



# De lessen uit DOMESTICO

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# Disclosure A. v. Eck v.d. Sluijs

|  |  |
|--|--|
| (potentiële) belangenverstremgeling  | Geen / Zie hieronder   |
| Voor bijeenkomst mogelijk relevante relaties met bedrijven   | Bedrijfsnamen  |
| <ul style="list-style-type: none"><li>• Sponsoring of onderzoeksgeld</li><li>• Honorarium of andere (financiële) vergoeding</li><li>• Aandeelhouder</li><li>• Andere relatie, namelijk ...</li></ul> | <ul style="list-style-type: none"><li>• Baxter</li><li>•</li><li>•</li><li>•</li></ul> |



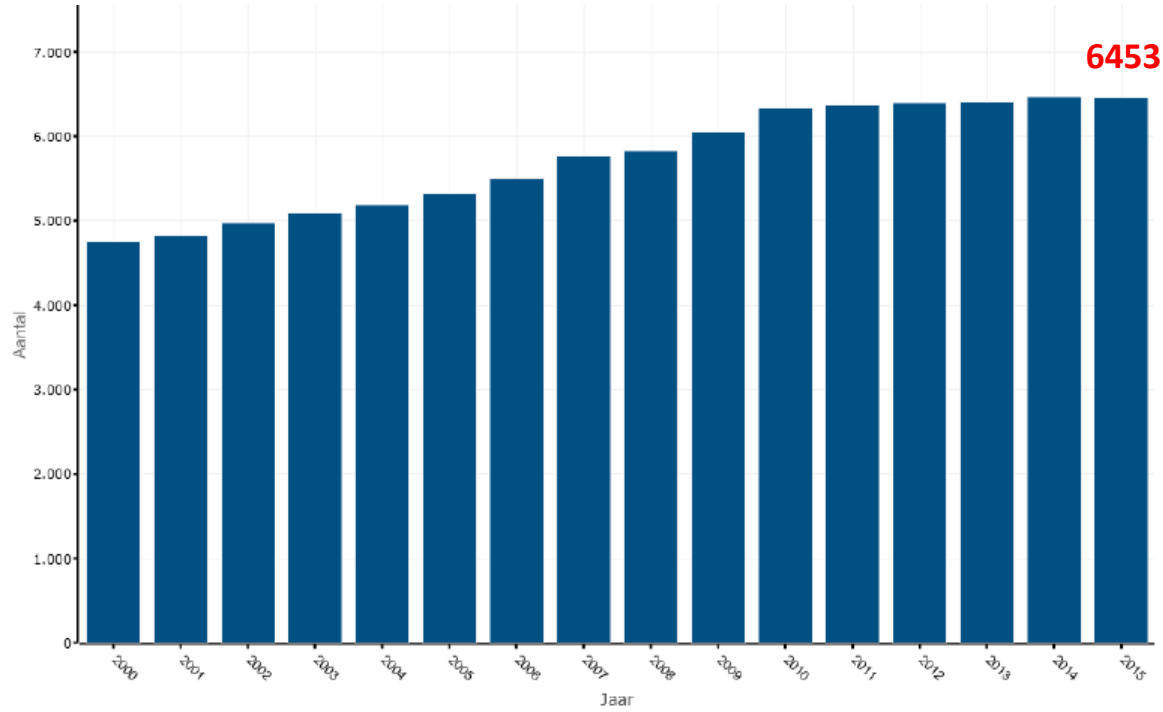
# Dutch nOcturnal and hoME dialysis Study To Improve Clinical Outcomes



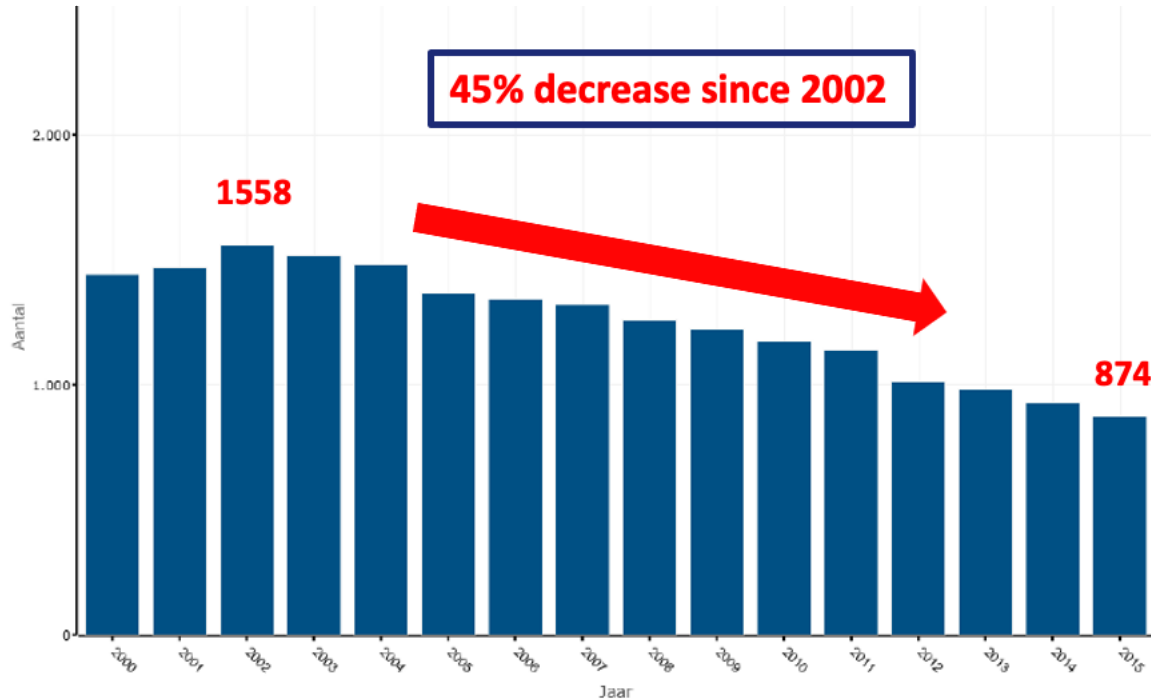
# DOMESTICO: Hoe het allemaal begon.....



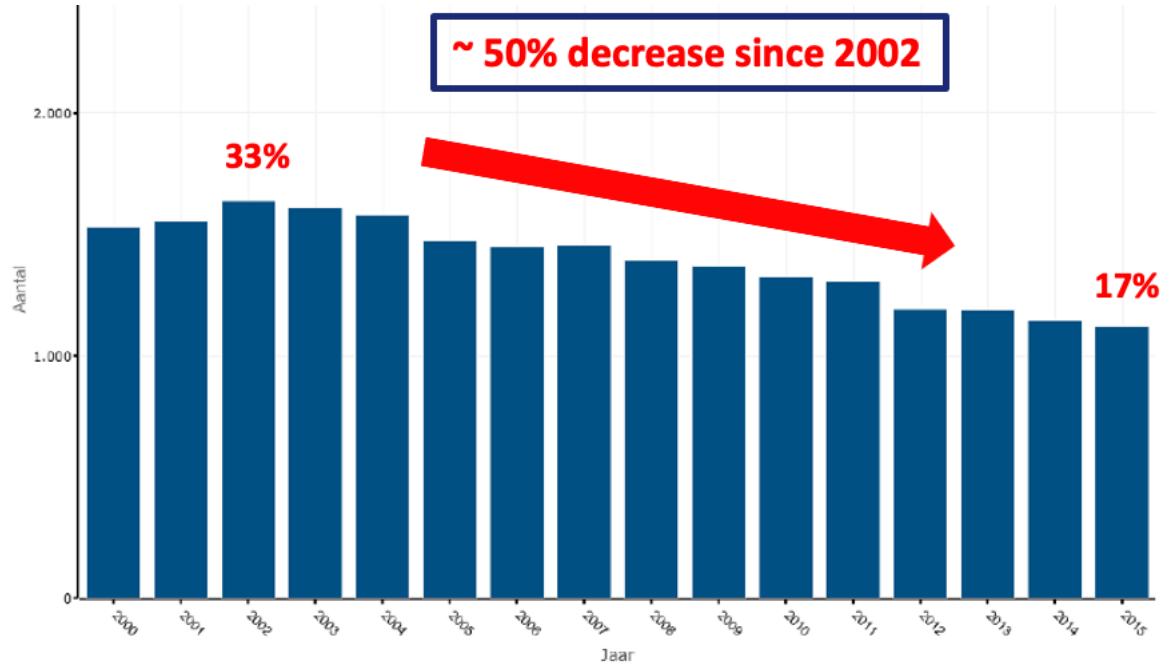
# Aantal dialyse patiënten (2000-2015)



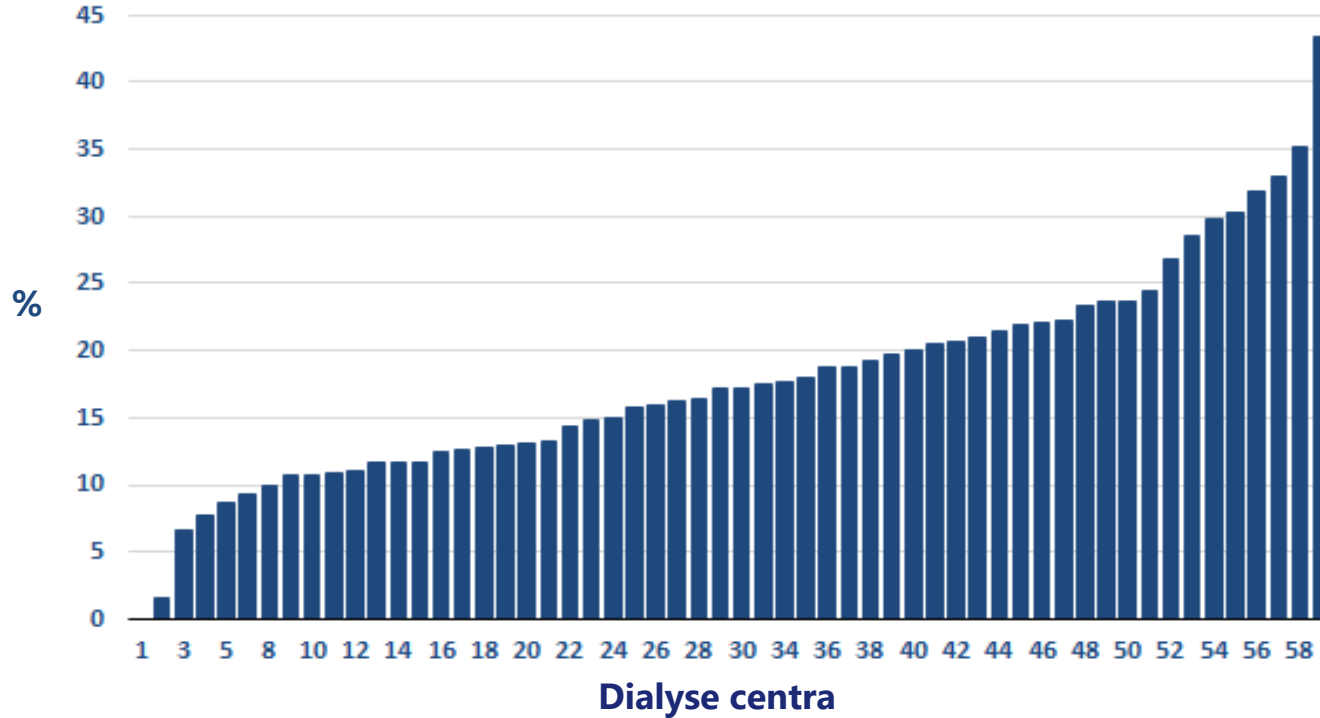
# Aantal PD patiënten (2000-2015)



# Aantal thuisdialyse patiënten (2000-2015)

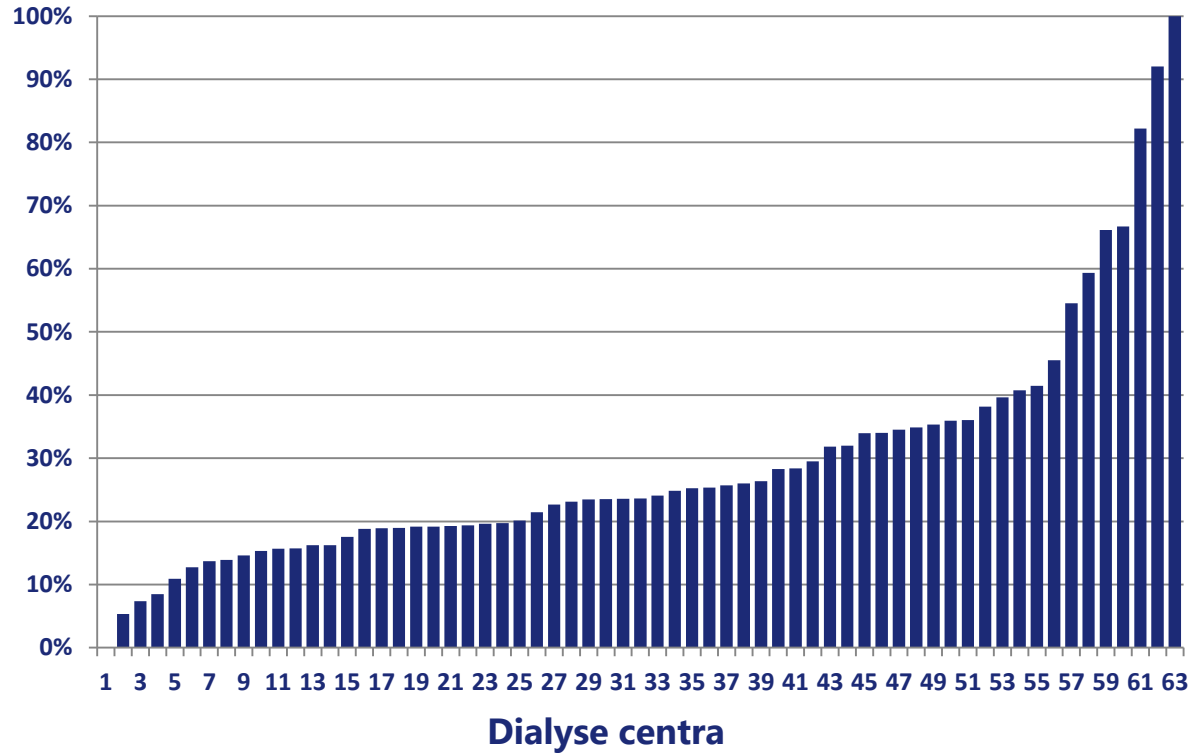


# Proportie PD patiënten per centrum (2015)





# PD Technieffalen per centrum (2012-2014)





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# Dutch nOcturnal and hoME dialysis Study To Improve Clinical Outcomes



**Wanneer is DOMESTICO  
prospectief van start gegaan?**

- A. September 2017
- B. Oktober 2017
- C. November 2017
- D. December 2017



# Dutch nOcturnal and hoME dialysis Study To Improve Clinical Outcomes



Wanneer is DOMESTICO  
prospectief van start gegaan?

- A. September 2017
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- D. December 2017**





2012-2017

2018

2019

2020

2021



**DOMESTICO**  
PROMs

**DOMESTICO**  
Kosten

**DOMESTICO**  
Klinische  
uitkomsten

**DOMESTICO**  
Best Practices  
en SDM



2012-2017

2018

2019

2020

2021

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# DOMESTICO retrospectief

- Vraag:
    - *Oorzaken van techniekfalen bij thuisdialyse?*
    - *Modificeerbare factoren?*
    - *Klinische uitkomsten?*
  - Dossieronderzoek
  - 1200 thuisdialyse v.s. 600 CHD pt
  - Start dialyse tussen 1-1-2012 t/m 1-1-2017
- 41 deelnemende centra
- 3 publicaties



Original Article

PERITONEAL  
DIALYSIS  
INTERNATIONAL



## Technique failure in peritoneal dialysis: Modifiable causes and patient-specific risk factors

Peritoneal Dialysis International

1-11

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**Friedo W Dekker<sup>3</sup>**, **Dirk G Struijk<sup>4</sup>**, **Carola WH de Fijter<sup>5</sup>**,  
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**Marianne C Verhaar<sup>2</sup>**, **Brigit C van Jaarsveld<sup>1,7</sup>**,  
and **Alferso C Abrahams<sup>2</sup>** on behalf of the **DOMESTICO** study group.

Retrospectief

Prospectief

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# PD techniekfalen

- Primaire eindpunt 'PD techniekfalen'
  - transfer naar CHD voor  $\geq 30$  dgn, overlijden op PD of  $< 30$  dgn na transfer naar CHD
  - vroeg ( $< 6$  mnd na start PD) vs. laat ( $> 6$  mnd na start PD)
- Secundaire eindpunten
  - death-censored techniekfalen
  - overlijden
  - permanent techniekfalen (180 dgn)



# PD techniekfalen

695 patiënten, 33 centra

**Table 1.** Baseline characteristics of 695 patients treated with peritoneal dialysis.<sup>a</sup>

|  | All patients<br>n = 695 | Patients with<br>technique failure<br>n = 318 | Patients without<br>technique failure<br>n = 377 | p-Value |
|--|-------------------------|---|--|---------|
| Age (year), mean ± SD                                      | 62.9 ± 15.1             | 64.8 ± 14.8                                   | 61.4 ± 15.1                                      | 0.003   |
| Sex (male), n (%)  | 447 (64)                | 210 (66)                                      | 237 (63)   | NS      |
| Ethnic background, n (%)                                   |                         |   |  | NS      |
| Caucasian  | 422 (61)                | 191 (60)                                      | 231 (61)   |         |
| Moroccan/Turkish   | 22 (3)                  | 11 (4)  | 11 (3)   |         |
| Asian  | 39 (6)                  | 15 (5)  | 24 (6)   |         |
| Black  | 23 (3)                  | 9 (3)   | 14 (4)   |         |
| Other/unknown  | 189 (27)                | 92 (29)                                       | 97 (26)  |         |
| Primary kidney disease, n (%)                              |                         |   |  | NS      |
| Glomerulonephritis   | 81 (12)                 | 32 (10)                                       | 49 (13)  |         |
| Polycystic kidney disease                                  | 37 (5)                  | 11 (4)  | 26 (7)   |         |
| Renovascular kidney disease                                | 210 (30)                | 112 (35)                                      | 98 (26)  |         |
| Diabetes mellitus  | 123 (18)                | 58 (18)                                       | 65 (17)  |         |
| Other  | 183 (26)                | 84 (27)                                       | 99 (26)  |         |
| Unknown  | 61 (9)                  | 21 (7)  | 40 (11)  |         |
| Employment status, n (%)                                   | 167 (28)                | 61 (22)                                       | 106 (32)   | 0.006   |
| Current smoker, n (%)                                      | 111 (16)                | 52 (17)                                       | 59 (16)  | NS      |
| Charlson comorbidity index, n (%)                          | 168 (32)                | 58 (25)                                       | 110 (38)   | 0.001   |
| 2 (low) <sup>b</sup>                                       | 212 (41)                | 95 (41)                                       | 117 (40)   |         |
| 3–4 (intermediate)   | 139 (27)                | 77 (33)                                       | 62 (21)  |         |
| ≥5 (severe)  |                         |   |  |         |
| BMI (kg/m <sup>2</sup> ), mean ± SD                        | 26.4 ± 5.0              | 26.9 ± 5.1                                    | 26.1 ± 4.9                                       | 0.05    |
| BMI, n (%)   |                         |   |  | NS      |
| <25 kg/m <sup>2</sup>                                      | 239 (46)                | 98 (42)                                       | 141 (49)   |         |
| 25–30 kg/m <sup>2</sup>                                    | 177 (34)                | 85 (36)                                       | 92 (32)  |         |
| ≥30 kg/m <sup>2</sup>                                      | 107 (20)                | 51 (22)                                       | 56 (19)  |         |
| Diabetes mellitus, n (%)                                   | 164 (32)                | 81 (35)                                       | 83 (29)  | NS      |
| Ischemic heart disease, n (%)                              | 146 (28)                | 80 (35)                                       | 66 (23)  | 0.002   |
| Heart failure, n (%)                                       | 69 (13)                 | 38 (17)                                       | 31 (11)  | NS      |
| Vascular disease, n (%)                                    | 130 (23)                | 65 (26)                                       | 65 (21)  | NS      |
| History of dialysis at dialysis initiation, n (%)          | 103 (15)                | 39 (12)                                       | 64 (17)  | NS      |
| Dialysis vintage (months), median [IQR]                    | 12 [1–36]               | 12 [4–37]                                     | 11 [1–33]  | NS      |
| History of kidney transplant at dialysis initiation, n (%) | 73 (11)                 | 29 (9)  | 44 (12)  | NS      |
| Kidney transplant (months), median [IQR]                   | 120 [64–171]            | 99 [64–171]                                   | 135 [63–173]                                     | NS      |
| APD, n (%)   | 350 (50)                | 146 (46)                                      | 204 (54)   | 0.03    |

BMI: body mass index; APD: automated peritoneal dialysis; SD: standard deviation; IQR: interquartile range.

<sup>a</sup>Groups are defined according to the 30-day definition of technique failure.

<sup>b</sup>Kidney failure alone represents a Charlson Comorbidity Index of 2 points.

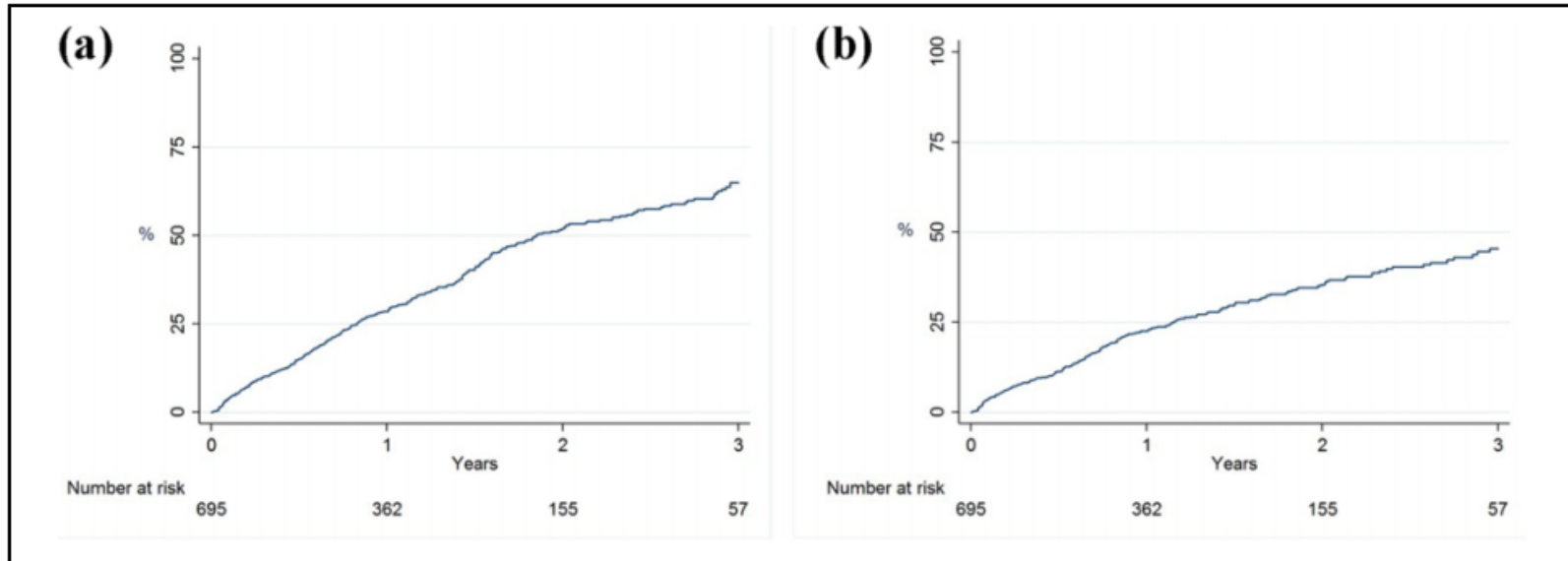
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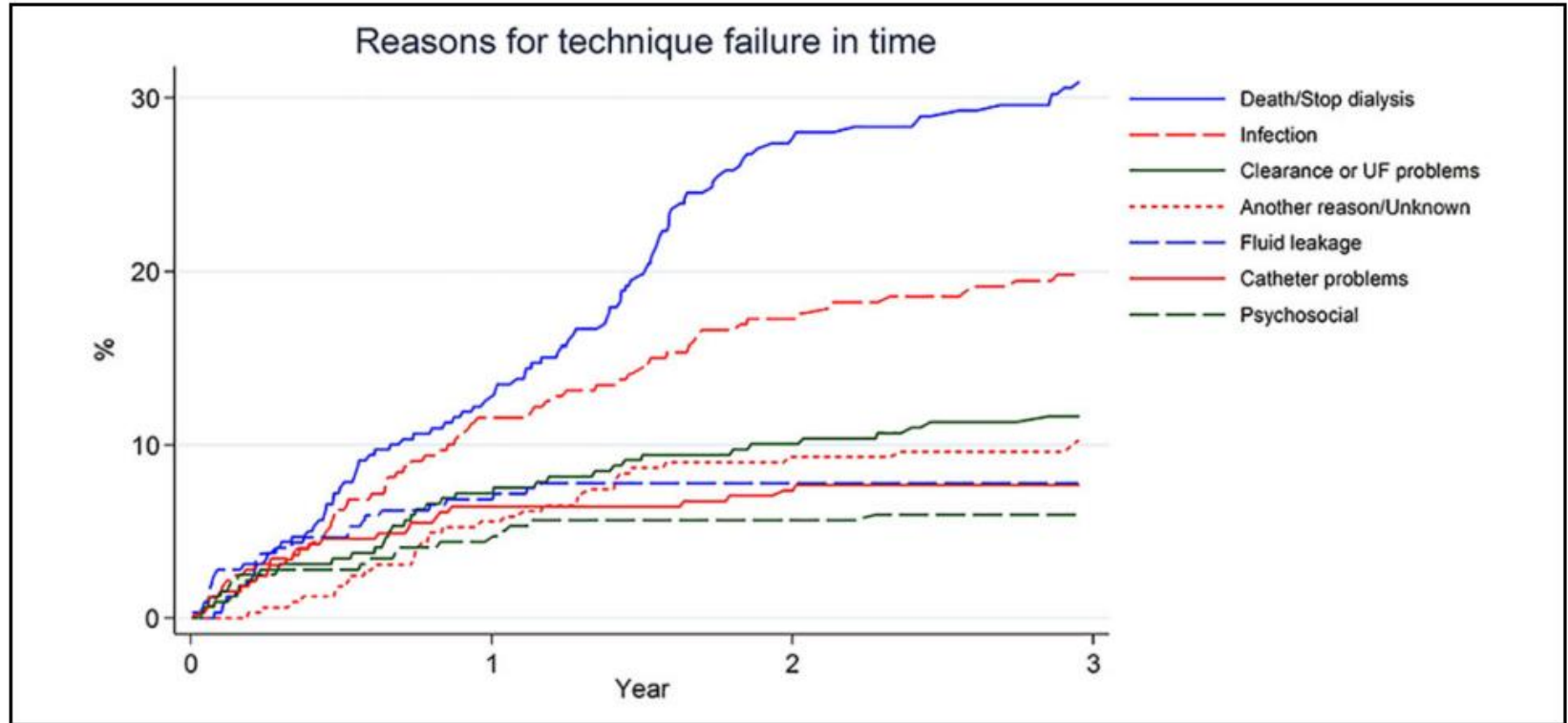
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# PD techniekfalen



**Figure 2.** Technique failure, as a composite outcome (with transfer to CHD or death) (a) and as death-censored technique failure (b). Technique failure was defined as a transfer to CHD for  $\geq 30$  days, death on PD or death within 30 days after transfer to CHD. First day of receiving CHD was the date assigned as technique failure. PD: peritoneal dialysis; CHD: in-centre haemodialysis.

# PD techniekfalen



**Figure 3.** Cumulative incidence of different causes for technique failure shows the occurrence of different causes for technique failure over time in a population of patients with technique failure ( $n = 318$ , 100%). UF: ultrafiltration.

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# PD technieken

**Table 2.** Risk factors associated with technique failure in a Cox regression model.<sup>a</sup>

| Risk factors            | Crude HR (95% CI)       | p-Value          | Adjusted model 1 HR (95% CI) | p-Value          | Adjusted model 2 HR (95% CI) | p-Value          |
|-------------------------|-------------------------|------------------|------------------------------|------------------|------------------------------|------------------|
| Male sex                | 1.15 (0.91–1.45)        | 0.24             |                              |                  |                              |                  |
| Age (10-year)           | 1.05 (0.97–1.13)        | 0.25             |                              |                  |                              |                  |
| Employed                | 0.80 (0.60–1.07)        | 0.13             |                              |                  |                              |                  |
| CCI                     |                         |                  |                              |                  |                              |                  |
| Low                     | Reference               |                  |                              |                  |                              |                  |
| Intermediate            | 1.41 (1.02–1.96)        | 0.04             |                              |                  |                              |                  |
| Severe                  | 1.81 (1.29–2.55)        | 0.001            |                              |                  |                              |                  |
| PD volume               |                         |                  |                              |                  |                              |                  |
| <15 patients            | Reference               |                  |                              |                  |                              |                  |
| 15–25 patients          | 1.05 (0.68–1.63)        | 0.83             |                              |                  |                              |                  |
| >25 patients            | 0.81 (0.53–1.24)        | 0.33             |                              |                  |                              |                  |
| BMI                     |                         |                  |                              |                  |                              |                  |
| <25 kg/m <sup>2</sup>   | Reference               |                  | Reference                    |                  |                              |                  |
| 25–30 kg/m <sup>2</sup> | 1.21 (0.91–1.62)        | 0.20             | 1.17 (0.87–1.58)             | 0.31             |                              |                  |
| ≥30 kg/m <sup>2</sup>   | 1.21 (0.86–1.69)        | 0.28             | 1.23 (0.88–1.71)             | 0.22             |                              |                  |
| <b>APD (vs CAPD)</b>    | <b>0.66 (0.53–0.83)</b> | <b>&lt;0.001</b> | <b>0.67 (0.54–0.84)</b>      | <b>&lt;0.001</b> | <b>0.66 (0.53–0.83)</b>      | <b>&lt;0.001</b> |

HR: hazard ratio; CI: confidence interval; BMI: body mass index; APD: automated peritoneal dialysis; CAPD: continuous ambulatory peritoneal dialysis; CCI: Charlson Comorbidity index.

<sup>a</sup>Model 1 is adjusted for age and sex. Model 2 is adjusted for age, sex, employment status, BMI, CCI and centre PD volume. In this cox regression model both preselected potentially modifiable risk factors, BMI and PD modality and all determinants used for adjustments are shown.


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# Differences in hospitalisation between peritoneal dialysis and haemodialysis patients

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Friedo W. Dekker<sup>4</sup> | Frans J. van Ittersum<sup>2</sup> | Marianne C. Verhaar<sup>1</sup> |  
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# Hospitalisatie

- Primaire eindpunt 'Hospitalisation rate'
  - aantal hospitalisaties per patient-jaar
- Secundaire eindpunten
  - risico voor 1<sup>e</sup> hospitalisatie
  - totale aantal hospitalisaties per patient
  - aantal hospitalisatie dagen per patient-jaar
  - oorzaken



# Hospitalisatie

695 patiënten, 31 centra

TABLE 1 Baseline characteristics according to dialysis modality at 3 months

| Variable   | Full sample<br>n = 695 | PD n = 252     | HD n = 443     |
|--|------------------------|----------------|----------------|
| Age (yr), mean ± SD                                  | 63.0 ± 15.3            | 63.1 ± 14.9    | 62.9 ± 15.6    |
| Sex (male), n (%)                                    | 418 (60)               | 160 (64)       | 258 (58)       |
| Ethnic background, n (%)                             |                        |                |                |
| Caucasian  | 395 (57)               | 149 (59)       | 246 (56)       |
| Other  | 123 (18)               | 30 (12)        | 93 (21)        |
| Unknown  | 177 (25)               | 73 (29)        | 104 (23)       |
| Primary kidney disease, n (%)                        |                        |                |                |
| Glomerulonephritis/pyelonephritis                    | 141 (20)               | 39 (16)        | 102 (23)       |
| Cystic kidney disease                                | 38 (6)                 | 19 (8)         | 19 (4)         |
| Renovascular kidney disease                          | 193 (28)               | 71 (28)        | 122 (28)       |
| Diabetes mellitus                                    | 119 (17)               | 49 (19)        | 70 (16)        |
| Other/unknown  | 204 (29)               | 74 (29)        | 130 (29)       |
| BMI (kg/m <sup>2</sup> ), mean ± SD                  | 26.8 ± 5.5             | 26.6 ± 4.7     | 26.9 ± 6.0     |
| Smoking, n (%)                                       |                        |                |                |
| Yes  | 117 (17)               | 42 (17)        | 75 (17)        |
| Quit   | 172 (25)               | 67 (27)        | 105 (24)       |
| Unknown  | 103 (15)               | 36 (14)        | 67 (15)        |
| CCI score, n (%) <sup>a</sup>                        |                        |                |                |
| 2  | 208 (30)               | 84 (33)        | 124 (28)       |
| 3–4  | 281 (41)               | 97 (39)        | 184 (42)       |
| ≥ 5  | 204 (29)               | 71 (28)        | 133 (30)       |
| Davies score, n (%)                                  |                        |                |                |
| 0  | 182 (26)               | 77 (31)        | 105 (24)       |
| 1–2  | 370 (53)               | 125 (50)       | 245 (56)       |
| ≥ 3  | 141 (20)               | 50 (20)        | 91 (21)        |
| KRT vintage (months), median [IQR] <sup>b</sup>      | 150 [64–212]           | 138 [44–181]   | 154 [69–230]   |
| Dialysis vintage (months), median [IQR] <sup>c</sup> | 35 [15–58]             | 16 [9–41]      | 39 [19–64]     |
| Previous transplant, n (%)                           | 138 (20)               | 26 (10)        | 112 (25)       |
| Residual GFR (ml/min), median [IQR]                  | 7.8 [4.6–11.6]         | 9.5 [6.7–12.9] | 6.6 [3.3–10.4] |
| Residual diuresis (ml/day), mean ± SD                | 1450 ± 843             | 1708 ± 742     | 1217 ± 862     |
| Acute start of dialysis, n (%)                       | 98 (14)                | 11 (4)         | 87 (20)        |

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# Hospitalisatie

TABLE 2 Comparison of hospitalisation rate (hospitalisations per patient-year) and risk for first hospitalisation.

| Dialysis modality   | Crude HR (95% CI) | Adjusted* HR (95% CI) | Adjusted** HR (95% CI) |
|---|-------------------|-----------------------|------------------------|
| <b>Hospitalisations per patient-year</b>  |                   |                       |                        |
| PD vs HD  | 1.1 (1.03–1.3)    | 1.1 (1.02–1.3)        | 1.1 (1.02–1.3)         |
| <b>Risk for first hospitalisation during first year after dialysis initiation</b> |                   |                       |                        |
| PD vs HD  | 1.3 (1.1–1.6)     | 1.3 (1.1–1.6)         | 1.3 (1.1–1.6)          |
| <b>Risk for first hospitalisation ≥1 year after dialysis initiation</b>           |                   |                       |                        |
| PD vs HD  | 1.8 (1.4–2.5)     | 1.8 (1.4–2.5)         | 1.9 (1.4–2.5)          |

Note: The hospitalisation rate was calculated with a multi-state model with recurrent events, which attributed every hospitalisation to the dialysis modality the patient performed at the time of admission.

The risk for first hospitalisation was analysed with a Cox regression model with dialysis modality as time-varying covariate.

TABLE 3 Comparison of number of hospitalisations and number of hospital days per patient-year.

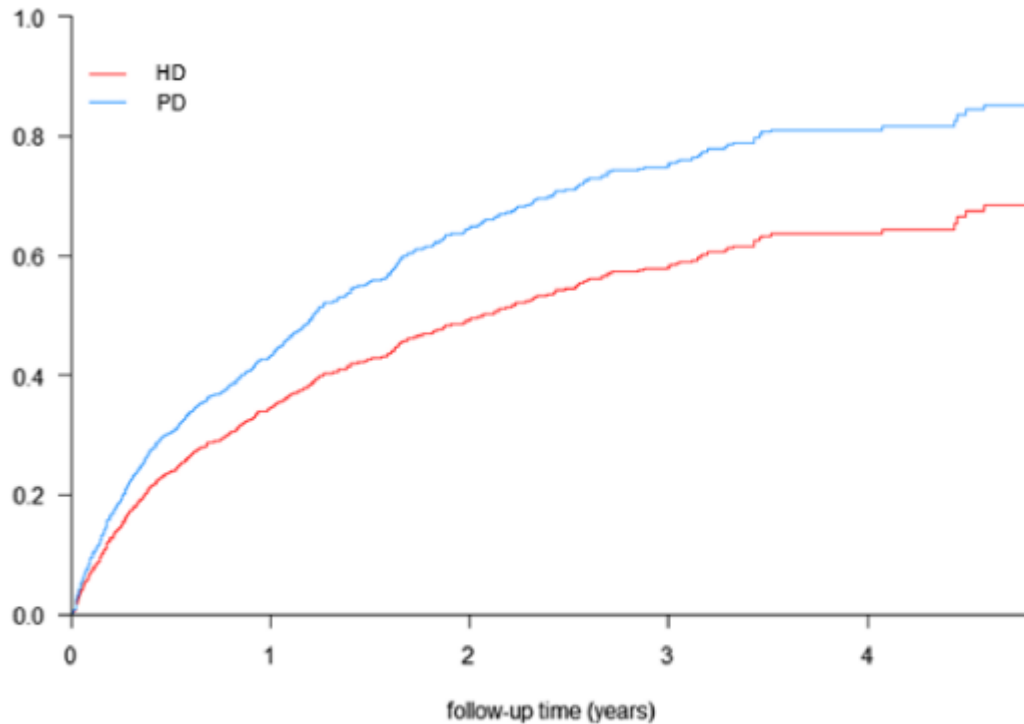
| Dialysis modality                               | Crude IRR (95% CI) | Adjusted* IRR (95% CI) | Adjusted** IRR (95% CI) |
|---|--------------------|------------------------|-------------------------|
| <b>Number of hospitalisations</b>               |                    |                        |                         |
| PD/HD   | 1.3 (1.1–1.6)      | 1.7 (1.3–2.3)          | 1.7 (1.2–2.3)           |
| <b>Number of hospital days per patient-year</b> |                    |                        |                         |
| PD/HD   | 1.6 (1.2–2.1)      | 1.6 (1.2–2.1)          | 1.5 (1.2–2.1)           |

Abbreviations: HD, Haemodialysis; IRR, Incidence rate ratio of PD relative to HD; PD, Peritoneal dialysis.

\*Adjusted for age and sex

\*\*Adjusted for age, sex, Charlson Comorbidity Index, dialysis vintage and acute start of dialysis





PD= peritoneal dialysis; HD= haemodialysis.

Estimated cumulative incidence curves for first hospitalisation for PD and HD patients derived from a multi-state Cox regression model. Model is adjusted for age, sex, Charlson Comorbidity Index, dialysis vintage, and acute start of dialysis.

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# Hospitalisatie

TABLE 4 Causes of hospitalisations.

| Causes                        | PD <i>n</i> = 521 | HD<br><i>n</i> = 959 |
|-------------------------------|-------------------|----------------------|
| Access-related <sup>a</sup>   | 69 (13)           | 317 (33)             |
| Peritonitis                   | 117 (23)          | N/A                  |
| Fluid overload                | 14 (3)            | 22 (2)               |
| Cardiac disease <sup>b</sup>  | 57 (11)           | 87 (9)               |
| Vascular disease <sup>c</sup> | 28 (5)            | 50 (5)               |
| Infection <sup>d</sup>        | 79 (15)           | 170 (18)             |
| Gastrointestinal disease      | 46 (9)            | 94 (10)              |
| Malignancy                    | 9 (2)             | 25 (3)               |
| Transplantation               | 13 (2)            | 25 (2)               |
| Other/unknown                 | 89 (17)           | 169 (18)             |

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# Comorbidity is not associated with dialysis modality choice in patients with end-stage kidney disease

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# Comorbiditeit

- Primaire doel:
  - associatie tussen comorbiditeit en dialyse modaliteit onderzoeken
- Secundaire doelen:
  - associatie tussen dialyse modaliteit en
    - Diabetes mellitus
    - Ischemische hartziekte
    - Hartfalen
    - Cerebrovasculaire ziekte
    - Maligniteit
    - Chronische longziekte

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# Comorbiditeit

1358 patiënten, 35 centra

Retrospectief

TABLE 1 Characteristics of the 1358 included dialysis patients, divided by dialysis modality

|  | All patients (n = 1358) | Home dialysis (n = 628) | In-centre haemodialysis (n = 730) | p-value |
|--|-------------------------|-------------------------|-----------------------------------|---------|
| Male sex, n (%)                                  | 832 (61)                | 390 (62)                | 442 (61)                          | .58     |
| Age (year), mean ± SD                            | 62.4 ± 15.7             | 61.6 ± 15.6             | 63.1 ± 15.8                       | .08     |
| Body mass index (kg/m <sup>2</sup> ), mean ± SD  | 26.8 ± 5.6              | 26.4 ± 5.1              | 27.2 ± 6.0                        | .01     |
| Ethnic background, n (%)                         |                         |                         |                                   | <.001   |
| Caucasian  | 805 (59)                | 403 (64)                | 402 (55)                          |         |
| Moroccan/Turkish                                 | 73 (5)                  | 13 (2)                  | 60 (8)                            |         |
| Asian  | 71 (5)                  | 35 (6)                  | 36 (5)                            |         |
| Afro-American                                    | 60 (4)                  | 21 (3)                  | 39 (5)                            |         |
| Unknown  | 330 (24)                | 146 (23)                | 184 (25)                          |         |
| ERA-EDTA code, n (%)                             |                         |                         |                                   | .62     |
| Glomerulonephritis/pyelonephritis                | 261 (19)                | 125 (20)                | 136 (19)                          |         |
| Cystic kidney disease                            | 78 (6)                  | 39 (6)                  | 39 (5)                            |         |
| Renovascular kidney disease                      | 355 (26)                | 164 (26)                | 191 (26)                          |         |
| Diabetes mellitus                                | 243 (18)                | 102 (16)                | 141 (19)                          |         |
| Other/unknown                                    | 421 (31)                | 198 (32)                | 223 (31)                          |         |
| Previous dialysis, n (%)                         | 276 (20)                | 121 (19)                | 155 (21)                          | .38     |
| Dialysis vintage (mo), median (IQR) <sup>a</sup> | 29.4 [11.0–57.7]        | 17.7 [2.2–45.4]         | 38.4 [15.4–62.8]                  | <.001   |
| Previous renal transplant, n (%)                 | 241 (18)                | 92 (15)                 | 149 (20)                          | .007    |
| Charlson comorbidity index, n (%)                |                         |                         |                                   | .16     |
| 2 (no comorbidity)                               | 409 (30)                | 202 (32)                | 207 (28)                          |         |
| 3–4 (intermediate comorbidity score)             | 553 (41)                | 257 (41)                | 296 (41)                          |         |
| ≥5 (high comorbidity score)                      | 396 (29)                | 169 (27)                | 227 (31)                          |         |
| Davies comorbidity score, n (%)                  |                         |                         |                                   | .43     |
| 0 (no comorbidity)                               | 398 (29)                | 194 (31)                | 204 (28)                          |         |
| 1–2 (intermediate risk)                          | 722 (53)                | 330 (53)                | 392 (54)                          |         |
| ≥3 (high comorbidity score)                      | 238 (18)                | 104 (17)                | 134 (18)                          |         |
| Diabetes mellitus, n (%)                         | 465 (34)                | 193 (31)                | 272 (37)                          | .012    |
| Ischaemic heart disease, n (%)                   | 378 (28)                | 182 (29)                | 196 (27)                          | .40     |
| Heart failure, n (%)                             | 149 (11)                | 83 (13)                 | 66 (9)                            | .018    |
| Cerebrovascular disease, n (%)                   | 187 (14)                | 84 (13)                 | 103 (14)                          | .75     |
| Any malignancy, n (%)                            | 192 (14)                | 81 (13)                 | 111 (15)                          | .24     |
| Chronic lung disease, n (%)                      | 159 (12)                | 67 (11)                 | 92 (13)                           | .27     |

<sup>a</sup>Dialysis vintage presented for patients with previous dialysis only.

# Comorbiditeit

**TABLE 3** Association of comorbidity and treatment with home dialysis, compared with in-centre haemodialysis

|                                | Logistic mixed model regression analysis <sup>a</sup> |                 |  |                 |  |                 |
|--------------------------------|---|-----------------|--|-----------------|--|-----------------|
|                                | Odds ratio [95% CI]<br>crude                          | <i>p</i> -value | Odds ratio [95% CI]<br>adjusted <sup>b</sup> | <i>p</i> -value | Odds ratio [95% CI]<br>adjusted <sup>c</sup> | <i>p</i> -value |
| Charlson comorbidity index     |   |                 |  |                 |  |                 |
| CCI 2                          | REF   |                 | REF  |                 | REF  |                 |
| CCI 3–4                        | 0.97 [0.73–1.28]                                      | .82             | 1.05 [0.78–1.41]                             | .73             | 1.10 [0.82–1.49]                             | .53             |
| CCI ≥5                         | 0.74 [0.54–1.00]                                      | .05             | 0.84 [0.61–1.17]                             | .30             | 0.88 [0.63–1.23]                             | .44             |
| At least 1 comorbidity         | 0.86 [0.67–1.12]                                      | .26             | 0.97 [0.74–1.27]                             | .81             | 1.01 [0.77–1.33]                             | .93             |
| Diabetes mellitus <sup>d</sup> | 0.75 [0.59–0.97]                                      | .03             | 0.78 [0.61–1.01]                             | .06             | 0.83 [0.64–1.08]                             | .17             |
| Ischaemic heart disease        | 1.08 [0.83–1.40]                                      | .57             | 1.17 [0.89–1.55]                             | .26             | 1.23 [0.93–1.63]                             | .15             |
| Heart failure                  | 1.47 [1.01–2.14]                                      | .05             | 1.54 [1.05–2.25]                             | .03             | 1.60 [1.09–2.37]                             | .02             |
| Cerebrovascular disease        | 0.79 [0.57–1.11]                                      | .18             | 0.83 [0.59–1.17]                             | .28             | 0.81 [0.57–1.15]                             | .24             |
| Any malignancy                 | 0.91 [0.65–1.28]                                      | .58             | 0.92 [0.65–1.30]                             | .65             | 0.89 [0.63–1.26]                             | .50             |
| Chronic lung disease           | 0.83 [0.58–1.21]                                      | .34             | 0.88 [0.61–1.29]                             | .52             | 0.88 [0.60–1.29]                             | .50             |

Abbreviations: BMI, body mass index; CCI, Charlson comorbidity index.

<sup>a</sup>Logistic mixed model regression analysis with dialysis centre as random intercept, with individual patients as first level.

<sup>b</sup>Adjusted for age, sex, and BMI.

<sup>c</sup>Adjusted for age, sex, BMI, ethnic background, and dialysis vintage.

<sup>d</sup>Adjusted for age, sex, ethnic background, and dialysis vintage.

Retrospectief

Prospectief

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# Comorbidity

**TABLE 4** Interaction of BMI in the association between CCI and treatment with home dialysis, compared with in-centre haemodialysis

| Logistic mixed model regression analysis <sup>a</sup>                         |     |                           |         |   |         |
|---|-----|---------------------------|---------|---|---------|
|   |     | Odds ratio [95% CI] crude | p-value | Odds ratio [95% CI] adjusted <sup>b</sup> | p-value |
| <b>Patients with BMI &lt;25 kg/m<sup>2</sup> (N = 493)<sup>c</sup></b>        |     |                           |         |   |         |
| Charlson comorbidity index  |     |                           |         |   |         |
| CCI 2   | REF |                           |         | REF                                       |         |
| CCI 3-4   |     | 1.37 [0.89-2.11]          | 0.15    | 1.59 [1.01-2.49]                          | .04     |
| CCI ≥ 5   |     | 1.03 [0.62-1.69]          | 0.92    | 1.22 [0.72-2.07]                          | .46     |
| <b>Overweight patients (BMI 25-30 kg/m<sup>2</sup>) (N = 379)<sup>c</sup></b> |     |                           |         |   |         |
| Charlson comorbidity index  |     |                           |         |   |         |
| CCI 2   | REF |                           |         | REF                                       |         |
| CCI 3-4   |     | 1.00 [0.61-1.64]          | 0.99    | 1.10 [0.66-1.83]                          | .72     |
| CCI ≥ 5   |     | 0.71 [0.41-1.24]          | 0.22    | 0.76 [0.43-1.35]                          | .36     |
| <b>Obese patients (BMI ≥30 kg/m<sup>2</sup>) (N = 257)<sup>c</sup></b>        |     |                           |         |   |         |
| Charlson comorbidity index  |     |                           |         |   |         |
| CCI 2   | REF |                           |         | REF                                       |         |
| CCI 3-4   |     | 0.40 [0.19-0.86]          | 0.02    | 0.40 [0.18-0.86]                          | .02     |
| CCI ≥ 5   |     | 0.42 [0.20-0.88]          | 0.02    | 0.43 [0.20-0.93]                          | .03     |

Note: BMI was divided according to the WHO classification: BMI <25 kg/m<sup>2</sup>, BMI 25-30 kg/m<sup>2</sup> (overweight), and BMI ≥30 kg/m<sup>2</sup> (obese).

Abbreviations: BMI, body mass index; CCI, Charlson comorbidity index.

<sup>a</sup>Logistic mixed model analysis with dialysis centre as random intercept, with individual patients as first level.

<sup>b</sup>Adjusted for age, sex, ethnic background, and dialysis vintage.

<sup>c</sup>A total of 1358 patients were analysed: for 229 patients imputed data for BMI were used.







2012-2017

2018

2019

2020

2021

# DOMESTICO prospectief

- Vraag:

*Leidt behandeling met thuisdialyse tot een betere kwaliteit van leven, gelijke klinische uitkomsten en lagere kosten in vergelijking tot CHD?*

- Multicenter cohort
- 800 thuisdialyse pt (600 PD, 200 THD) en 800 CHD pt
- 12-48 mnd follow-up
- Verwachte einddatum 1-6-2022

→ 58 deelnemende centra (NL & België)

→ 4 publicaties



# Dutch nocturnal and home dialysis Study To Improve Clinical Outcomes



Hoeveel inclusies zijn er op dit moment in DOMESTICO prospectief?

- A. ~1000
- B. ~1500
- C. ~2000
- D. ~2500



# Dutch nocturnal and home dialysis Study To Improve Clinical Outcomes



Hoeveel inclusies zijn er op dit moment in DOMESTICO prospectief?

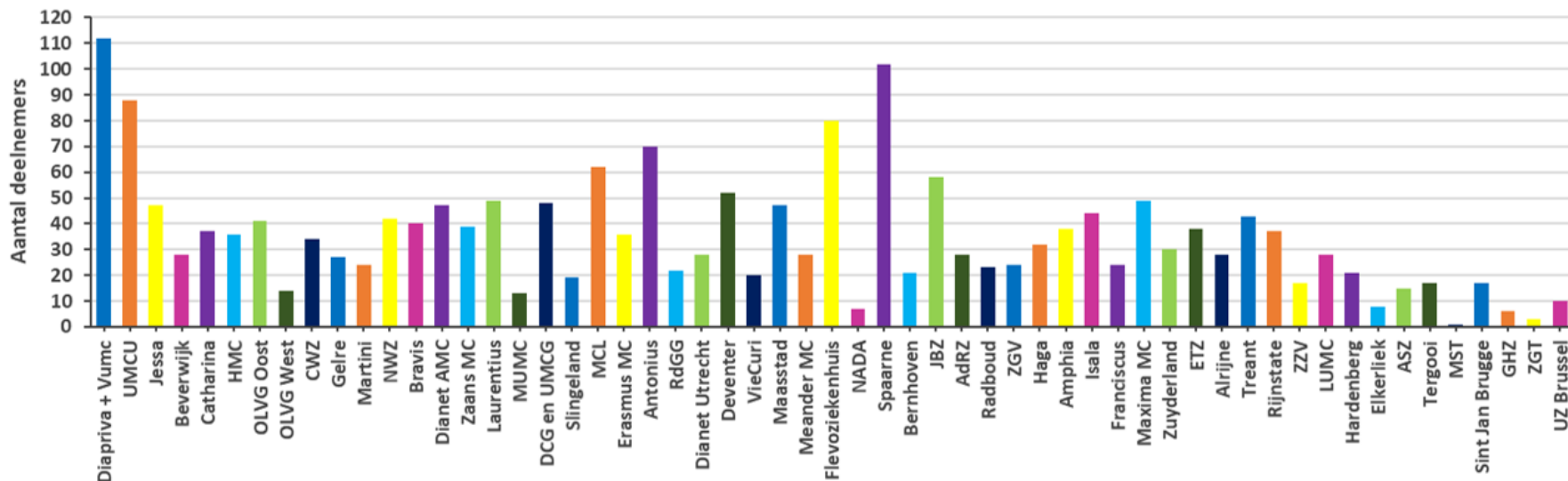
- A. ~1000
- B. ~1500
- C. ~2000**
- D. ~2500



# DOMESTICO prospectief

## Huidige status: > 2000 inclusies

55 Nederlandse centra  
3 Belgische centra



Retrospectief

Prospectief

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Eck van der Sluijs *et al.* *BMC Nephrology* (2019) 20:361  
<https://doi.org/10.1186/s12882-019-1526-4>

BMC Nephrology

STUDY PROTOCOL

Open Access

# Dutch nOcturnal and hoME dialysis Study To Improve Clinical Outcomes (DOMESTICO): rationale and design



A. van Eck van der Sluijs<sup>1†</sup>, A. A. Bonenkamp<sup>2†</sup>, F. W. Dekker<sup>3</sup>, A. C. Abrahams<sup>1</sup>, B. C. van Jaarsveld<sup>2,4\*</sup> and on behalf of the DOMESTICO study group

Retrospectief

Prospectief

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## Health-Related Quality of Life in Home Dialysis Patients Compared to In-Center Hemodialysis Patients: A Systematic Review and Meta-analysis



*Anna A. Bonenkamp,\* Anita van Eck van der Sluijs,\* Tiny Hoekstra, Marianne C. Verhaar, Frans J. van Ittersum, Alferso C. Abrahams, and Brigit C. van Jaarsveld*

*Kidney Med Vol 2 | Iss 2 | March/April 2020*

Retrospectief

Prospectief

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# How does health-related quality of life in home dialysis patients compare to in-center hemodialysis patients?

### Systematic review & meta-analysis



Home dialysis vs In-center dialysis



Health-related quality of life (HRQoL)



**46** articles  
42 Cross-sectional  
4 Cohort



**41** study populations

38 Peritoneal dialysis  
2 Home hemodialysis  
1 Both

Meta-analysis



N=4158



N=7854

### Pooled Analysis



Better physical HRQoL in home dialysis patients

### Subgroup Analysis

Latin America



Better physical HRQoL with in-center dialysis

Western Europe



Better physical HRQoL with home dialysis

**Conclusions:** Although pooled data showed a marginally better physical HRQoL for home dialysis patients, the quality of design of the included studies was poor. Large prospective studies with adequate adjustments for confounders are necessary to establish whether home dialysis results in better HRQoL.

**Reference:** Bonenkamp AA, van Eck van der Sluijs A, Hoekstra T, Verhaar MC, van Ittersum FJ, Abrahams AC, van Jaarsveld BC. Health-Related Quality of Life in Home Dialysis Patients Compared to In-Center Hemodialysis Patients: A Systematic Review and Meta-analysis. *Kidney Medicine*, 2020.  
Visual abstract by Pablo Galindo, MD






Journal of Nephrology

<https://doi.org/10.1007/s40620-021-01005-1>

ORIGINAL ARTICLE



# The Impact of COVID-19 on the mental health of dialysis patients

Anna A. Bonenkamp<sup>1</sup>  · Theresia A. Druiventak<sup>2</sup> · Anita van Eck van der Sluijs<sup>2</sup> · Frans J. van Ittersum<sup>1</sup> · Brigit C. van Jaarsveld<sup>1,3</sup> · Alferso C. Abrahams<sup>2</sup> on behalf of the DOMESTICO study group

Received: 18 December 2020 / Accepted: 17 February 2021

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Retrospectief

Prospectief

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# COVID-19

## Methods



Data from nationwide cohort study



Quality of life questionnaires during pandemic and 3-6 months prior



February 27th and July 1st 2020

## Cohort



n = 177

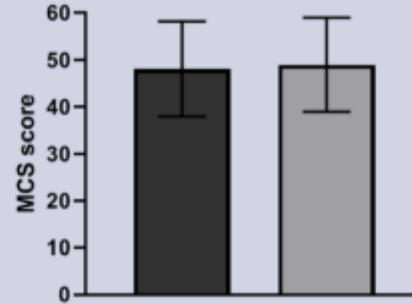


Age  
 $64.9 \pm 11.5$



75%  
in-center  
haemodialysis

## Results



Adjusted mean MCS score 0.93 point (95% CI -0.57 – 2.42) higher during the COVID-19 pandemic

No difference in the presence of mental-health related symptoms during the COVID-19 pandemic

Retrospectief

Prospectief

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# Impact of Polypharmacy on Health-Related Quality of Life in Dialysis Patients

Julia M.T. Colombijn<sup>a</sup> Anna A. Bonenkamp<sup>a</sup> Anita van Eck van der Sluijs<sup>b</sup>  
Joost A. Bijlsma<sup>a,c</sup> Arnold H. Boonstra<sup>d</sup> Akin Özyilmaz<sup>e,f</sup> Alferso C. Abrahams<sup>b</sup>  
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Prospectief

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# Polyfarmacie

- Doel:
  - associatie tussen soorten medicatie en kwaliteit van leven
- 3 mnd na start dialyse:
  - medicatie: aantal gelijktijdig voorgeschreven soorten medicatie
  - kwaliteit van leven
- Polyfarmacie: gelijktijdig voorschrijven van  $\geq 5$  soorten medicatie



# Polyfarmacie

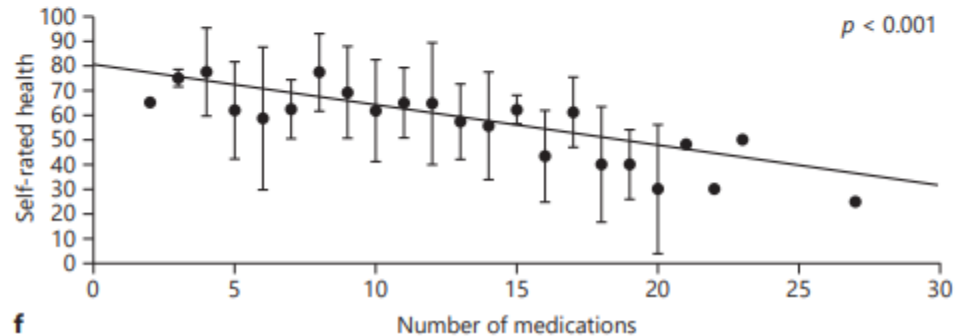
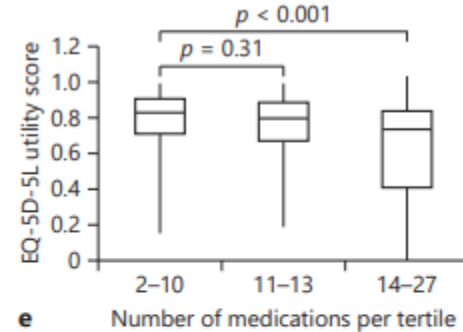
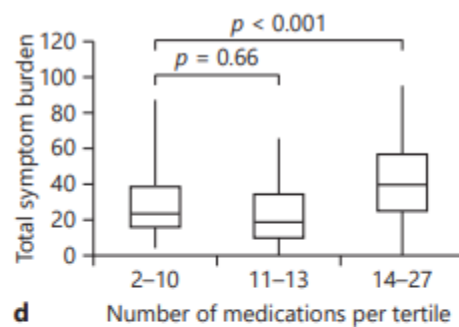
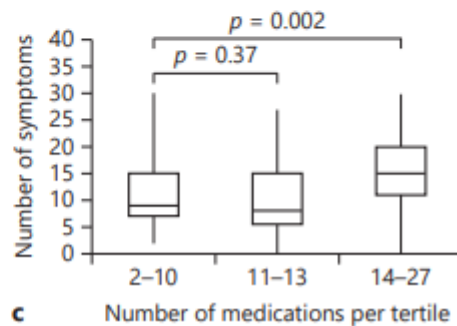
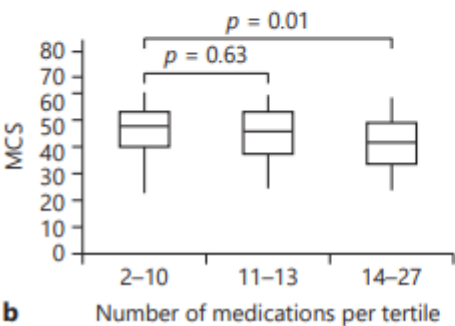
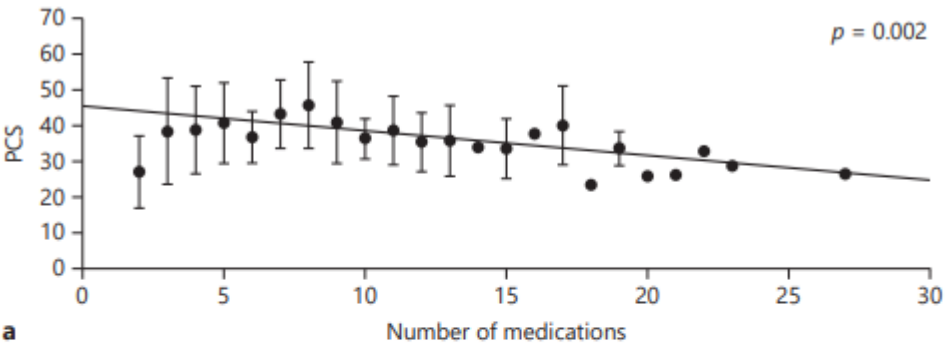
162 patiënten, 7 centra

Retrospectief

**Table 1.** Patient characteristics for all patients and per medication tertile

|  | All patients<br>( <i>n</i> = 162) | 2–10 medications<br>( <i>n</i> = 59) | 11–13 medications<br>( <i>n</i> = 42) | 14–27 medications<br>( <i>n</i> = 61) |
|--|-----------------------------------|--------------------------------------|---------------------------------------|---------------------------------------|
| <b>Demographic data</b>                |                                   |                                      |                                       |                                       |
| Age, years                             | 58±17                             | 55±19                                | 62±15                                 | 59±14                                 |
| Sex (female)                           | 56 (35)                           | 22 (37)                              | 12 (29)                               | 22 (36)                               |
| <b>Medical history</b>                 |                                   |                                      |                                       |                                       |
| Cause of kidney failure <sup>a</sup>   |                                   |                                      |                                       |                                       |
| Glomerular/tubular nephropathy         | 38 (24)                           | 12 (20)                              | 10 (24)                               | 16 (26)                               |
| Cystic kidney disease                  | 15 (9)                            | 10 (17)                              | 2 (5)                                 | 3 (5)                                 |
| Renovascular nephropathy               | 44 (27)                           | 15 (25)                              | 15 (36)                               | 14 (23)                               |
| Diabetic nephropathy                   | 26 (16)                           | 3 (5)                                | 8 (19)                                | 15 (25)                               |
| Other/unknown                          | 39 (24)                           | 19 (32)                              | 7 (17)                                | 13 (21)                               |
| Previous dialysis                      | 20 (12)                           | 4 (7)                                | 7 (17)                                | 9 (15)                                |
| Dialysis vintage <sup>b</sup> (months) | 32.5 (11.8–64.3)                  | 32.0 (8.3–64.0)                      | 21.0 (7.0–67.0)                       | 51.0 (18.0–77.5)                      |
| Previous kidney transplant             | 37 (23)                           | 18 (17)                              | 11 (26)                               | 16 (26)                               |
| Charlson comorbidity index             | 3.0 (2.0–5.0)                     | 2.0 (2.0–3.0)                        | 4.0 (2.0–5.0)                         | 4.0 (2.0–5.5)                         |
| Hospitalization in the past 3 months   | 60 (39)                           | 15 (27)                              | 19 (46)                               | 26 (46)                               |
| <b>Current dialysis</b>                |                                   |                                      |                                       |                                       |
| Dialysis modality                      |                                   |                                      |                                       |                                       |
| Haemodialysis                          | 130 (80)                          | 49 (83)                              | 34 (81)                               | 47 (77)                               |
| Peritoneal dialysis                    | 32 (20)                           | 10 (17)                              | 8 (19)                                | 14 (23)                               |
| Acute start of dialysis                | 23 (14)                           | 14 (24)                              | 4 (10)                                | 5 (8)                                 |
| <b>Clinical parameters</b>             |                                   |                                      |                                       |                                       |
| BMI, kg/m <sup>2</sup>                 | 26.6±6.4                          | 26.5±6.6                             | 26.2±5.5                              | 26.8±6.9                              |
| Residual diuresis <sup>c</sup>         | 141 (97)                          | 51 (100)                             | 38 (100)                              | 52 (93)                               |
| Haemoglobin, mmol/L                    | 6.8±1.0                           | 6.9±1.2                              | 6.9±1.0                               | 6.8±0.9                               |
| Phosphate, mmol/L                      | 1.73±0.53                         | 1.79±0.55                            | 1.68±0.50                             | 1.72±0.54                             |
| Calcium, mmol/L                        | 2.26±0.21                         | 2.27±0.18                            | 2.31±0.15                             | 2.22±0.25                             |
| Albumin, g/L                           | 37.5±6.4                          | 38.5±5.0                             | 37.2±5.5                              | 36.8±8.0                              |
| <b>Medication use</b>                  |                                   |                                      |                                       |                                       |
| Medications (mean), <i>n</i>           | 12.2±4.5                          | 7.6±2.0                              | 12.0±0.9                              | 16.7±2.9                              |
| Medications (median), <i>n</i>         | 12 [9–15]                         | 8 [6–9]                              | 12 [11–13]                            | 16 [14–19]                            |
| Polypharmacy <sup>d</sup>              | 158 (98)                          | 55 (93)                              | 42 (100)                              | 61 (100)                              |
| <b>Health-related quality of life</b>  |                                   |                                      |                                       |                                       |
| SF-12 PCS                              | 36.6±10.2                         | 40.2±10.9                            | 36.8±9.8                              | 33.2±8.9                              |
| SF-12 MCS                              | 46.8±10.0                         | 49.1±9.1                             | 47.8±10.2                             | 44.1±10.3                             |
| Symptoms, <i>n</i>                     | 12.3±6.9                          | 11.0±6.3                             | 9.7±6.6                               | 15.5±6.7                              |
| Symptom burden                         | 33.2±21.9                         | 29.7±19.4                            | 23.8±19.0                             | 43.2±22.9                             |
| EQ-5D-5L utility score                 | 0.71±0.24                         | 0.80±0.18                            | 0.75±0.23                             | 0.61±0.27                             |
| Self-rated health                      | 60.1±20.6                         | 66.7±18.4                            | 62.2±20.5                             | 52.1±20.2                             |

# Polyfarmacie



Retrospectief

Prospectief

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2012-2017

2018

2019


2020

2021

# DOMESTICO BP&SDM

RESEARCH ARTICLE

## Good practices for dialysis education, treatment, and eHealth: A scoping review

**Anita van Eck van der Sluijs**<sup>1</sup> <sup>1</sup>, **Sanne Vonk**<sup>1</sup>, **Brigit C. van Jaarsveld**<sup>2,3</sup>, **Anna A. Bonenkamp**<sup>2</sup>, **Alferso C. Abrahams**<sup>1\*</sup>

**1** Department of Nephrology and Hypertension, University Medical Center Utrecht, Utrecht, The Netherlands,

**2** Department of Nephrology, Amsterdam University Medical Centers, Location AMC, Amsterdam, The

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PLOS ONE | <https://doi.org/10.1371/journal.pone.0255734> August 11, 2021

Retrospectief

Prospectief

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# DOMESTICO BP&SDM

## Nierfalen traject

### Alle 'Good Practices'

1. Patiënt eigen baas over informatietraject
2. Gespecialiseerd verpleegkundige
3. Huisbezoek
4. Dialyse thuis of CHD
5. Multidisciplinair overleg
6. Wegnemen barrières
7. Voorlichting aan huis
8. Voorlichtingsfilms
9. Ervaringsdeskundigen

### Inleiding

Dit document geeft een overzicht van Good Practices (met voor-en nadelen) op het gebied van de besluitvorming ten aanzien van de vervolgbehandeling bij nierfalen (aangeduid met nierfalentraject). De Good Practices zijn niet op wetenschappelijk bewijs gebaseerd en er is discrepantie tussen bepaalde Good Practices. Het is aan een ieder om zijn eigen weging toe te passen ten aanzien van de voor-en nadelen van de benoemde Good Practices.

### Doelgroep

Artsen, verpleegkundig specialisten, nierfalenverpleegkundigen, dialyse verpleegkundigen en maatschappelijk werkers verbonden aan de afdeling Nefrologie.

### Navigatie

Links in het menu vindt u onze Good Practices. Wanneer u deze aanklikt vindt u de voor-, en nadelen, een accordeon met inhoud en een afdrukbare PDF van het praktijkvoorbeeld.

### Versie

17 april 2019



# DOMESTICO BP&SDM



Workshop 'Van voorlichting naar dialoog'



DECEMBER 2018

BP&SDM

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# DOMESTICO Mantelzorgproject

- Doel: onderzoeken van het effect van starten met (thuis)dialyse op mantelzorgers van dialysepatiënten
  - positieve en negatieve ervaringen
  - verschillen tussen mantelzorgers van thuisdialysepatiënten en centrumdialysepatiënten.
- Mantelzorgers beter ondersteunen

Retrospectief

Prospectief

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# De lessen uit DOMESTICO

- Samenwerking is de belangrijkste succesfactor
- Kwaliteit van leven is een belangrijke uitkomstparameter bij dialysepatiënten
- Samen beslissen is belangrijk





# Dutch nOcturnal and hoME dialysis Study To Improve Clinical Outcomes



[www.domesticostudy.nl](http://www.domesticostudy.nl)  
[info@domesticostudy.nl](mailto:info@domesticostudy.nl)