De economische realiteit van nierfunctievervangende therapie in een vergrijzende maatschappij

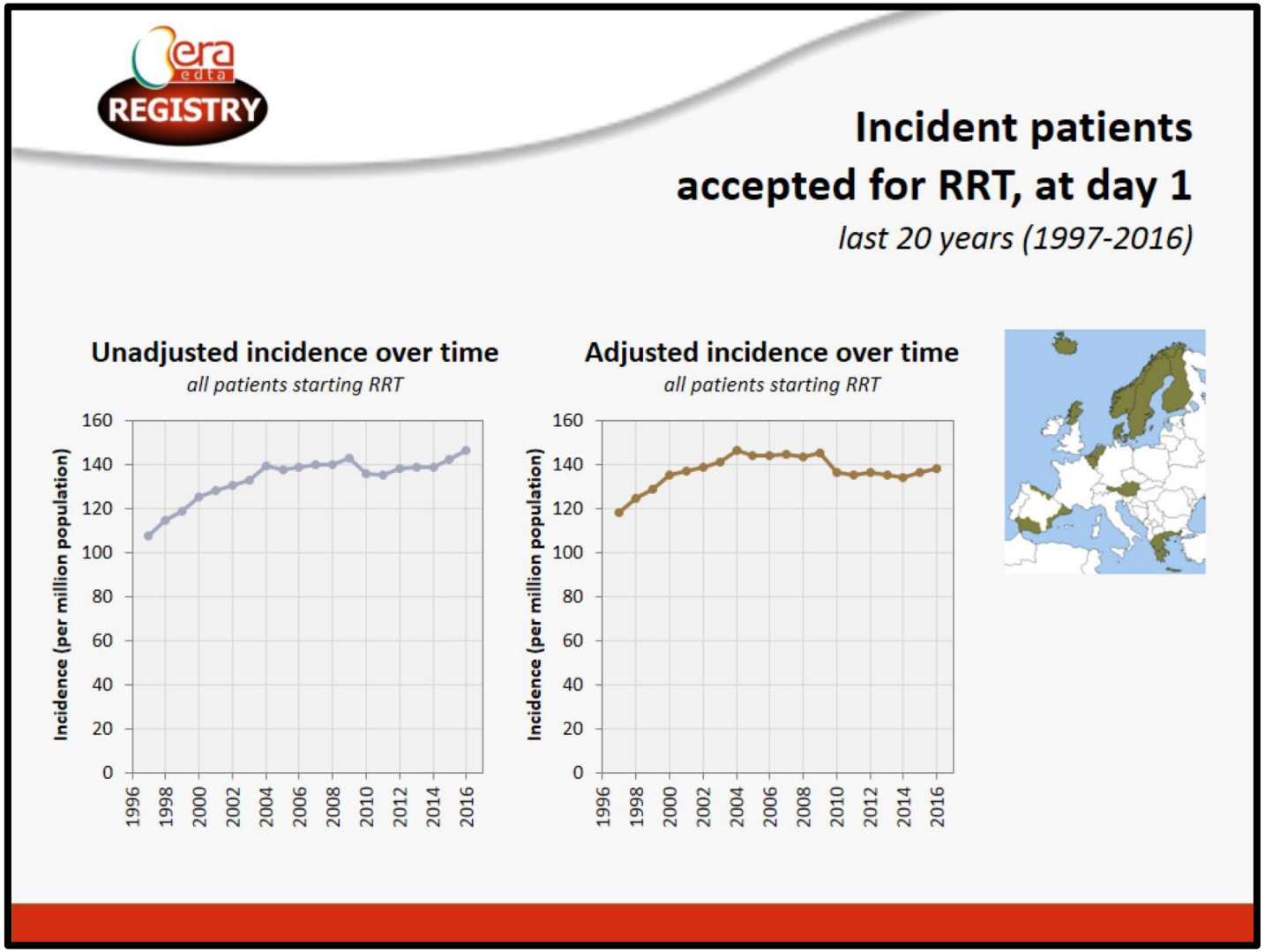
B. Bammens

16 mei 2019

UZ LEUVEN

KU LEUVEN

ESRD: if not incidence, prevalence increases



Incidence

ERA-EDTA Registry Annual Report 2016

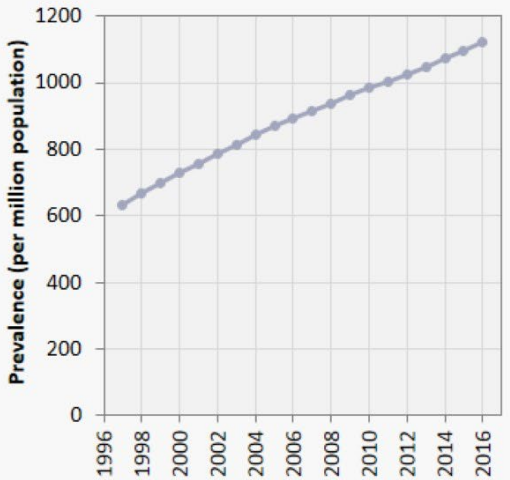
ESRD: if not incidence, prevalence increases

Prevalent patients on RRT

last 20 years (1997-2016)

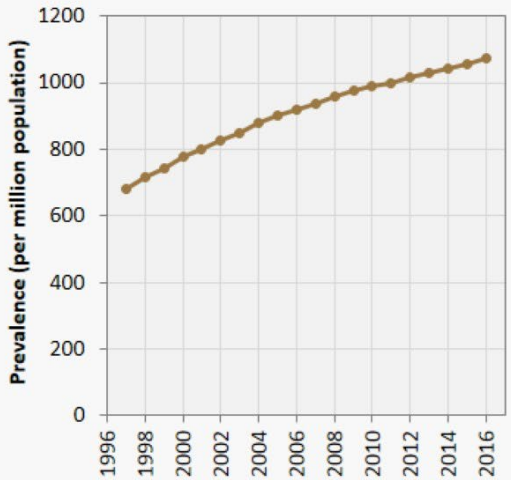
Unadjusted prevalence over time

all patients on RRT



Adjusted prevalence over time

all patients on RRT

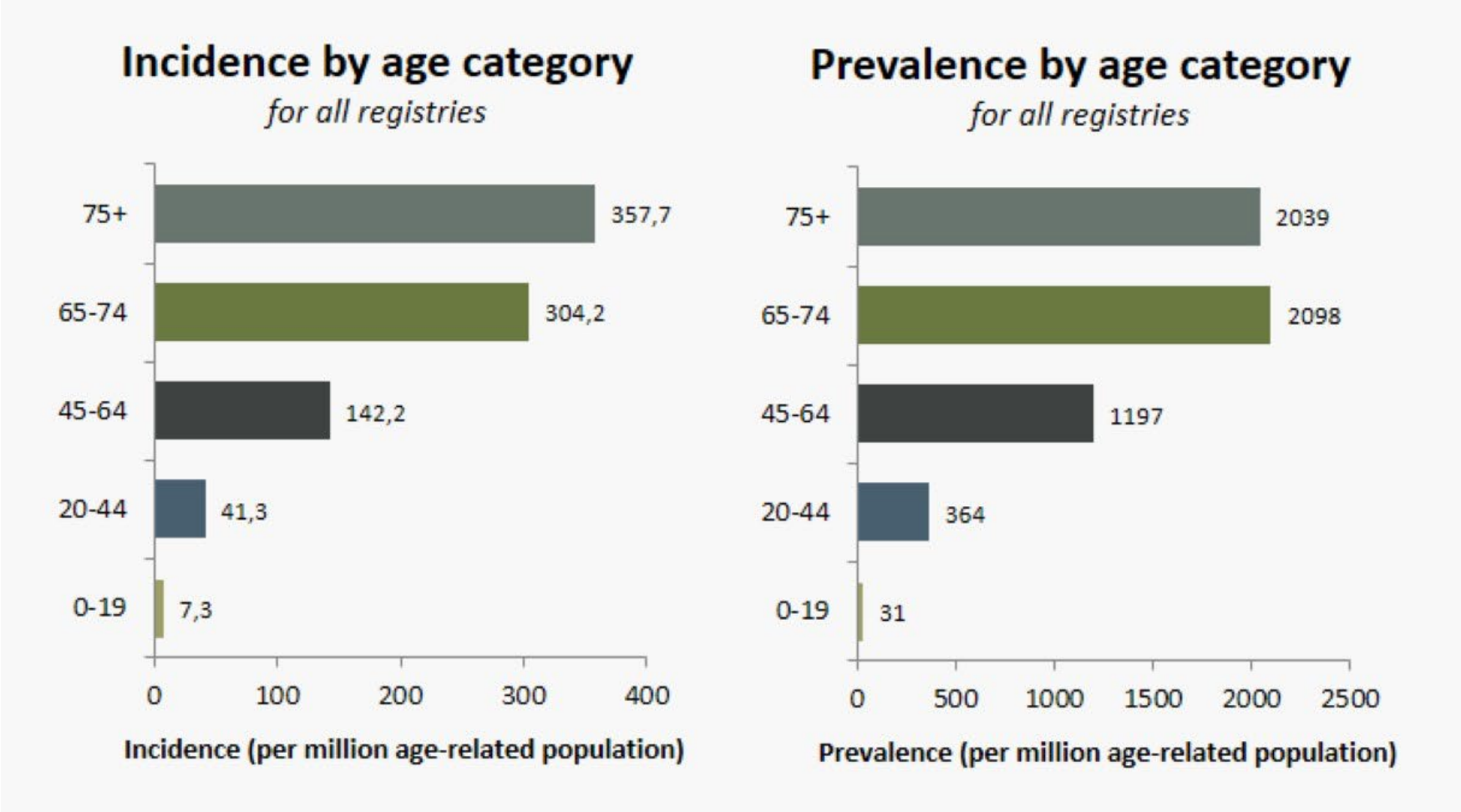




Prevalence

ERA-EDTA Registry Annual Report 2016

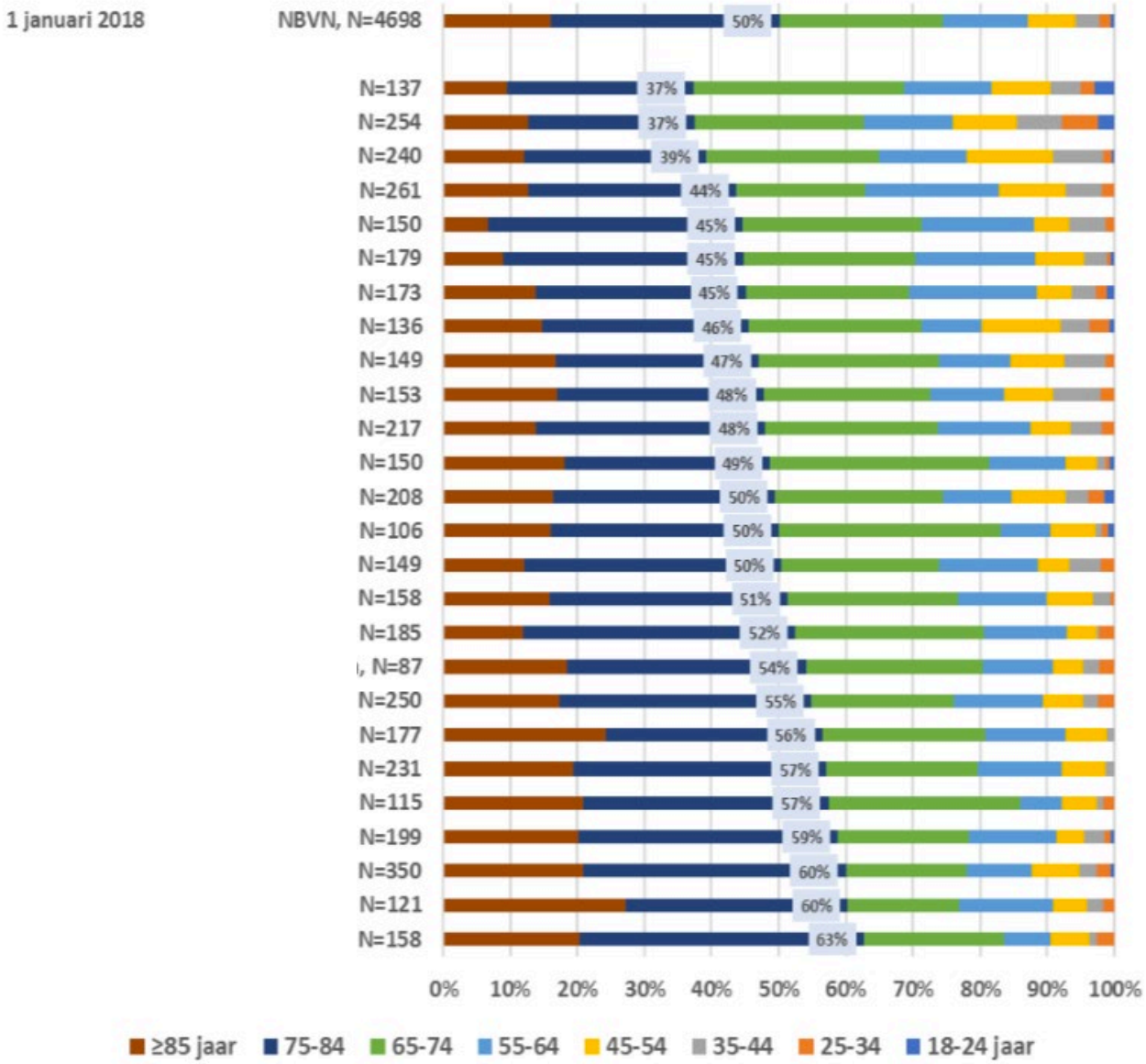
ESRD: if not incidence, prevalence increases





ERA-EDTA Registry Annual Report 2016

ESRD: if not incidence, prevalence increases





Toezichtsrapport NBVN dialysecentra 2019

Cost of healthcare – Cost of ESRD care

Dialysis is resource-heavy,
costing up to



EUR per year, per patient, depend
on the country and method.

In general, RRT consumes 2% of overall healthcare expenditure in Europe, for only 0.1% of the population. The total 'direct' cost of RRT across Europe is unknown, but one estimate puts it at up to €15 billion per year.

EKHA EUROPEAN KIDNEY HEALTH ALLIANCE

EKPF

EDTNA/ERCA

IFKF International Federation of Kidney Foundations

ERA EDTA

European Kidney Health Alliance, Recommendations for Sustainable Kidney Care, August 2015

How are we supposed to deal with that?



ALLOCATION, ALLOTMENT, RATIONING, QUOTA

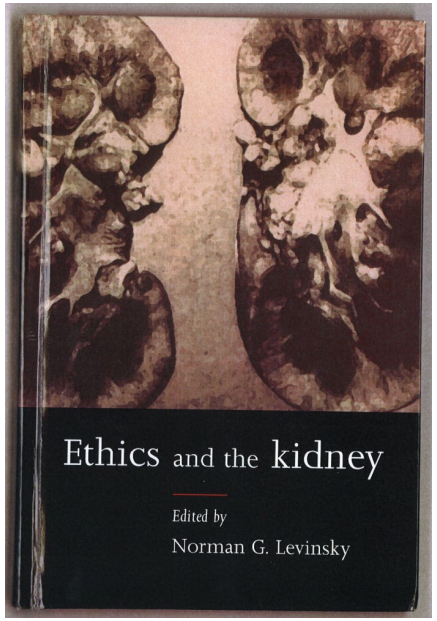
“the action of apportioning or assigning to a special person or purpose”

I approach the topic of resource allocation for patients with end-stage renal disease with trepidation and chagrin. The trepidation comes from the difficulty of the topic, one that becomes harder, not easier, as time goes on. More people need dialysis, more can benefit from it, more seem inappropriate users, and more and more money is needed to pay for it. How are we supposed to deal with that? The chagrin comes from the fact that I have been saying for at least 20 years, in a voice reminiscent of Chicken Little, ‘this can’t go on, it just can’t’. But it has gone on and, in the near term, will no doubt continue to go on.



Daniel Callahan (American philosopher in biomedical ethics) in Ethics and the Kidney, Ed. N. G. Levinsky, 2001

Tactics for the control of costs





Medical criteria for treatment eligibility enforced by law

Age limit enforced by law

Budget cap on expenditures, choice of eligible patients up to physician discretion

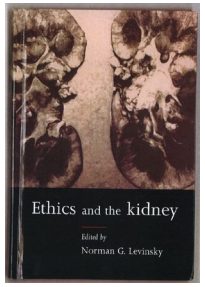
Means-testing approach: co-payment according to ability to pay

Daniel Callahan in Ethics and the Kidney, Ed. N. G. Levinsky, 2001

Tactics for the control of costs



Tactics for the control of costs





Medical criteria for treatment eligibility enforced by law

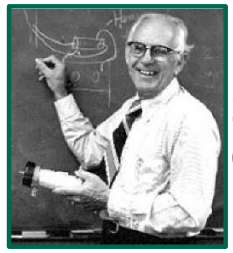
Age limit enforced by law

Budget cap on expenditures, choice of eligible patients up to physician discretion

Means-testing approach: co-payment according to ability to pay

Daniel Callahan in Ethics and the Kidney, Ed. N. G. Levinsky, 2001

The GOD Committee

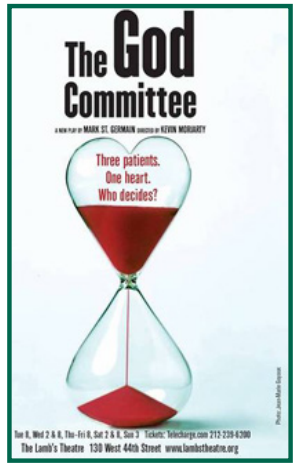


Dr. Belding Scribner
Simple, but revolutionary: 'the Scribner shunt'
Chronic dialysis available <u>for only 1 out of 50</u>!

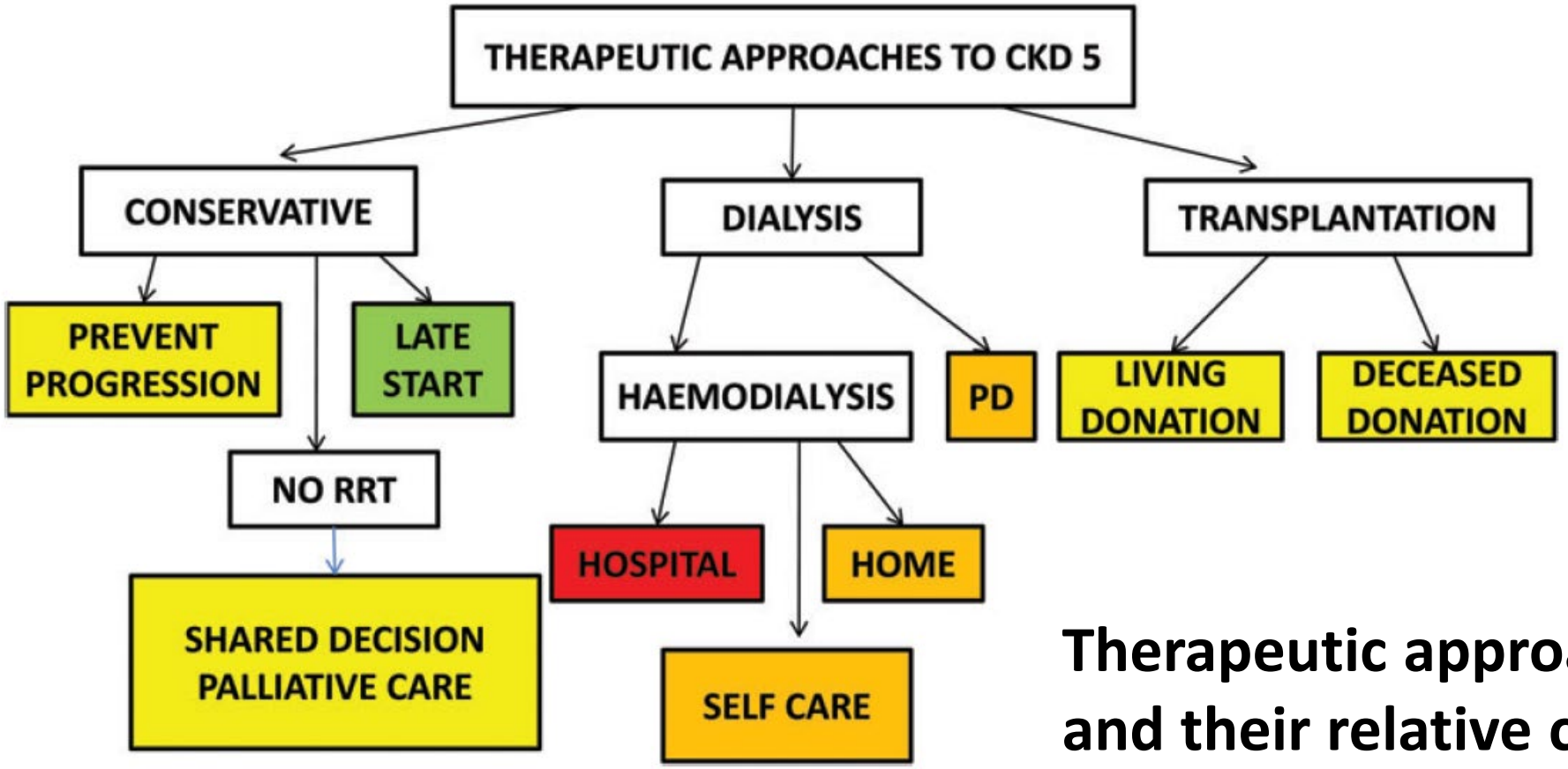
1961 'Admissions and Policies Committee of the Seattle Artificial Kidney Center'

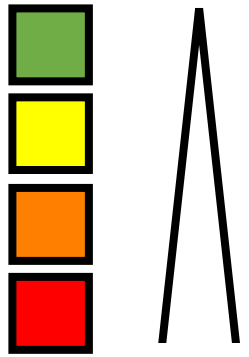
Lawyer, minister, banker, housewife, state government official, labor leader and surgeon

Age, sex, marital status, number of dependents, income, emotional stability, educational background, occupation, past performance and future potential, references



Tactics for the control of costs

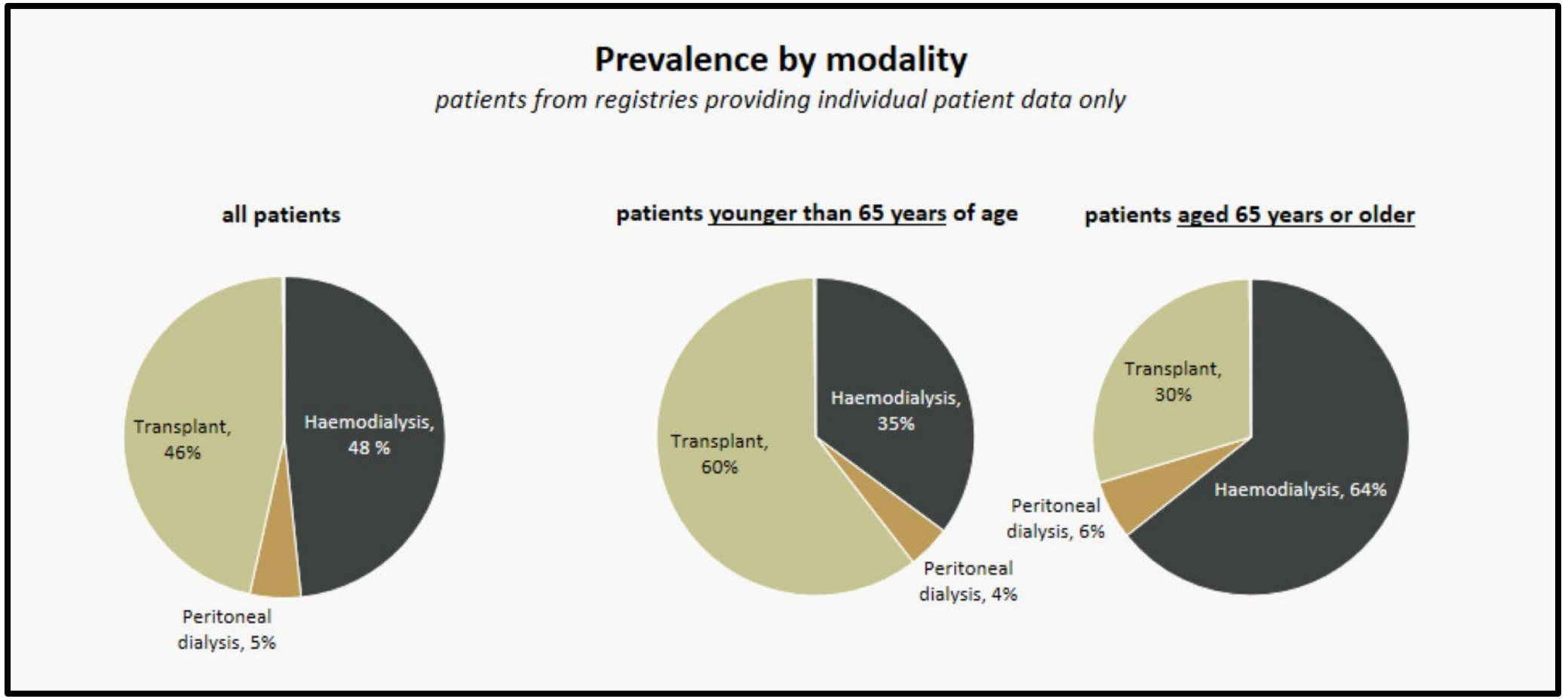




Therapeutic approaches to CKD 5 and their relative cost

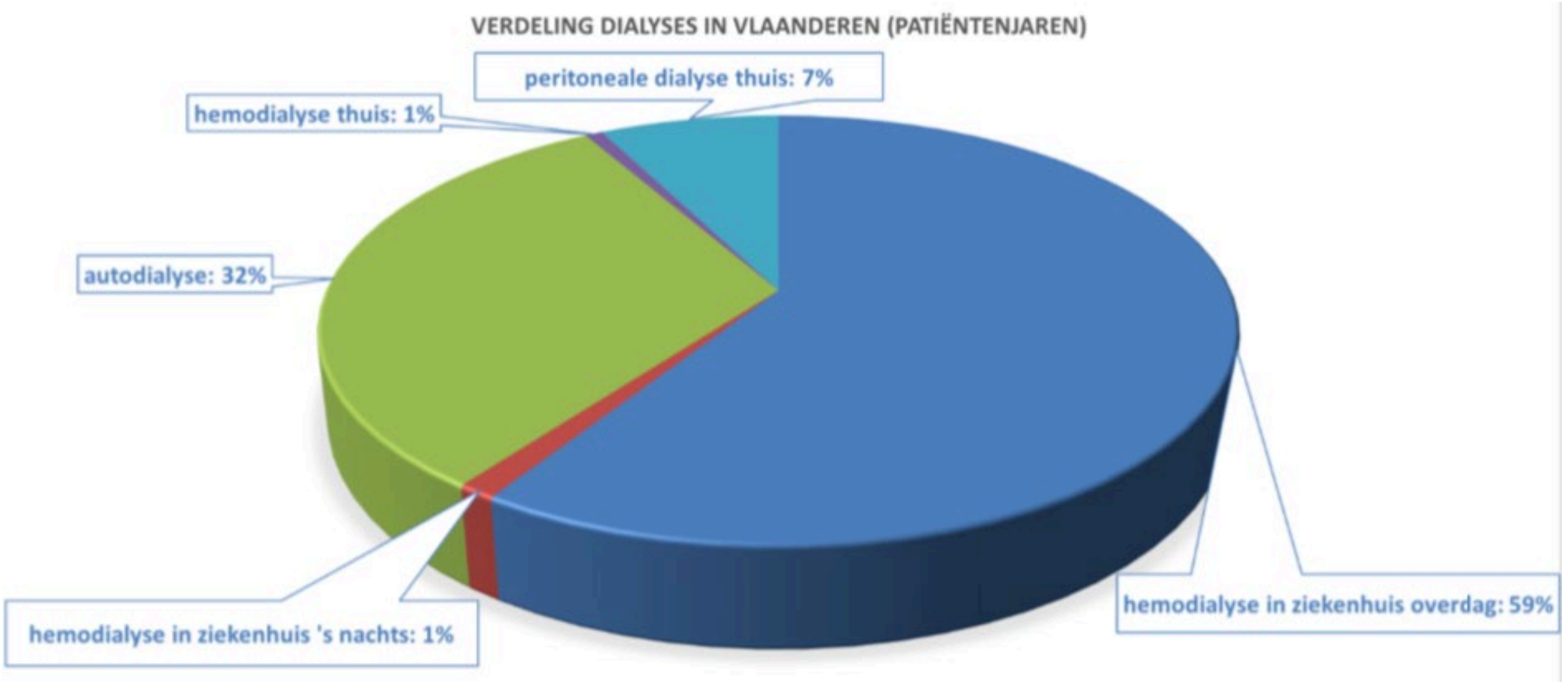
Vanholder et al. Nephrol Dial Transplant 31: 1251-1261, 2016

ESRD: reality check!



ERA-EDTA Registry Annual Report 2016

ESRD: reality check!



Toezichtsrapport NBVN dialysecentra 2019

Tactics for the control of costs

Cost of renal replacement: how to help as many as possible while keeping expenses reasonable?

Raymond Vanholder[1], Norbert Lameire[1], Lieven Annemans[2] and Wim Van Biesen[1]

Strategies to increase transplantation rates

Financial incentives (bundling, green dialysis, for-profit vs. nonprofit)

Education (caregivers & patients)
Timely referral
Prevention of CKD progression

(Assisted) home therapies
Non-start/withdrawal
Later start
Reuse (?)

Vanholder et al. Nephrol Dial Transplant 31: 1251-1261, 2016

Tactics for the control of costs

Cost of renal replacement: how to help as many as possible while keeping expenses reasonable?

Raymond Vanholder[1], Norbert Lameire[1], Lieven Annemans[2] and Wim Van Biesen[1]

Strategies to increase transplantation rates

Financial incentives (bundling, green dialysis, for-profit vs. nonprofit)

Education (caregivers & patients)

Timely referral

Prevention of CKD progression

(Assisted) home therapies

Non-start/withdrawal

Later start

Reuse (?)

Vanholder et al. Nephrol Dial Transplant 31: 1251-1261, 2016

Tactics for the control of costs

Review Article

Addressing the burden of dialysis around the world: A summary of the roundtable discussion on dialysis economics at the First International Congress of Chinese Nephrologists 2015

The roundtable discussion was attended by experts from Hong Kong, China, Canada, England, Malaysia, Singapore, Taiwan and United States. Potential solutions to cope with the heavy burden on dialysis include the prevention and retardation of the progression of CKD; wider use of home-based dialysis therapy, particularly PD; promotion of kidney transplantation; and the use of renal palliative care service.

Li et al. Nephrology 22 (Suppl 4): 3-8, 2017

Home treatment = lower cost!

Home treatment = lower cost!



Collège de la Haute Autorité de Santé, France, October 2014

Home treatment = lower cost!

HAS HAUTE AUTORITÉ DE SANTÉ

agence de la biomédecine

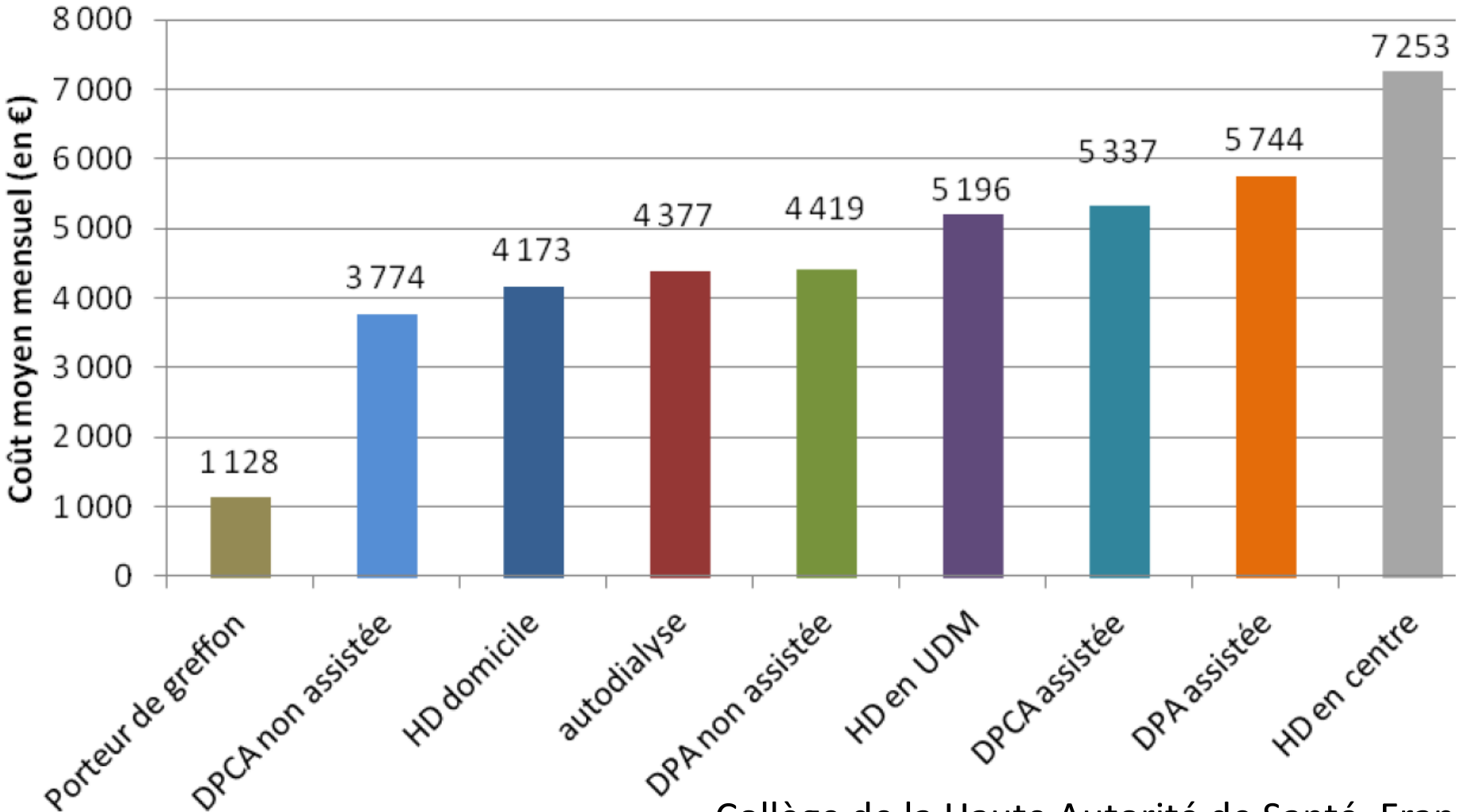
- hospital care, medical and paramedical fees for hospital and outpatient care
- medical goods (drugs and medical devices)
- laboratory tests
- transport
- personal autonomy allowances

(for dialysis or transplant but also comorbidities and other medical complications)

Collège de la Haute Autorité de Santé, France, October 2014

Home treatment = lower cost!

Monthly cost in €



Collège de la Haute Autorité de Santé, France, October 2014

Home treatment = lower cost!

The financial impact of increasing home-based high dose haemodialysis and peritoneal dialysis

Frank Xiaoqing Liu[1*], Catrin Treharne[2], Bruce Culleton[1], Lydia Crowe[2] and Murat Arici[3]

- United Kingdom
- Markov model
- 5 year budget impact of increasing home-based therapies (HHD, PD)
- Seen from the NHS payer perspective

Liu et al. BMC Nephrology 15: 161-174, 2014

Home treatment = lower cost!

Table 4 Five-year cumulative budget impact results for the entire cohort (reference scenario versus scenarios 1–5)

		Difference			
	Reference scenario (£)	Scenario 1 (£)	Scenario 2 (£)	Scenario 3 (£)	Scenario 4 (£)	Scenario 5 (£)
Access costs	67,573,647			−772,145 (-1.14%)	−1,533,465 (-2.27%)	2,162,385 (3.20%)
Treatment costs	2,818,006,173		[illegible]109 (0.56%)		15,651,634 (0.56%)	56,467,306 (2.00%)
ESA costs	173,328,756		755,080 (0.44%)			
Monitoring costs	49,553,898		191,026 (0.39%)	191,026 (0.39%)		
Complication costs	147,756,210		582,276 (0.39%)	582,276 (0.39%)		1,490,818 (1.01%)
Transportation costs	620,677,229	−36,982,815 (-5.96%)	−36,982,815 (-5.96%)	−70,900,727 (-11.42%)		101,841,215 (16.41%)
Total costs	**3,876,895,913**	**−19,565,088 (-0.50%)**	**19,930,289 (0.51%)**	**−40,020,032 (-1.03%)**	**−94,451,365 (-2.44%)**	**172,577,361 (4.45%)**

Abbreviations: *ESA* Erythropoiesis-stimulating agents.

HD HHD 10% (current tariff)

HD HHD 10% (increased tariff)

HD HHD 10% (increased tariff) PD 20%

HD HHD 10% (increased tariff) PD 25%

ICHD 100%

Reference = current situation:

PD 14.1%

ICHD 82%

Conventional HHD 3.9%

High dose HHD 0%

Liu et al. BMC Nephrology 15: 161-174, 2014

Home treatment = lower cost!

FINANCIAL IMPLICATIONS TO MEDICARE FROM CHANGING THE DIALYSIS MODALITY MIX UNDER THE BUNDLED PROSPECTIVE PAYMENT SYSTEM

Frank X. Liu,[1] Surrey M. Walton,[2] Robert Leipold,[3] Deborah Isbell,[1] and Thomas A. Golper[4]

- United States
- Excel-based 5 year budget model
- Impact of bundled prospective payment system on dialysis-associated cost
- Seen from the Medicare perspective

Liu et al. Perit Dial Int 34: 749-757, 2014

Home treatment = lower cost!

Cumulative Costs for Years 2013–2017 and Total Change in Costs by Scenarios ($1,000s)

	Reference	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Dialysis	$67,396,651			$67,247,762	
Adverse Events	$11,472,977				
Drugs[a]	$1,390,156				
Transplants	$17,416,120				
Total	$97,675,904	$97,561,076	$97,443,035		$97,797,158
Savings		-$114,828	-$232,868	-$350,909	$121,254

Increasing HHD 0.5%/year PD 1%/year

Increasing HHD 0.75%/year PD 2%/year

Increasing HHD 1%/year PD 3%/year

Decreasing PD 1%/year

No change HHD

Reference = stable distribution over 5 years (USRDS ADR 2013)

ICHD 91% PD 7.7% HHD 1.3%

Liu et al. Perit Dial Int 34: 749-757, 2014

Home treatment = lower cost!

Economic impact of a modification of the treatment trajectories of patients with end-stage renal disease

Cécile Couchoud[1], Anne-Line Couillerot[2], Emmanuelle Dantony[3,4], Mad-Hélénie Elsensohn[3,4], Michel Labeeuw[5], Emmanuel Villar[4,6], René Ecochard[3,4] and Isabelle Bongiovanni[2]

- France
- Prediction of 15 year trajectories and outcomes of incident ESRD patients
- 6 subcohorts by age and diabetes
- Based on 67258 REIN and 65662 French national health insurance data

Couchoud et al. Nephrol Dial Transplant 30: 2054-2068, 2015

Home treatment = lower cost!

Economic impact of a modification of the treatment trajectories of patients with end-stage renal disease

Cécile Couchoud[1], Anne-Line Couillerot[2], Emmanuelle Dantony[3,4], Mad-Hélénie Elsensohn[3,4], Michel Labeeuw[5], Emmanuel Villar[4,6], René Ecochard[3,4] and Isabelle Bongiovanni[2]

Status quo

= current initial modality distributions, transition rates and costs

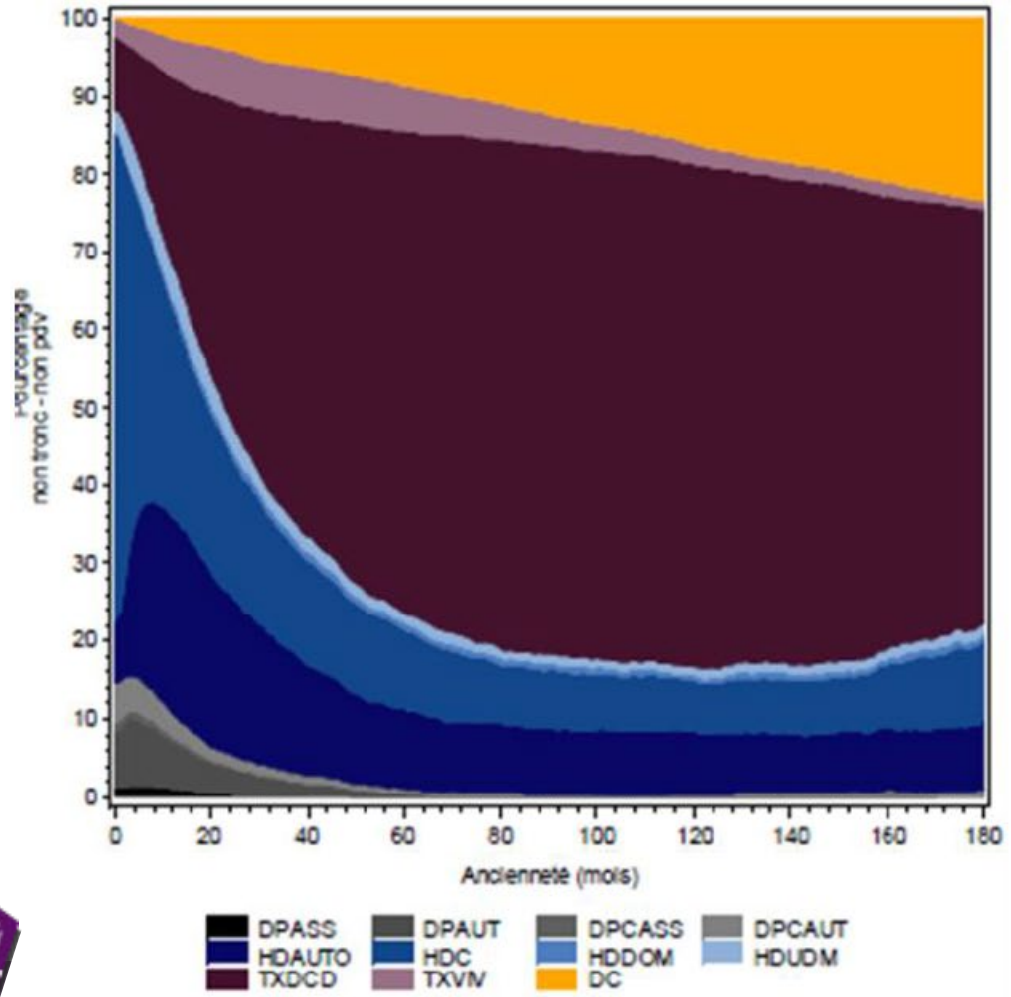
vs.

New strategies

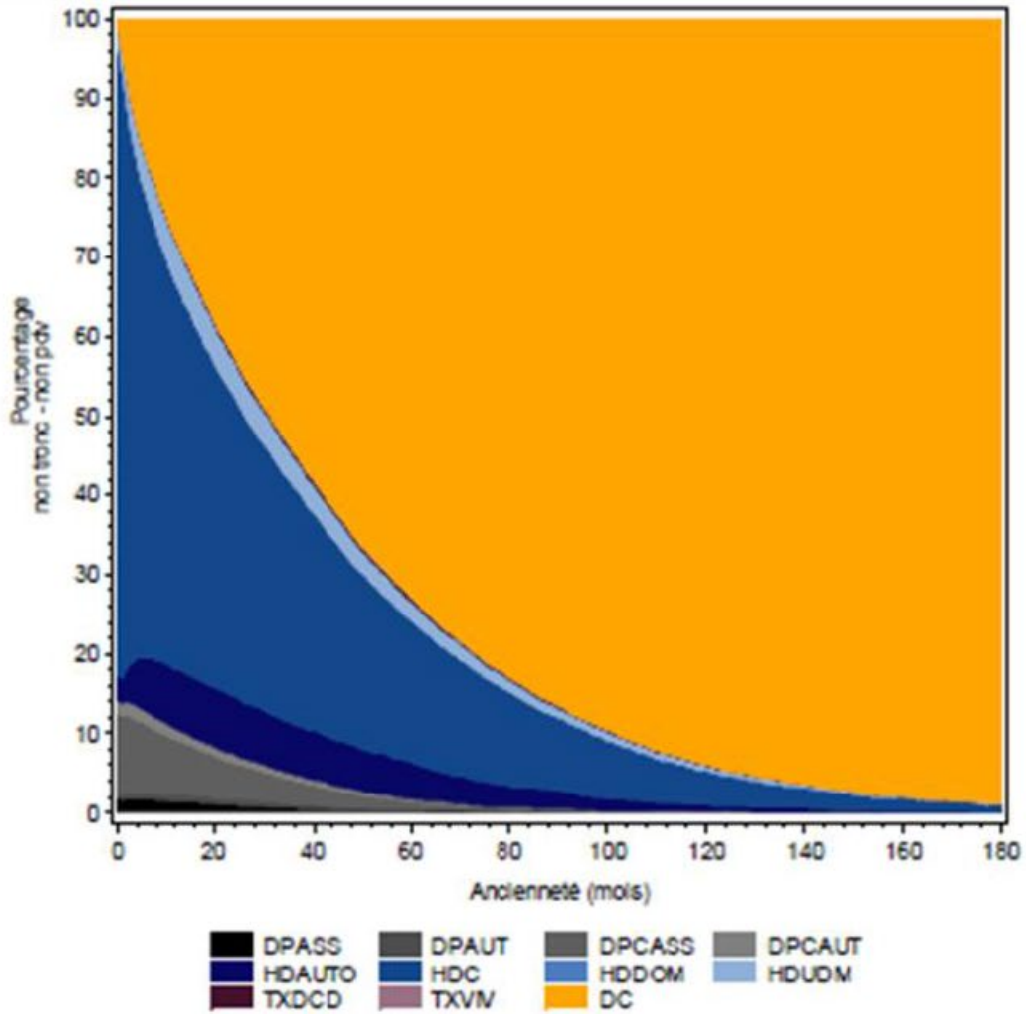
Couchoud et al. Nephrol Dial Transplant 30: 2054-2068, 2015

Status quo

Age 18-44 years @ start of RRT



Age ≥ 70 years @ start of RRT



Couchoud et al. Nephrol Dial Transplant 30: 2054-2068, 2015

New strategies

Age 18-44 years @ start of RRT – non-diabetic

Cohort = 823 incident patients	Status quo	Renal TR, all donors	Renal TR, deceased donor	Renal TR, living donor	Combined: CAPD, APD and home HD	Non-assisted CAPD, transfer to self-care unit	Non-assisted CAPD, transfer to home HD	Non-assisted APD	Non-assisted APD, transfer to home HD	Non-assisted CAPD	Non-assisted APD, transfer to self-care unit	Home HD	Daily home HD
Cost/months (euros) for 1 patient	2684	2216	2233	2443	2584	2618	2618	2619	2623	2625	2624	2656	2714
Comparison with status quo (euros/ months)		−468	−451	−240	−100	−66	−65	−64	−61	−59	−60	−27	30

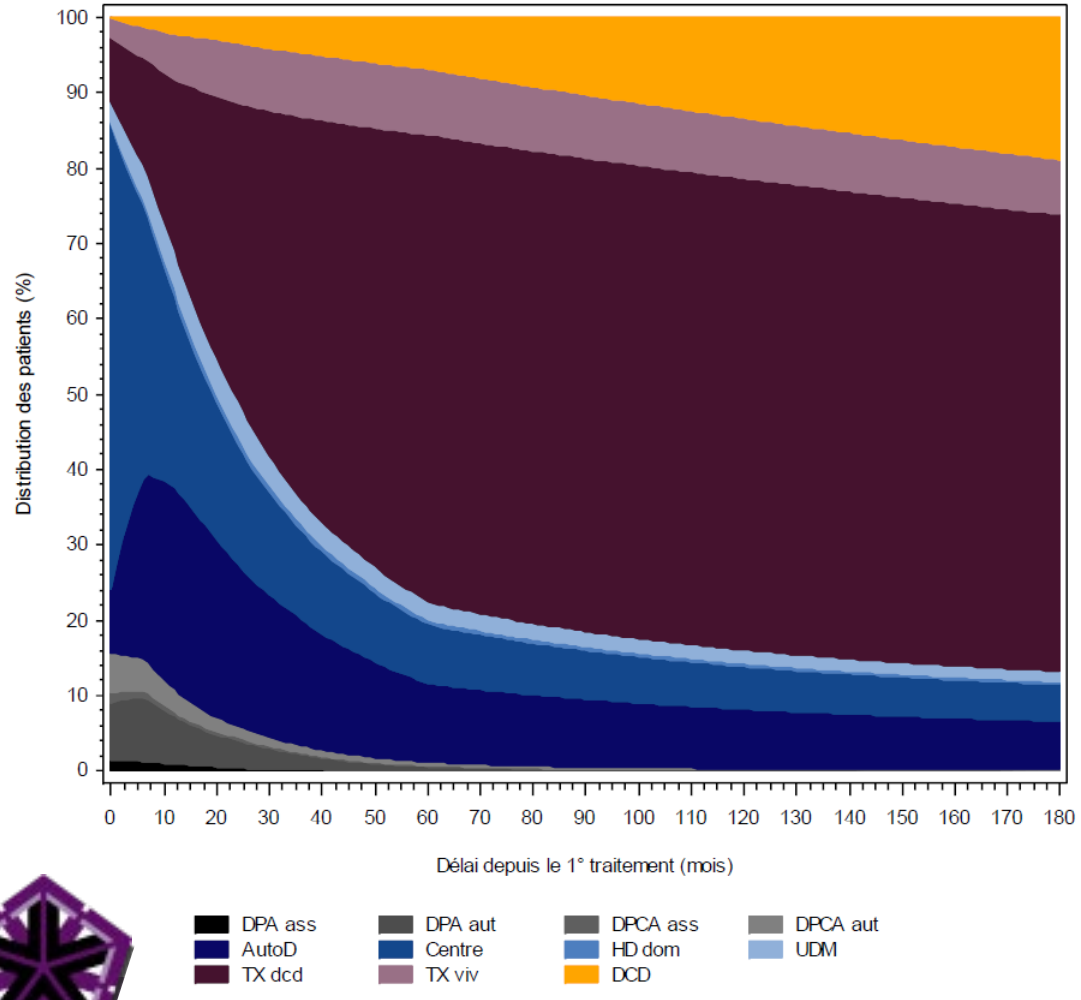
Renal TR, all donors	Renal TR, deceased donor	Renal TR, living donor
2216	2233	2443
−468	−451	−240

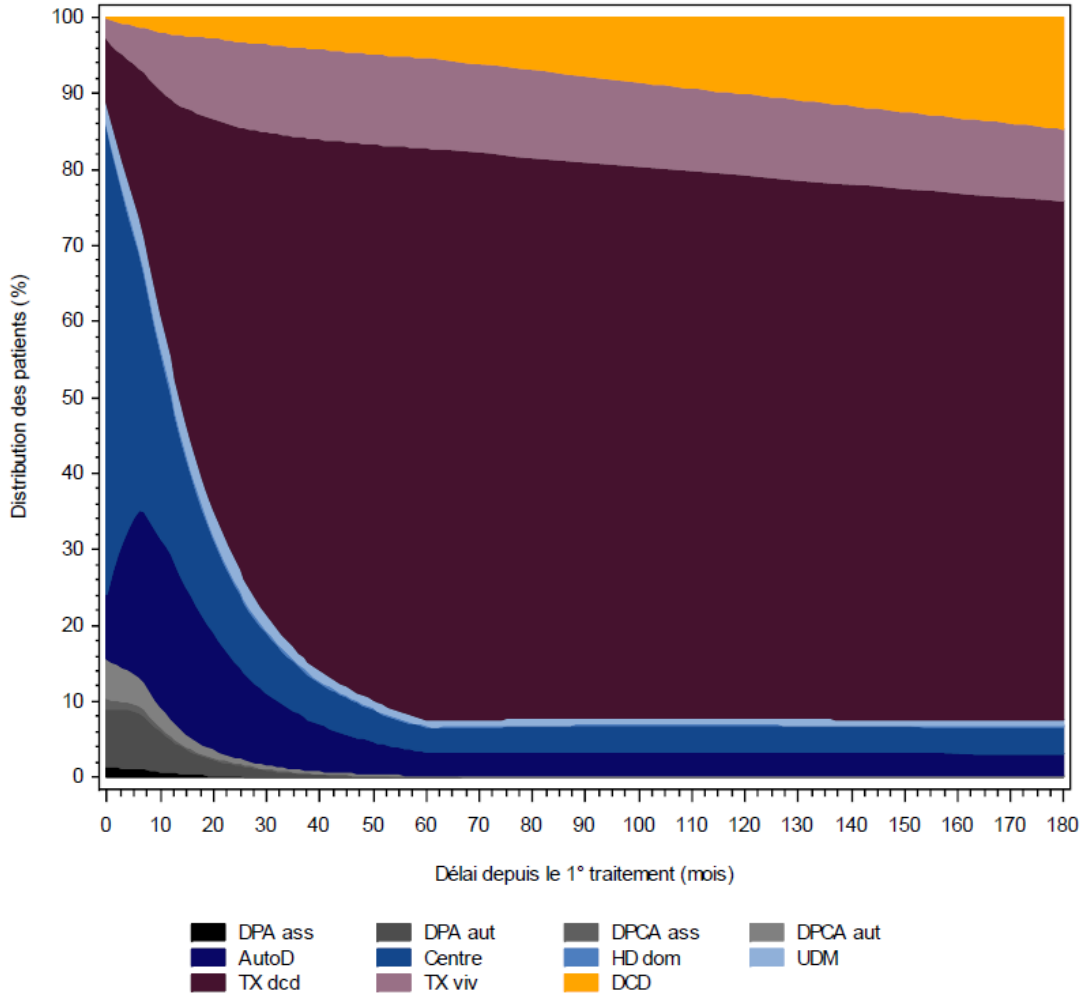


Couchoud et al. Nephrol Dial Transplant 30: 2054-2068, 2015

New strategies

Age 18-44 years @ start of RRT – non-diabetic





Couchoud et al. Nephrol Dial Transplant 30: 2054-2068, 2015

New strategies

Age ≥ 70 years @ start of RRT – diabetic

Cohort = 2096 incident patients	Status quo	Renal TR, deceased donor	Combined: CAPD, APD and local facility under medical supervision	Combined: CAPD, APD and facility under medical supervision	Local facility under medical supervision	Facility under medical supervision	Local facility under medical supervision, transfer to Hospital-based HD	Facility under medical supervision, transfer to hospital-based HD	Assisted CAPD, transfer to facility under medical supervision	Assisted CAPD	Assisted APD, transfer to facility under medical supervision	Assisted APD
Cost/months (euros) for 1 patient	7361	6882	6917	6949	7015	7051	7053	7086	7222	7243	7304	7314
Comparison with status quo (euros/months)		−479	−444	−412	−346	−310	−308	−275	−139	−119	−58	−47

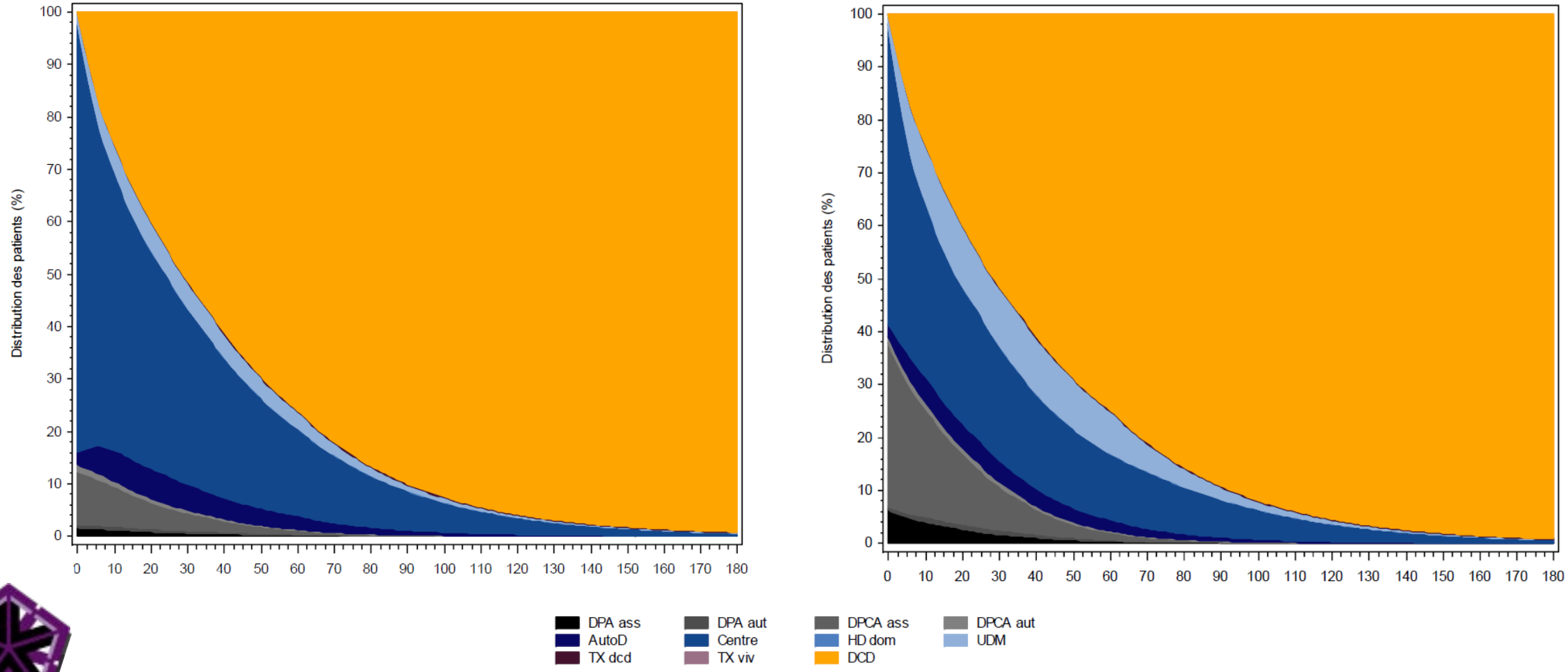


Combined: CAPD, APD and local facility under medical supervision	Combined: CAPD, APD and facility under medical supervision
6917	6949
−444	−412

Couchoud et al. Nephrol Dial Transplant 30: 2054-2068, 2015

New strategies

Age ≥ 70 years @ start of RRT – diabetic



Couchoud et al. Nephrol Dial Transplant 30: 2054-2068, 2015

To treat the elderly at home…

How come you never say that you love me anymore?



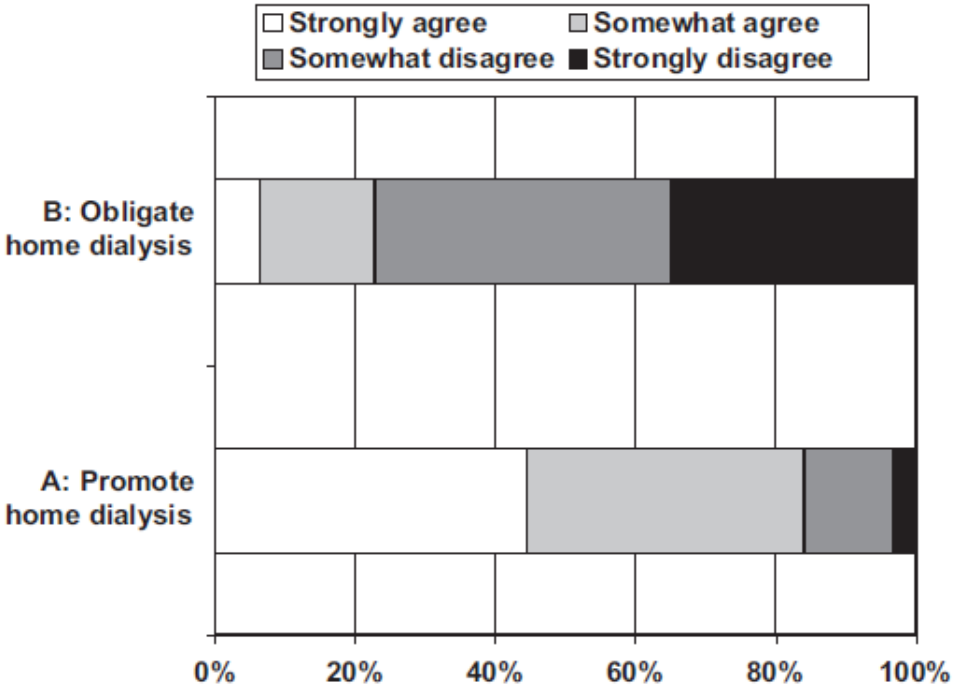
I told you once.
If anything changes,
I'll let you know.

…that is the real cha(lle)nge!

Can all patients be treated at home?

DEBATE: Should Dialysis at Home be Mandatory for All Suitable ESRD Patients?

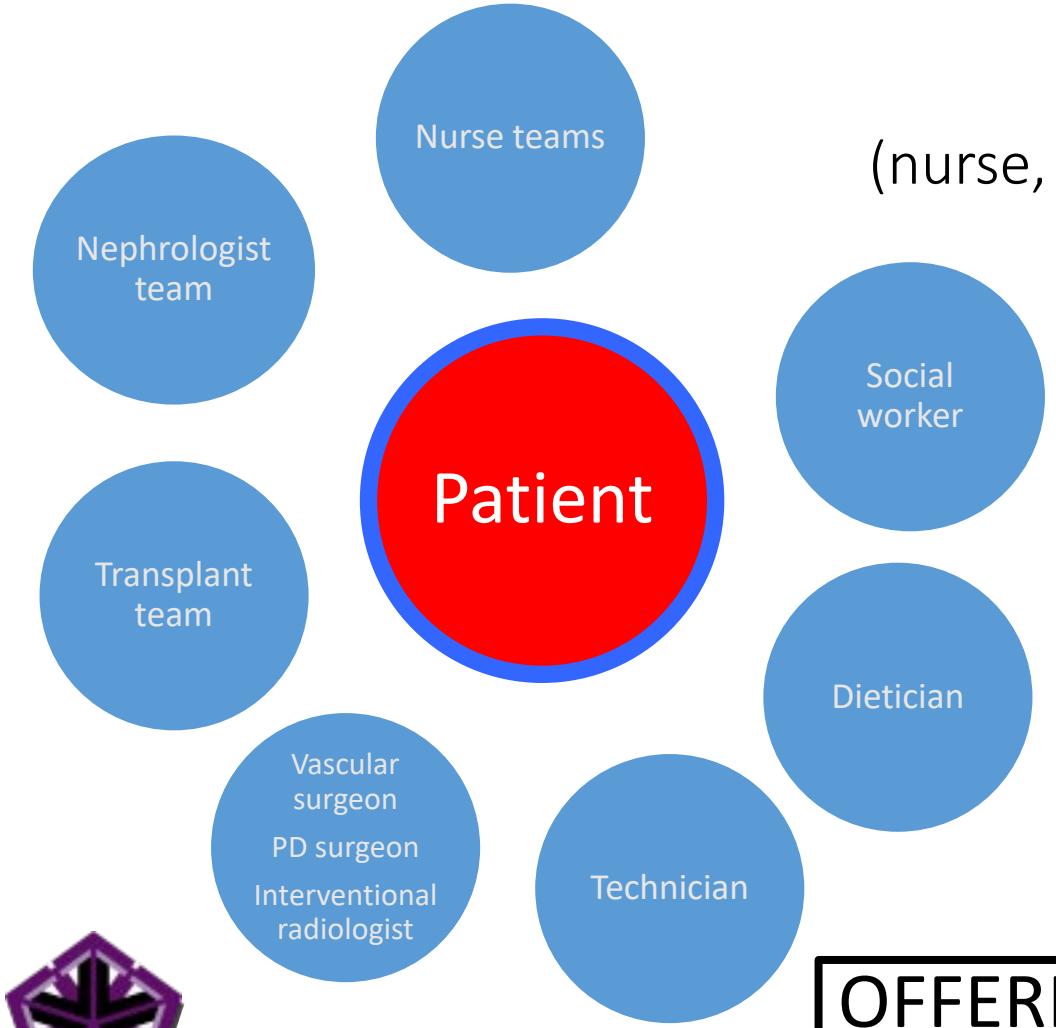
Patients Should Not Be Forced Onto Home Dialysis



What is your opinion about these aspects of CKD care in Canada?

Mendelssohn et al. Semin Dial 28: 155-158, 2015
Mendelssohn et al. Am J Kidney Dis 47: 277-284, 2006

Can all patients be treated at home?



multidisciplinary predialysis clinic
(nurse, nephrologist, dietician, social worker, psychologist)

home therapies team

access team(s)

(pre-)transplant team

OFFERING  OPTIONS (to all) HELPS!

Can all patients be treated at home?

UZ Leuven multidisciplinary predialysis clinic

12/2015

n = 341 included in the UZ Leuven predialysis program.

PD offered as an option	82.1%
PD chosen by	**16.7%**

(This is 20.3% of patients offered PD as an option.)

HHD offered as an option	40.0%
HHD chosen by	**3.6%**

(This is 9.0% of patients offered HHD as an option.)

20.3% (incident)
home therapies @ UZ Leuven

Can all patients be treated at home?

UZ Leuven multidisciplinary predialysis clinic

01/2019

n = 359 included in the UZ Leuven predialysis program.

PD offered as an option	87.0%
PD chosen by	**22.0%**

(This is 25% of patients offered PD as an option.)

HHD offered as an option	**61.0%**
HHD chosen by	**4.7%**

(This is 7.7% of patients offered HHD as an option.)

A realistic view in our approach…

26.7% (incident)
home therapies @ UZ Leuven

Can all patients be treated at home?

01/2019

26.7% (incident)
home therapies @ UZ Leuven

Home treatment = lower cost!

self-care dialysis symposium

Cumulative Costs for Years 2013–2017 and Total Change in Costs by Scenarios ($1.0

	Reference	Scenario 1	Scenario 2		Scenario 4
Dialysis	$67,396,651	$67,340,[illegible]	$67,298,463	$67,247,762	[illegible]
Adverse Events	$11,472,977			$11,[illegible]	
Drugs[a]	$1,390,156				
Transplants	$17,416,120				
Total	$97,675,904	$97,561,076	$97,443,035	[illegible],524,995	$97,797,158
Savings		-$114,828	-$232,868	-$350,909	$121,254

Increasing HHD 0.5%/year PD 1%/year

Increasing HHD 0.75%/year PD 2%/year

Increasing HHD 1%/year PD 3%/year

Decreasing PD 1%/year

No change HHD

Reference = stable distribution over 5 years (USRDS ADR 2013)

ICHD 91% PD 7.7% HHD 1.3%

Liu et al. Perit Dial Int 34: 749-757, 2014

Can all patients be treated at home?

The economic considerations of patients and caregivers in choice of dialysis modality

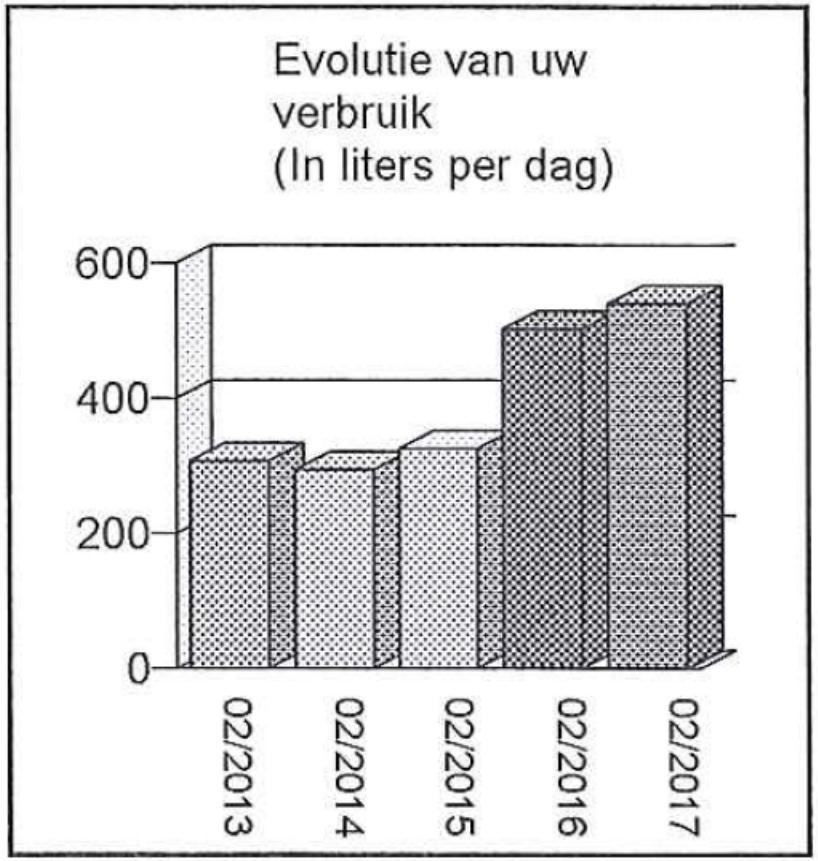
Rachael C. WALKER,[1,2] Kirsten HOWARD,[1] Allison TONG,[1,3] Suetonia C. PALMER,[4] Mark R. MARSHALL,[5] Rachael L. MORTON[6]

- New-Zealand
- Semi-structured interviews
- Predialysis or dialysis patients (n = 43)
- The patients' caregivers (n = 9)

Walker et al. Hemodialysis International 20: 634-642, 2016

Can all patients be treated at home?

Use of tap water (L/day)



Tx → ICHD → HHD

Source: water bill of one of our HHD patients

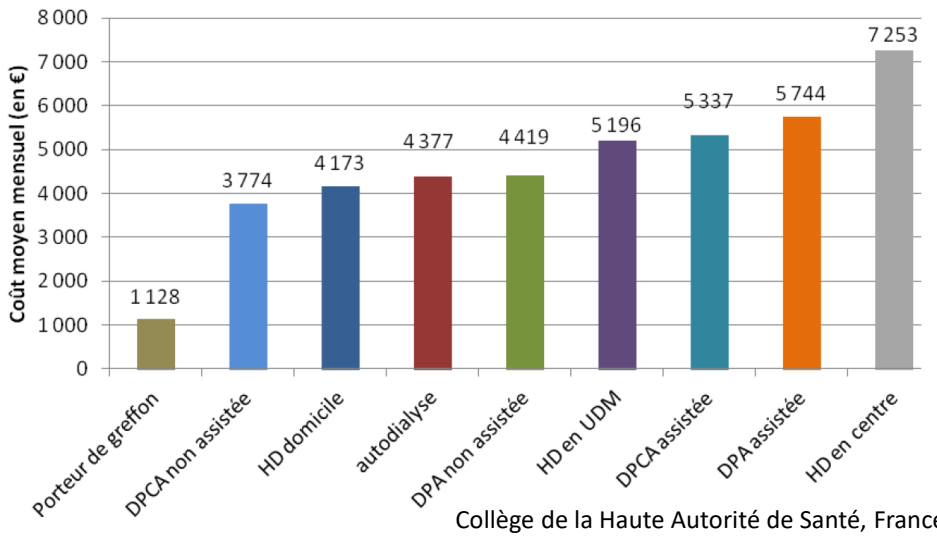
Can all patients be treated at home?



- Belgium
- Additional yearly cost: € 1719.83
- Yearly fee for home treated patients: € 859.65

D'Huyvetters Horizon June 2016

Can all patients be treated at home?

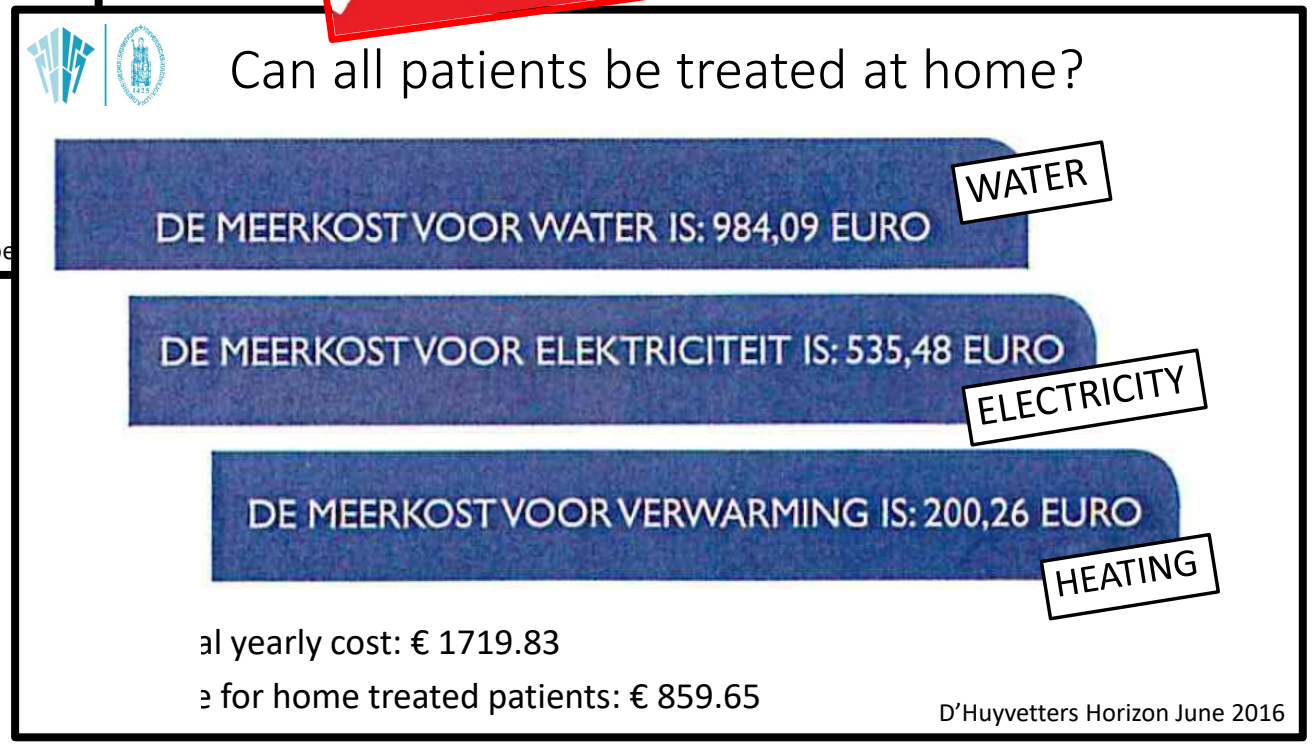


Collège de la Haute Autorité de Santé, France, Octobe

POLICY MAKERS should create incentives for



stakeholders!



Conclusions

- Healthcare and ESRD costs are high and keep on growing.
- Strategies to reduce ESRD costs should consider both economical and ethical aspects and grow from within the nephrology and patient/caregiver communities.
- Optimizing access to transplantation and to home based therapies will help to keep expenses reasonable and help as many patients as possible.
- Policy makers should create incentives for ALL stakeholders (professionals & education & industry & patients & caregivers) to achieve these goals.