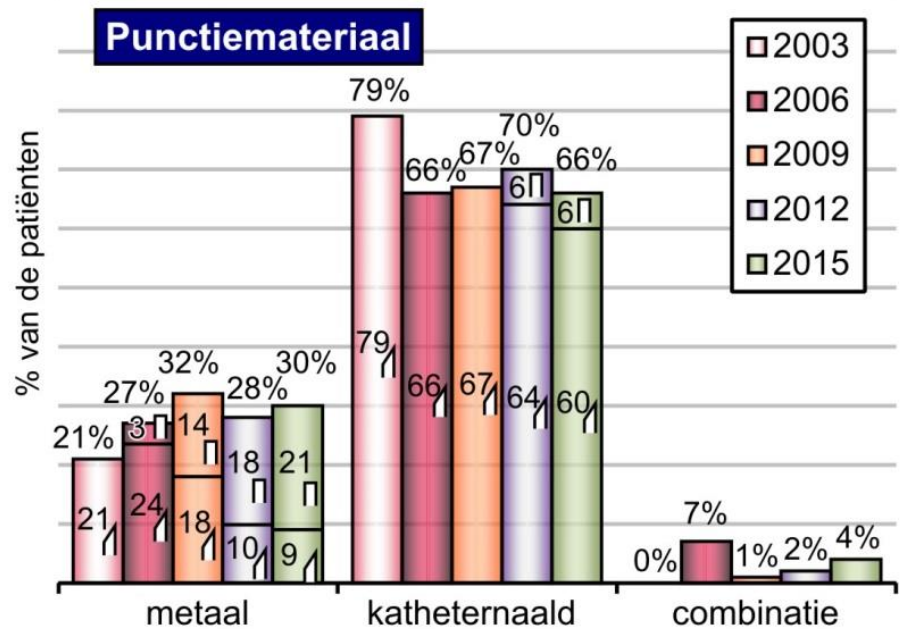
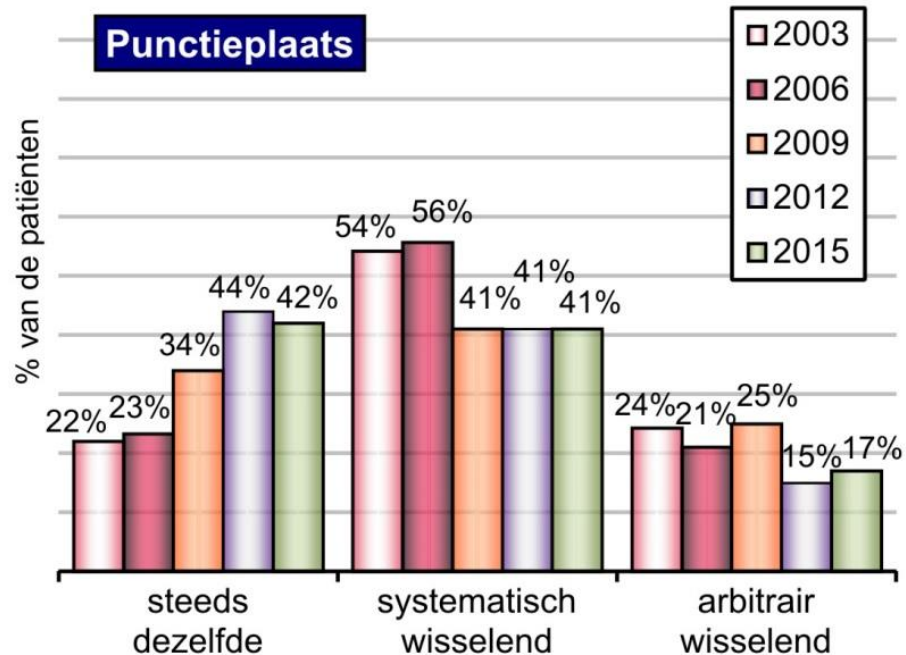
The use of single lumen catheters declined further from 49% in 2003 to 25% in 2006 ,till 3% in 2012 and 2% in 2015.

# HD: puncture place puncture technique and material.

➤ Button-hole technique is used for around 40 % of the patients

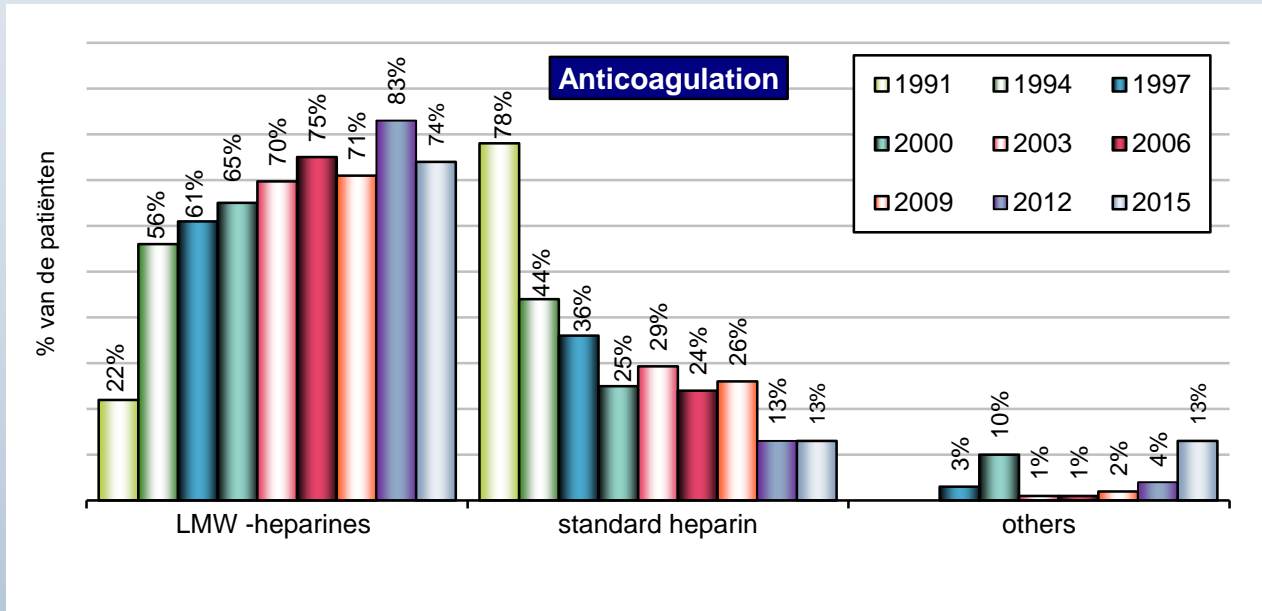
➤ The use of blunt needles increased till 21% for the metal needles and stays at 6% for the blunt catheter needles.

➤ Ratio catheter / metal needles:  
70% ⇔ 30%





# HD: Anticoagulation



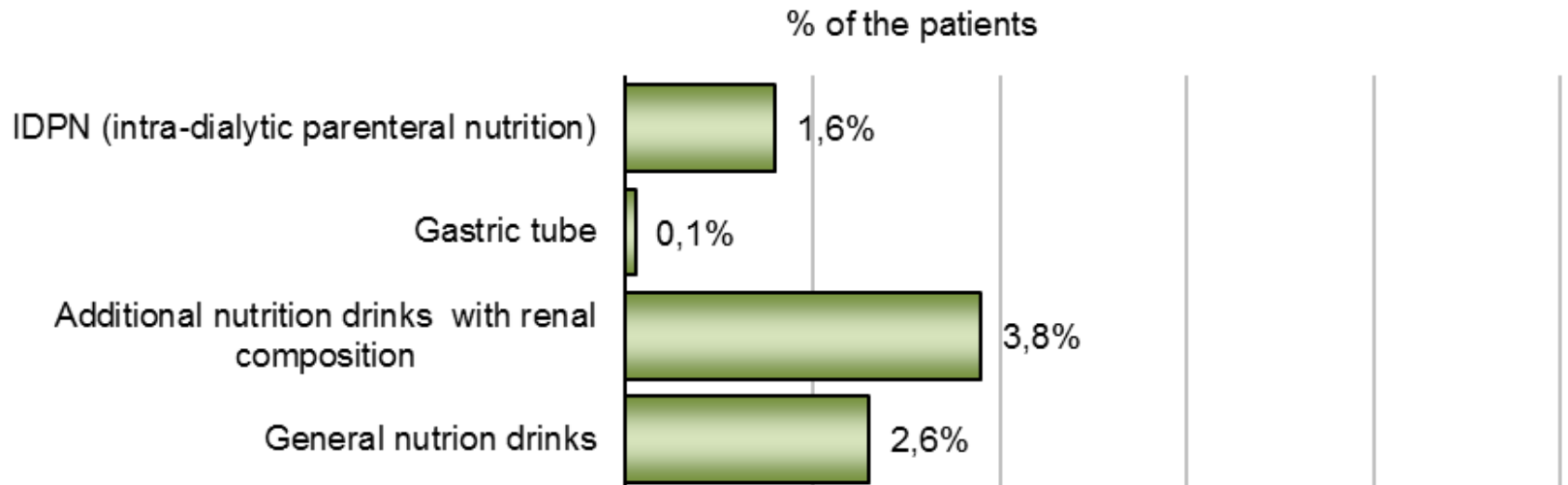
- The use of low molecular heparin decreased , *the use of citrasate dialysate increased above 10 %* . 1.6% of the patients were treated without anticoagulation



# HD: Treatment of malnutrition

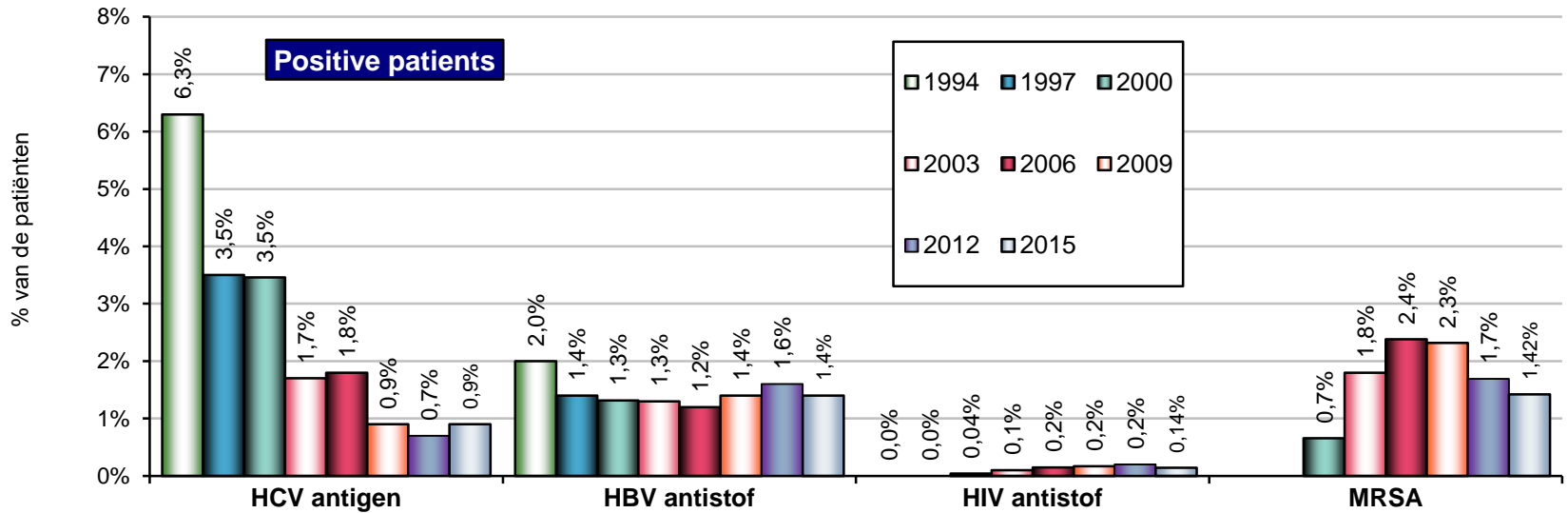
- 346 patients (8.2%) were active treated for malnutrition

## Kind of treatment for malnutrition





# HD: Infectious Serology (1)



Centre with infection: 41%

21%

8%

35%

Range per centrum: 1-4

1-15

1-1

1-6

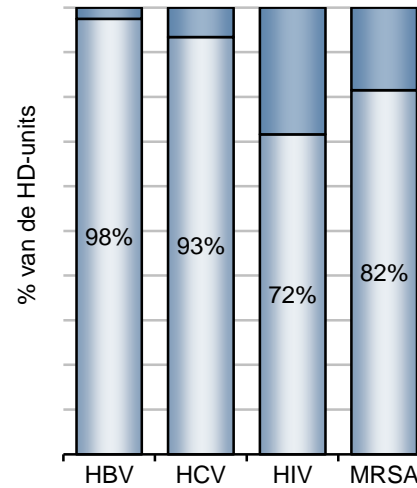
# HD: Infection control



➤ In 84 % of the centre new patients were screened for HIV/MRSA/HEPB/ HEPC

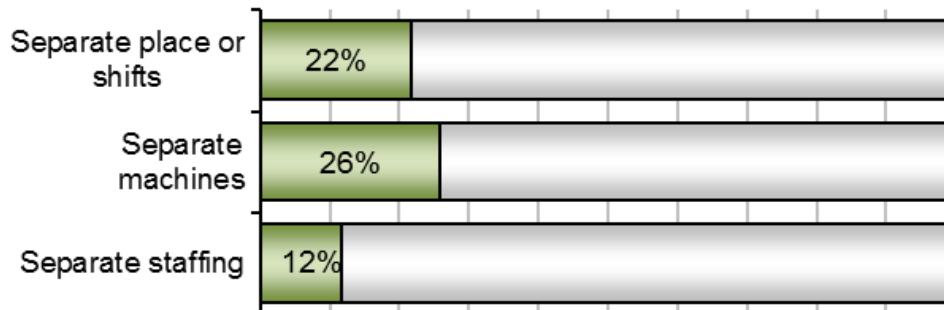
➤ Isolation for MRSA positive patients increased from 46% in 2012 till 51 %

Control al least yearly

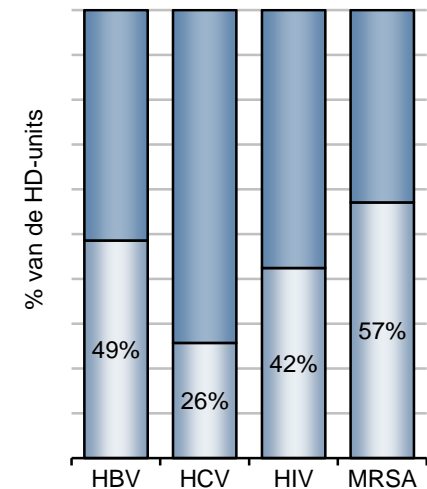


Isolation steps by HCV-pos. pat.

% van de HD-units



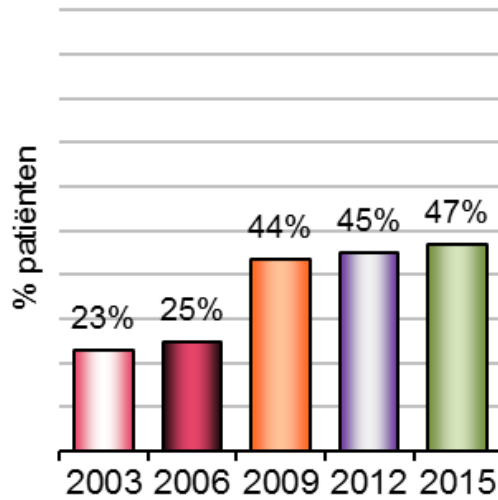
Isolation if positive



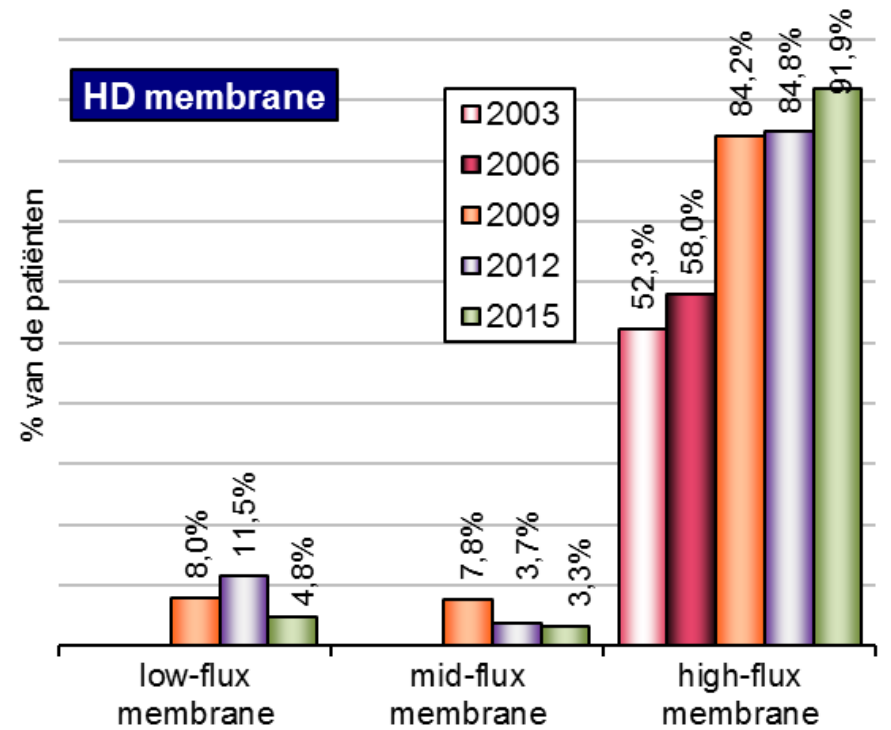


# HD: Technical aspects

## Hemodiafiltration



## HD membrane



## ➤ Hemodiafiltration : 47%

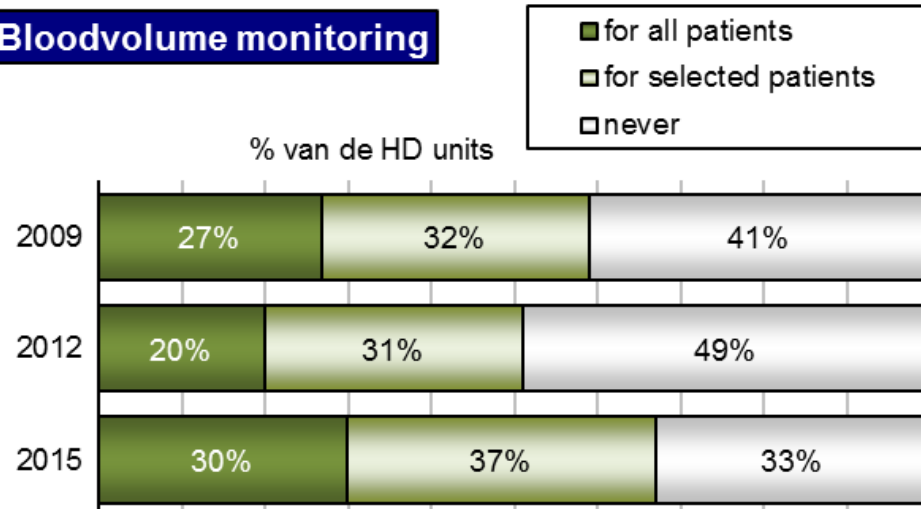
- 7 % pre-dilution
- 39 % post-dilution
- 1 % mixed-dilution



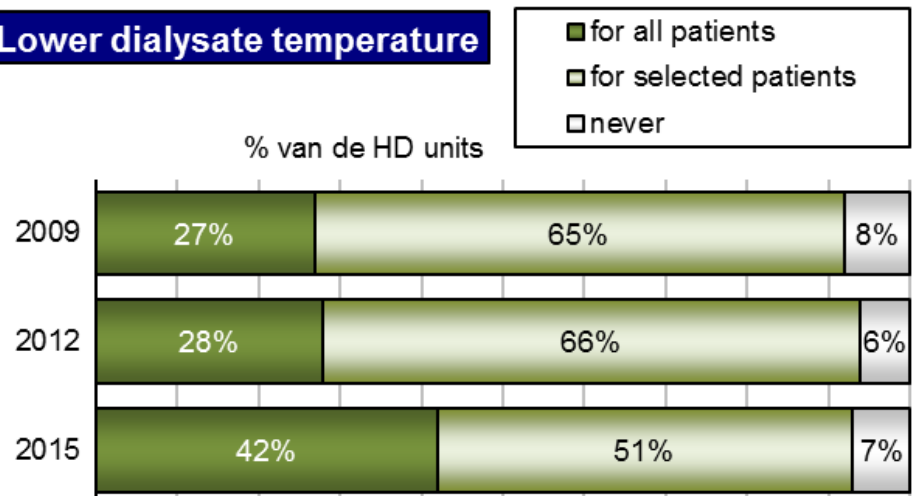
# HD: Technical aspects

- The use of bloodvolume control increased to 67% (51% in 2012)
- Low temperature dialysate was used for 42 % of the patients 42% (28% in 2012)

## Bloodvolume monitoring



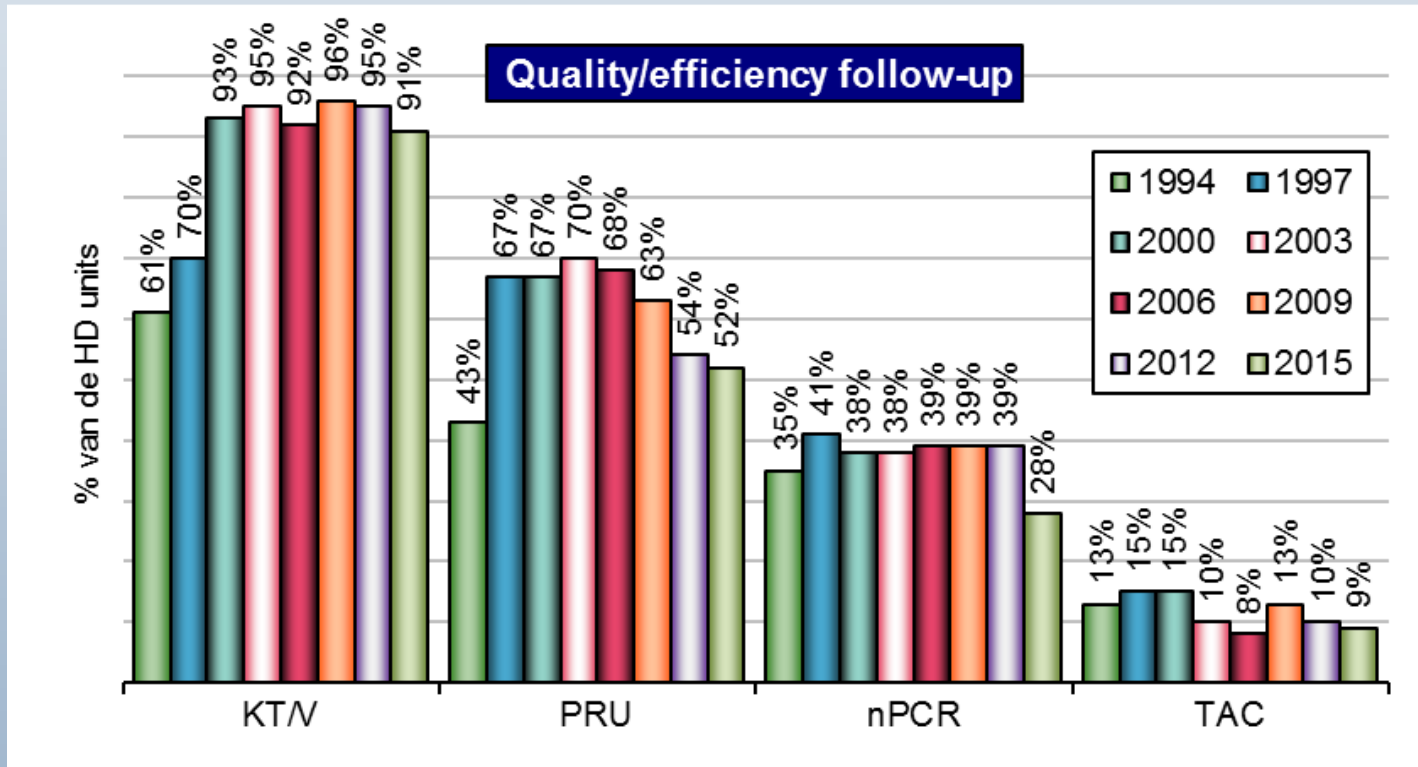
## Lower dialysate temperature



\* <36.5°C

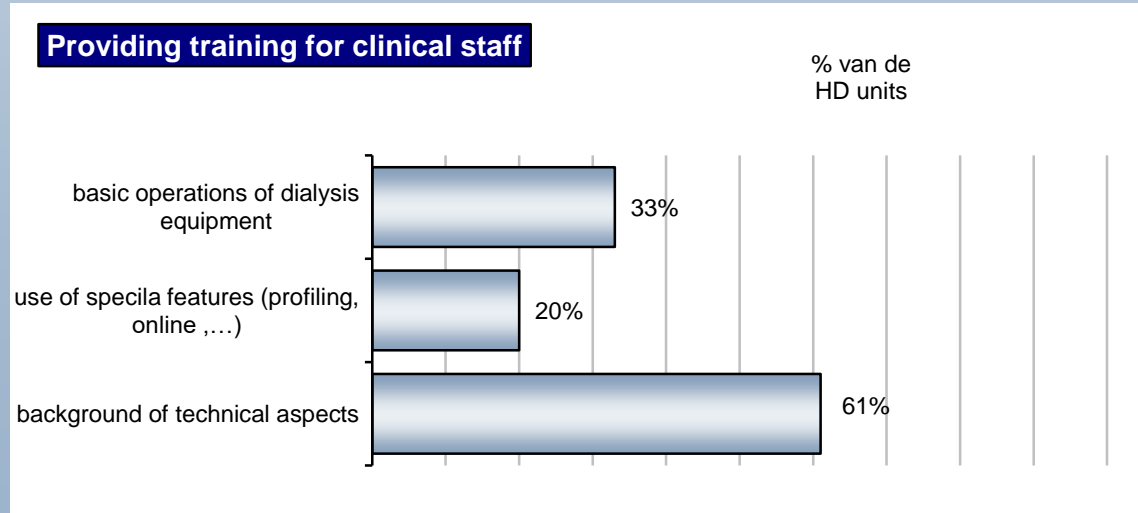
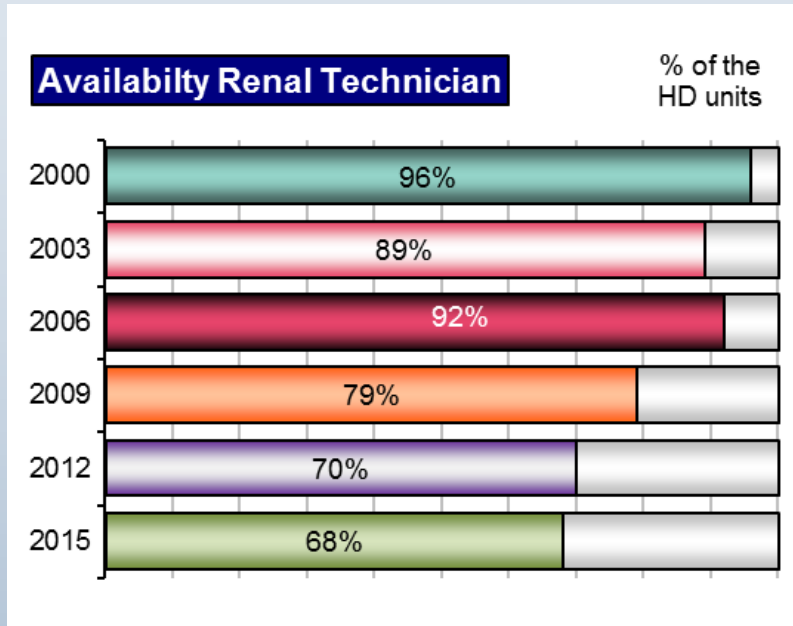


# HD: Quality (efficiency) analysis





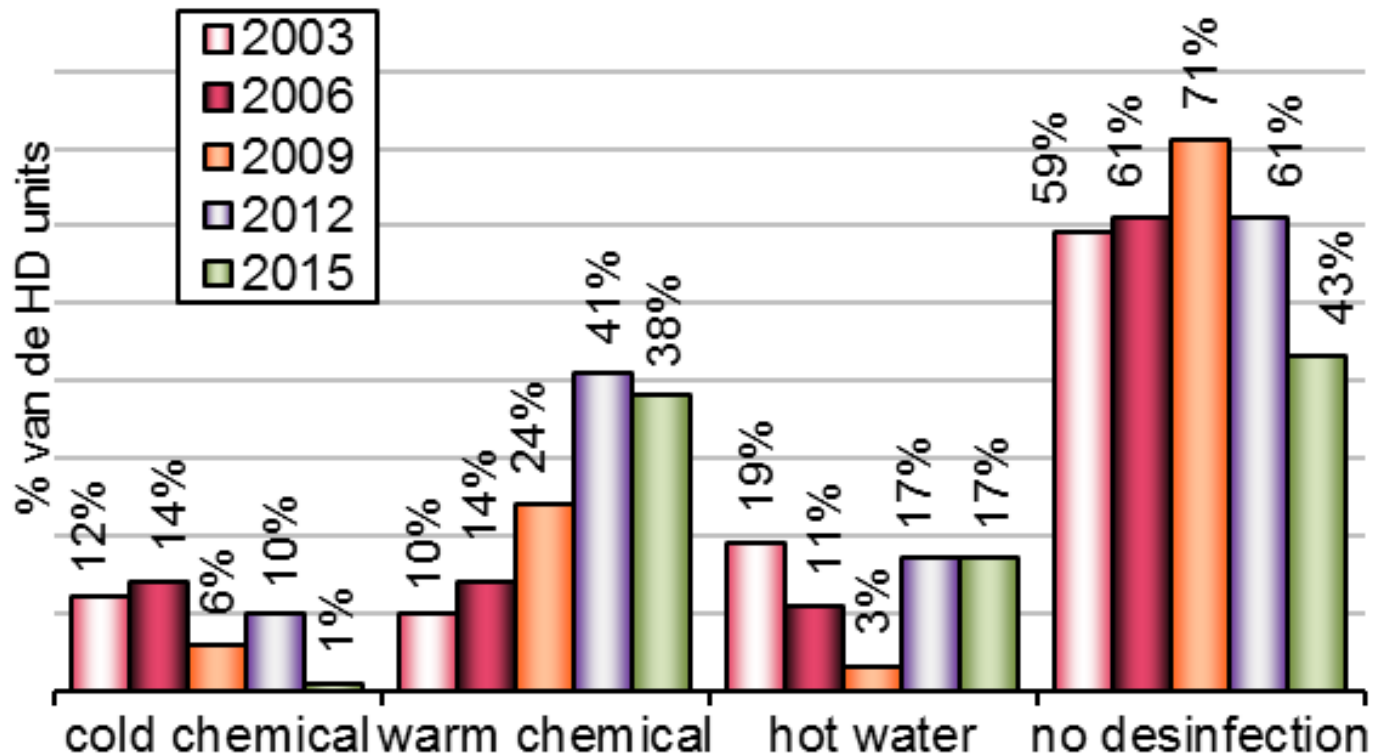
# HD: Renal technician



# HD: Hygienic management of the dialysis monitors

Data will be strongly changed next year as a result of the accreditation processes

## Desinfection monitors between sessions on the same day



# Conclusion ?

If you know the population where you have to care for .....

If you questioning/audit your 'daily practise ' .....

You will always see opportunities to improve your  
practise/patientcare .....

**The patients will be grateful.**

Thanks for listening !