27° Πανελλήνιο Συνέδριο Νεφρολογίας

Astir-Egnatia Palace

20–23 Μαΐου 2026

Αλεξανδρούπολη

# Η συμβολή της Υποβοηθούμενης Περιτοναϊκής Κάθαρσης στην ανάπτυξη της Περιτοναϊκής Κάθαρσης

Αθανασία Καποτά

Επιμελήτρια Β’ Νεφρολόγος

# Assisted PD - asPD

asPD : funded by the healthcare system including governments, health insurance or other organizations.

Family or Care Partner


Nurse

- Non-nurse healthcare professional
- Or trained individual
- Domestic House Worker

# asPD can overcome many barriers of the performance of PD

Physical barriers to self-care

- Decreased strength
- Decreased manual dexterity
- Decreased vision
- Decreased hearing
- Immobility
- Poor health/frailty
- Poor hygiene

Cognitive barriers to self care

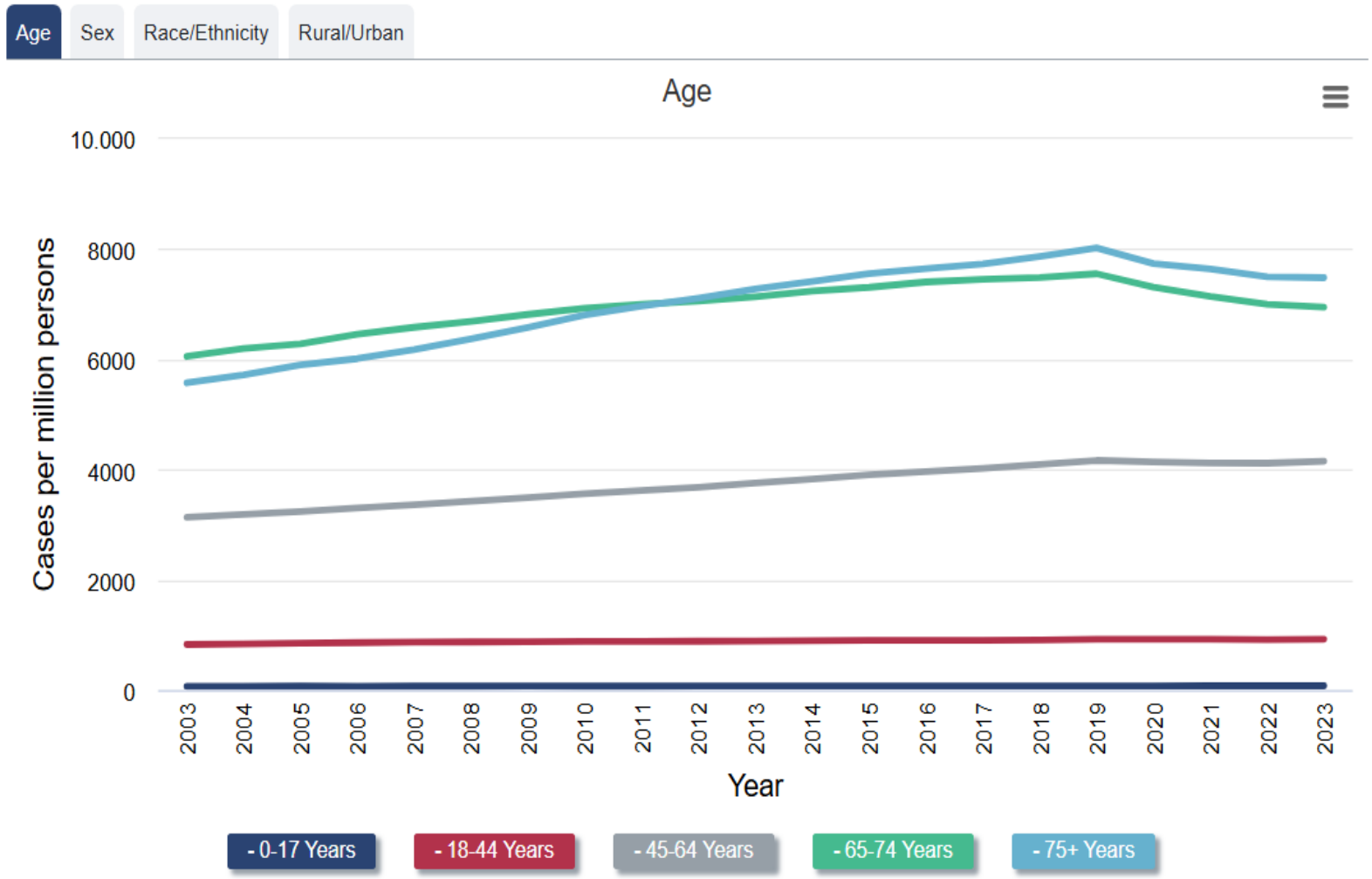
- Dementia/poor memory
- Anxiety /Depression
- Psychiatric condition

- History of non-compliance

# Social context

- Changing family structure
- Migration - Language barrier

**Figure 1.11** Adjusted rate of established ESKD by patient characteristics, 2003-2023



Nephrology Dialysis Transplantation (2023) 38: 1027–1040
https://doi.org/10.1093/ndt/gfac165
Advance Access publication date 17 August 2022

# Increasing numbers and improved overall survival of patients on kidney replacement therapy over the last decade in Europe: an ERA Registry study

Jilske A. Huijben[1], Anneke Kramer[1], Julia Kerschbaum[2], Johan de Meester[3], Frederic Collart[4], Olga Lucía Rodríguez Arévalo[5,6], Jaakko Helve[7,8], Mathilde Lassalle[9], Runolfur Palsson[10,11], Marc ten Dam[12], Anna Casula[13], Shona Methven[14], Alberto Ortiz[15], Pietro Manuel Ferraro[16,17], Mårten Segelmark[18,19], Pablo Ucio Mingo[20], Mustafa Arici[21], Anna Varberg Reisæter[22], Maria Stendahl[19], Vianda S. Stel[1] and Kitty J. Jager[1]

# The end of the ESRD epidemic?

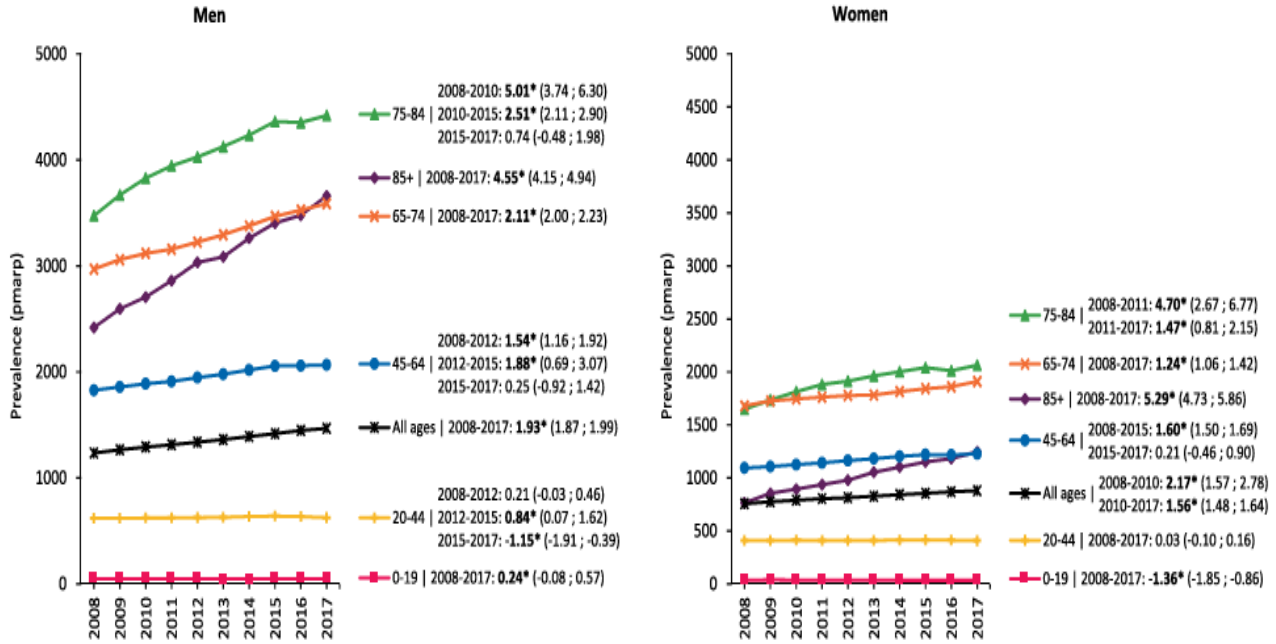



FIGURE 4: Standardized prevalence of KRT pmarp (per million age-related population) in men and women, stratified by age group. For standardization the age and sex distribution of the EU28 population in 2015 was used. Trends are indicated by the APC with corresponding 95% confidence interval. Bold numbers and an asterisk (*) indicate whether the APC was statistically significant ($P < .05$).

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OXFORD
Leading European Nephrology

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Editorial Comment

EDITORIAL COMMENT

# Current trends in European renal epidemiology

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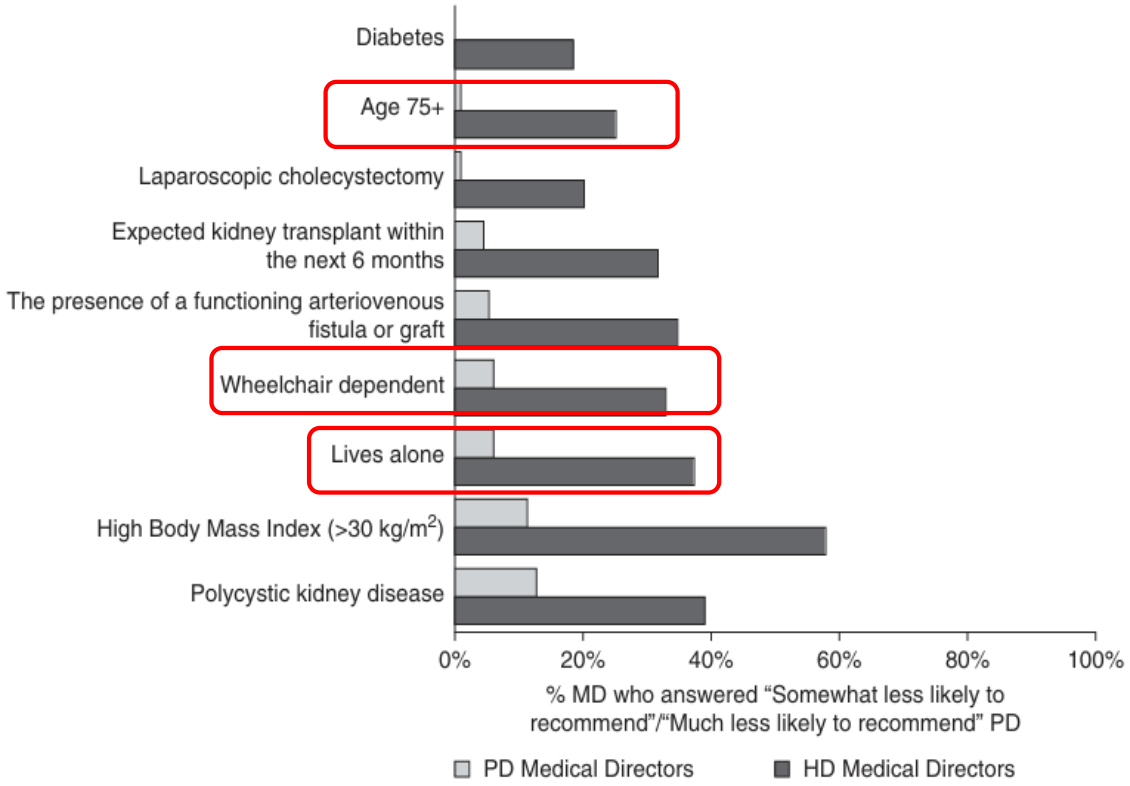
- Initial PD treatment has fallen from 15 to 13%, probably because many elderly patients are incapable of home treatment and because assisted PD in the home is not universally available.
- Only 5% of prevalent dialysis patients are treated with PD.

Clin J Am Soc Nephrol. 2019 Jul 5;14(7):1067-1070. doi: 10.2215/CJN.01320119.

# Attitudes toward Peritoneal Dialysis among Peritoneal Dialysis and Hemodialysis Medical Directors: Are We Preaching to the Right Choir?

Jenny I Shen [1], Martin J Schreiber [2], Junhui Zhao [3], Bruce M Robinson [3], Ronald L Pisoni [3], Rajnish Mehrotra [4], Matthew J Oliver [5], Tadashi Tomo [6], Kriang Tungsanga [7], Isaac Teitelbaum [8], Arshia Ghaffari [9], Mark Lambie [10], Jeffrey Perl [11]



from 8% (Sweden) to 45% (France) of the PD population

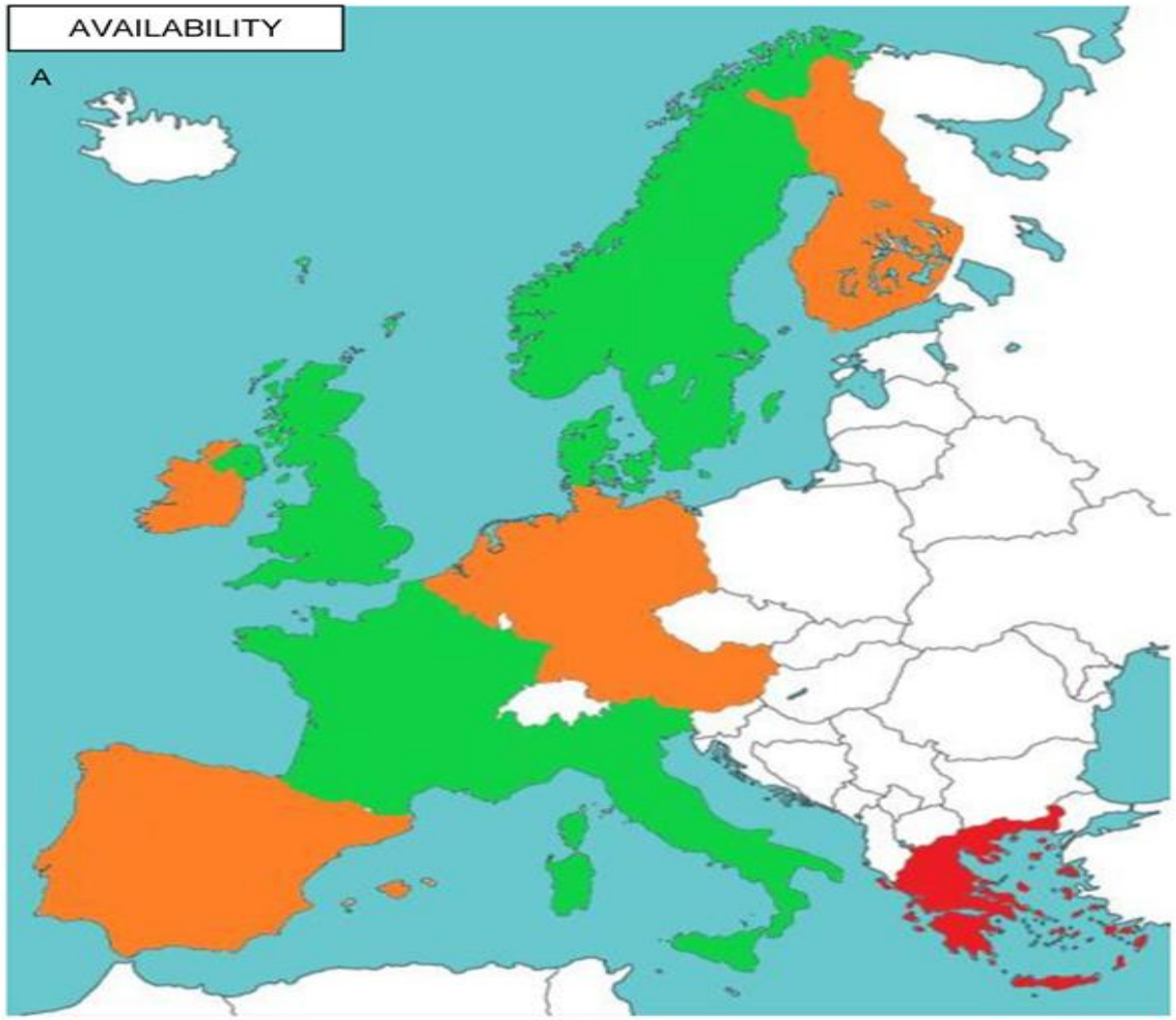



**Figure 1:** Availability and reimbursement of assisted PD in Europe. **(A)** Availability of assisted PD. Red = no availability; orange = moderate availability: assisted PD is done, however not structurally organized and not available nationwide; green = high availability: established assisted PD programs are available in (almost) all dialysis centers within the country; white = unknown. References: Brown *et al.* [11] ; Belgium/The Netherlands: "Authors information".

# Different Countries -Different Models

- Connection/disconnection from cycler – 2 visits /day
- Manual exchanges – 4 visits /day
- PD cycler set-up – once per day

± other tasks (exit site care, BP, weights, volume assessments etc)

# Duration of Assistance

- Long-term

✓for patients with permanent barriers to self-care without caregivers

- Short-term

✓during PD initiation to ensure safety and provide reassurance to patients and caregivers

✓for patients with temporary barriers to self-care without caregivers

✓during periods of caregiver illness or burnout

✓during acute illness (e.g. peritonitis)

# asPD is associated with greater incident use of PD and reduced transfer to HD.

## Canada

- The odds ratio (OR) for a patient being considered eligible for PD was 2.6 (*P*=0.01) if they lived in a region of home care support compared to if they did not
- 10% higher utilization of PD

## UK

- introducing an assisted PD program was significantly associated with an increased rate of PD initiation (HR: 1.78, 95% CI: 1.21–2.61).

Oliver MJ, Quinn RR, Richardson EP, et al. Home care assistance and the utilization of peritoneal dialysis. *Kidney Int* 2007; 71(7): 673–678.
Boyer A, Solis-Trapala I, Tabinor M, et al. Impact of the implementation of an assisted peritoneal dialysis service on peritoneal dialysis initiation. *Nephrol Dial Transplant* 2020; 35(9): 1595–1601

- France
- 2002-2017
- 2011: asPD program available

- France
- Compared with patients undergoing self-care PD, those with nurse-assisted PD had a risk for transfer to HD of 0.87 (95% confidence interval, 0.76 0.94),
- whereas family-assisted patients had a risk for transfer to HD similar to that of self-care PD patients.

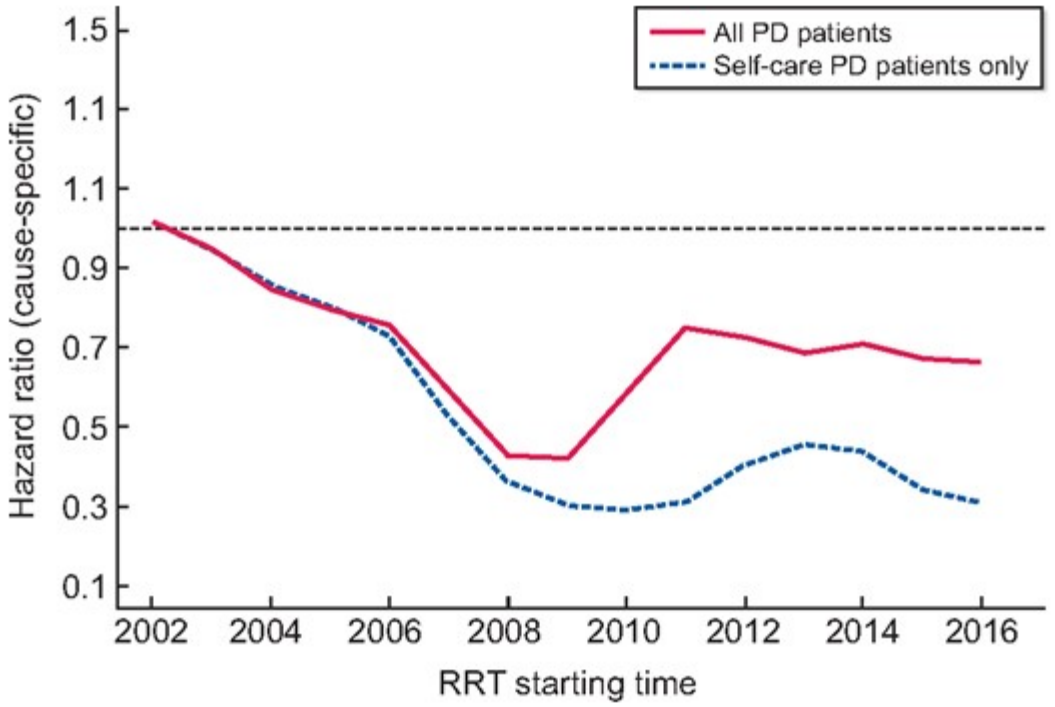
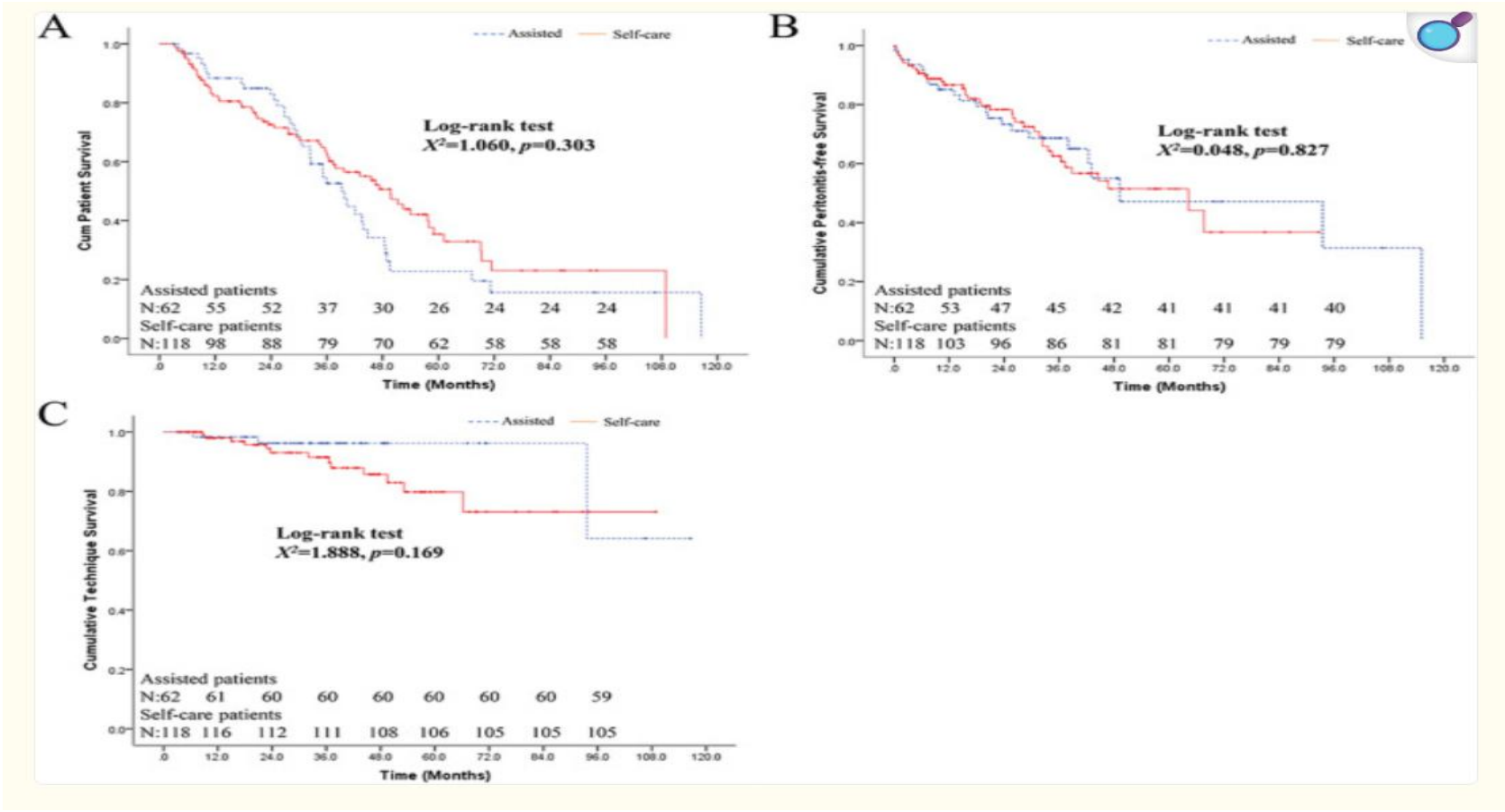



**FIGURE 1** Effect of assisted PD service on the hazard rate of PD initiation over time. Change in the proportional use of PD over time**:** lines (solid line: all PD patients; dashed line: self-care PD only) represent the rates of receiving PD at any point during follow-up, by the year that renal replacement was initiated, when compared with 2002 (expressed as an HR). The analysis was adjusted for age, gender, ethnicity and primary renal disease using a Cox model. There is a relative reduction in PD use between 2002 and 2008 that is partially reversed in after the introduction of assisted PD in 2011, at which point PD use stabilized.

Boyer A, Solis-Trapala I, Tabinor M, et al. Impact of the implementation of an assisted peritoneal dialysis service on peritoneal dialysis initiation. *Nephrol Dial Transplant* 2020; 35(9): 1595–1601.
Lobbedez T, Verger C, Ryckelynck JP, et al. Is assisted peritoneal dialysis associated with technique survival when competing events are considered? *Clin J Am Soc Nephrol* 2012; 7(4): 612–618.

# asPD has comparable survival, technique survival, peritonitis-free survival

- Shanghai, China
- 2009-2018




Qianhui Song Assisted peritoneal dialysis: a feasible KRT modality for frail older patients with end-stage kidney disease (ESKD) Sci Rep 2021 Jul 22;11(1):14928.

- France
- Peritonitis Risks in diabetic Nurse-AsPD patients in France is lower compared to self PD

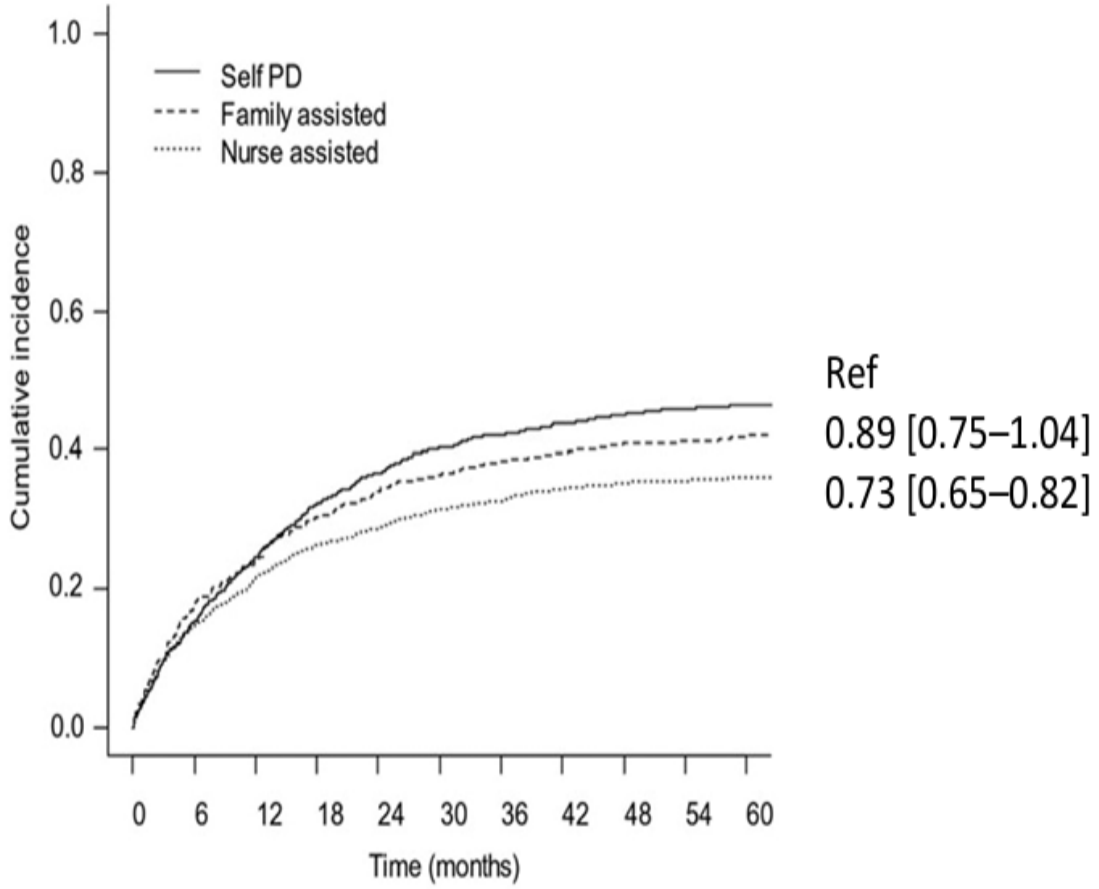
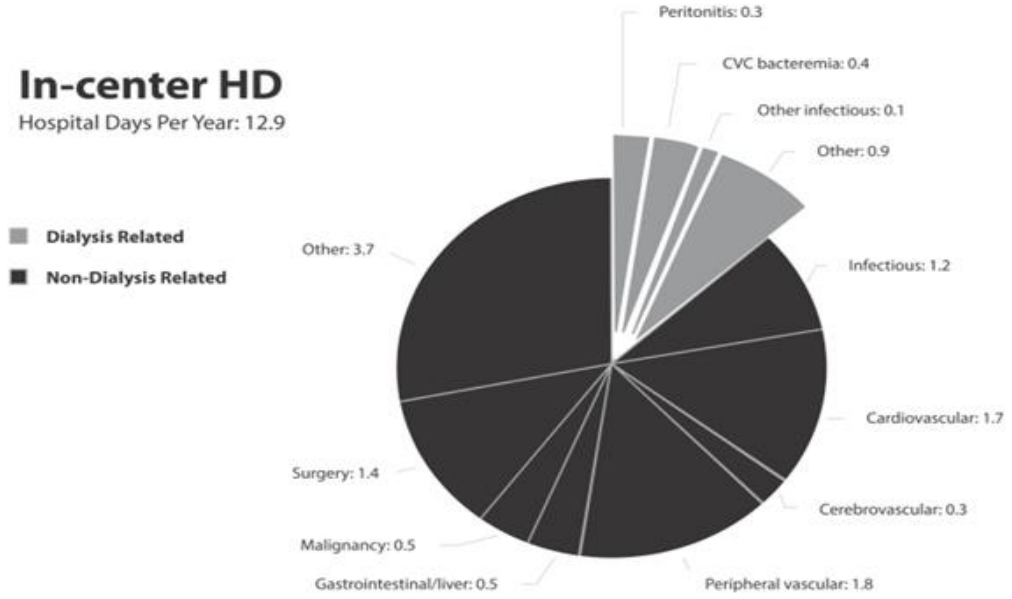


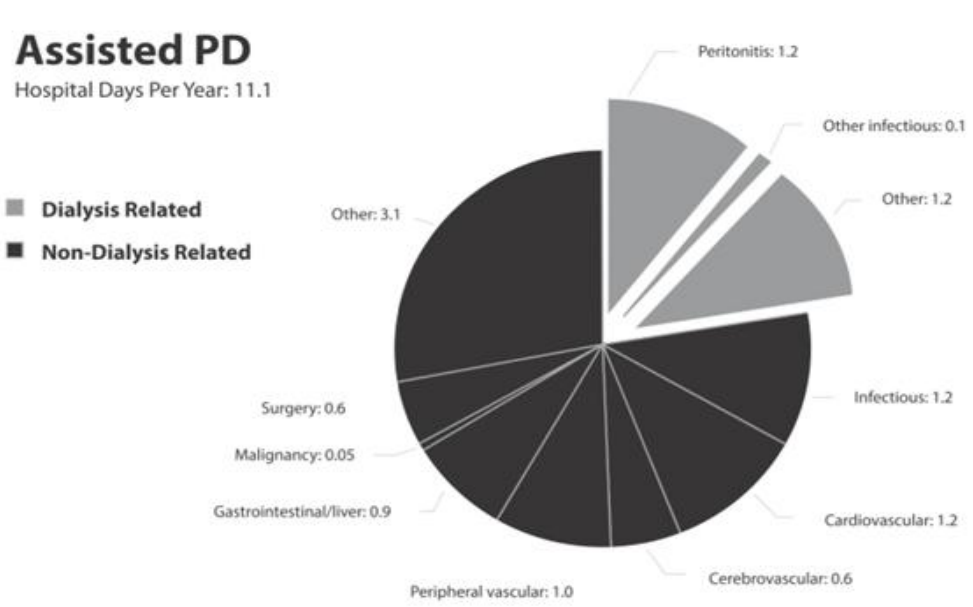

FIGURE 1: Cumulative incidence of peritonitis by modality of assistance.

Benabed A, Bechade C, Ficheux M, et al. Effect of assistance on peritonitis risk in diabetic patients treated by peritoneal dialysis: report from the French language peritoneal dialysis registry. *Nephrol Dial Transplant* 2016; 31(4): 656–662

# No Difference in Hospitalization: Assisted PD vs. In center HD

- 872 HD vs. 203 assisted PD patients propensity matched (family or nurse assisted)
- Greater dialysis related hospitalization in assisted PD driven by peritonitis and modality transitions




Oliver et al CJASN 2016

# QoL is similar between asPD and in-center HD

- reduce caregiver burden

**Table 3. Univariate comparison: Measures of quality of life and physical function**

| Variables | aPD, *n*=129 | HD, *n*=122 | Multiplicity–Adjusted *P* Value |
|---|---|---|---|
| SF-12 PCS,[a] median (IQR) | 33 (26.6–40.3) | 31.7 (25.2–38.2) | 0.57 |
| SF-12 MCS,[a] median (IQR) | 49.3 (38.4–54.2) | 50.8 (40.3–59.6) | 0.35 |
| Illness Intrusiveness Rating Scale, median (IQR) | 33 (21–43.75) | 33 (23–43) | 0.86 |
| HADS depression, median (IQR) | 6 (3–8.75) | 5 (3–7.75) | 0.05 |
| Possible depression (HADS>8), % of *n* | 38.8 | 23.8 | 0.05 |
| Renal Treatment Satisfaction Questionnaire score, median (IQR) | 55 (48–59.75) | 51 (44–57) | 0.01 |
| Symptom count, median (IQR) | 8 (6–10) | 9 (7–11) | 0.14 |
| Symptom score, median (IQR) | 14 (9–20) | 16 (11–22) | 0.39 |
| Barthel Score, median (IQR) | 90 (75–100) | 90 (78.3–100) | 0.82 |
| Timed up and go test ≥14 s (HD=46; PD=49), % of *n* | 80.4 | 79.6 | 0.99 |

aPD, assisted peritoneal dialysis; HD, hemodialysis; SF-12, Short Form-12; PCS, Physical Component Summary; IQR, interquartile range; MCS, Mental Component Summary; HADS, Hospital Anxiety and Depression Scale; PD, peritoneal dialysis.
[a]A higher score indicates better quality of life.

Osasuyi U Iyasere Quality of Life and Physical Function in Older Patients on Dialysis: A Comparison of Assisted Peritoneal Dialysis with Hemodialysis Clin J Am Soc Nephrol 2016 Mar 7;11(3):423-30.

# Assisted PD

- Can promote PD
- It is safe
- offers the option of home-based dialysis to patients who would otherwise automatically be referred to haemodialysis

- **The question that arises..**
- Could asPD represent a solution for the continuously growing population of elderly ESKD patients, relieving pressure on healthcare facilities.

# The real World

- Denmark


Figure 2. Start-up costs associated with dialysis modalities (2009 price level). CHD = centre haemodialysis; Self Care HD = self-care haemodialysis; HHD = home haemodialysis; CAPD = continuous ambulatory peritoneal dialysis; APD = automated peritoneal dialysis; AAPD = assisted APD.

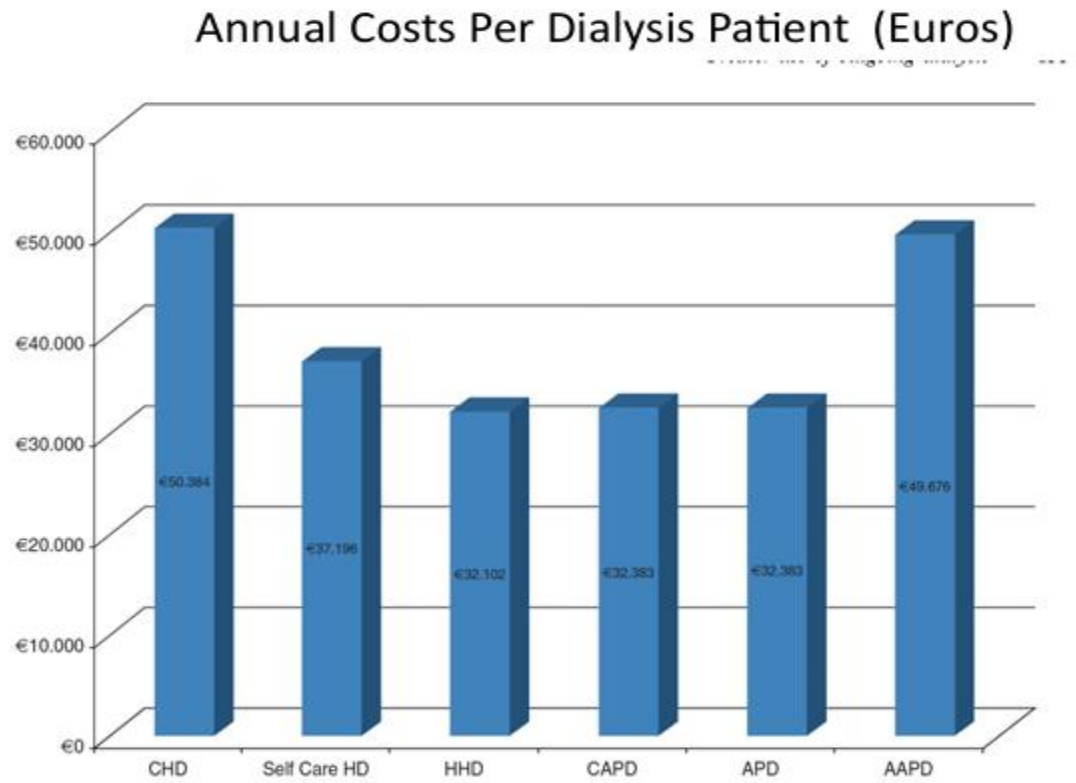



Figure 3. Annual cost of dialysis (2009 price level). CHD = centre haemodialysis; Self Care HD = self-care haemodialysis; HHD = home haemodialysis; CAPD = continuous ambulatory peritoneal dialysis; APD = automated peritoneal dialysis; AAPD = assisted APD.

Povlsen et al PDI 2005, Olsen et al Scand Journal of Urol and Nephr 2010

# AsPD does not exceed the cost of in-center HD.

**Table 5**. Annual costs of assistance, peritoneal dialysis and in-centre haemodialysis.

| Region | Model | Assisted PD cost (annual) | PD costs (annual) | Comparator costs |
|---|---|---|---|---|
| British Columbia, Canada (Bevilacqua) | Non-healthcare professional<br>No connections | $15,000 | $45,000 | $83,500 for PD in long-term care<br>$89,000 for in-centre HD |
| Ontario, Canada[a] | Nurses<br>Connections | $20,566 | $39,289 for CCPD<br>$29,689 per year CAPD | $50,075 for conventional In-centre HD<br>$83,467 for short daily or nocturnal in-centre HD |
| France[b] | Nurses only<br>Connections–disconnections | 6879 € for CCPD<br>13,759 € for CAPD | 42,900 € for CCPD<br>32,448 € for CAPD | 58,188 € for conventional in-centre HD<br>44,460 € for satellite HD<br>39,624 € for conventional home HD<br>79,248 € for short daily home HD |

# ISPD Position Statement on Assisted Peritoneal Dialysis

PERITONEAL DIALYSIS INTERNATIONAL

## Justification for Assisted PD

**During PD Initiation**
Safety and reassurance

**Short or Long-term Assistance**
During periods of patient/caregiver illness/burnout or permanent/temporary barriers to selfcare

## Models of Assisted PD

**Existing Models Vary Considerably**

**Key Reporting Outcomes**
- Geographic scope
- Funding mechanism(s)
- Duration & location of assistance
- Type of assistants
- What specific tasks are performed

## Training & Communication

Assistants trained by PD nurse or nurse educator using a standardized curriculum

Adequate number of assistants available

Robust communication systems

## Quality Control

Monitor outcomes similar to non-assisted PD population

Report outcomes stratified by use of assistance

Reported outcomes should account for difference in case mix of patients requiring assistance (e.g. elderly, high co-morbidity)

## Funding for Assisted PD

Healthcare systems should fund assisted PD to increase equitable access to home dialysis

Should support short-term & long-term assisted PD

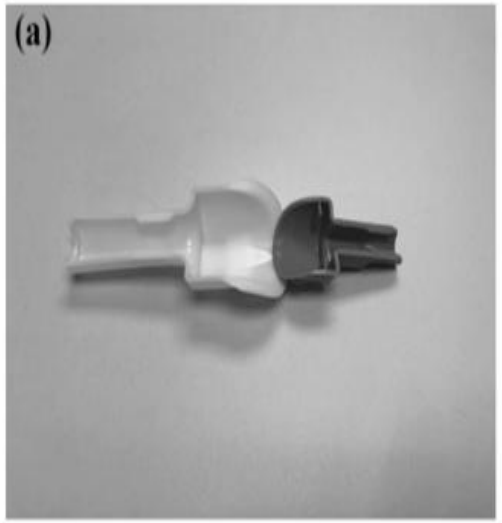
New programs should have an analysis plan to measure direct and indirect cost benefits.

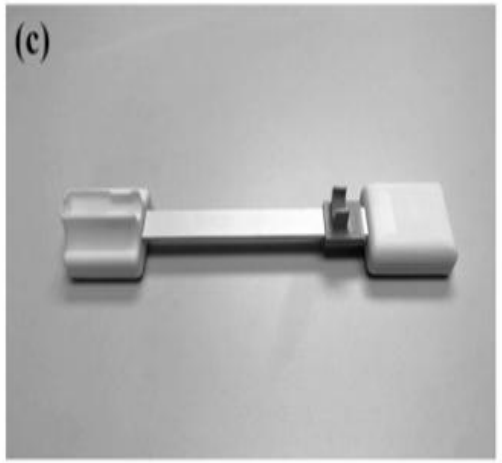
## Impact on PD Use

Associated with higher incident PD & reduced rates of transfer to HD

**Report prior to program start**
- Historical PD incidence
- Prevalent PD use rate
- Time on PD

# Devices





ıce (n=86)

elper-assisted CAPD
Device-assisted CAPD

k et al PDI 2022

# In the Future

Thank You