Targeting 50% of ESRD Patients for Home Dialysis: Is this a Reasonable Target? CON

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Annual Dialysis Conference

Feb. 8, 2020

Disclosures

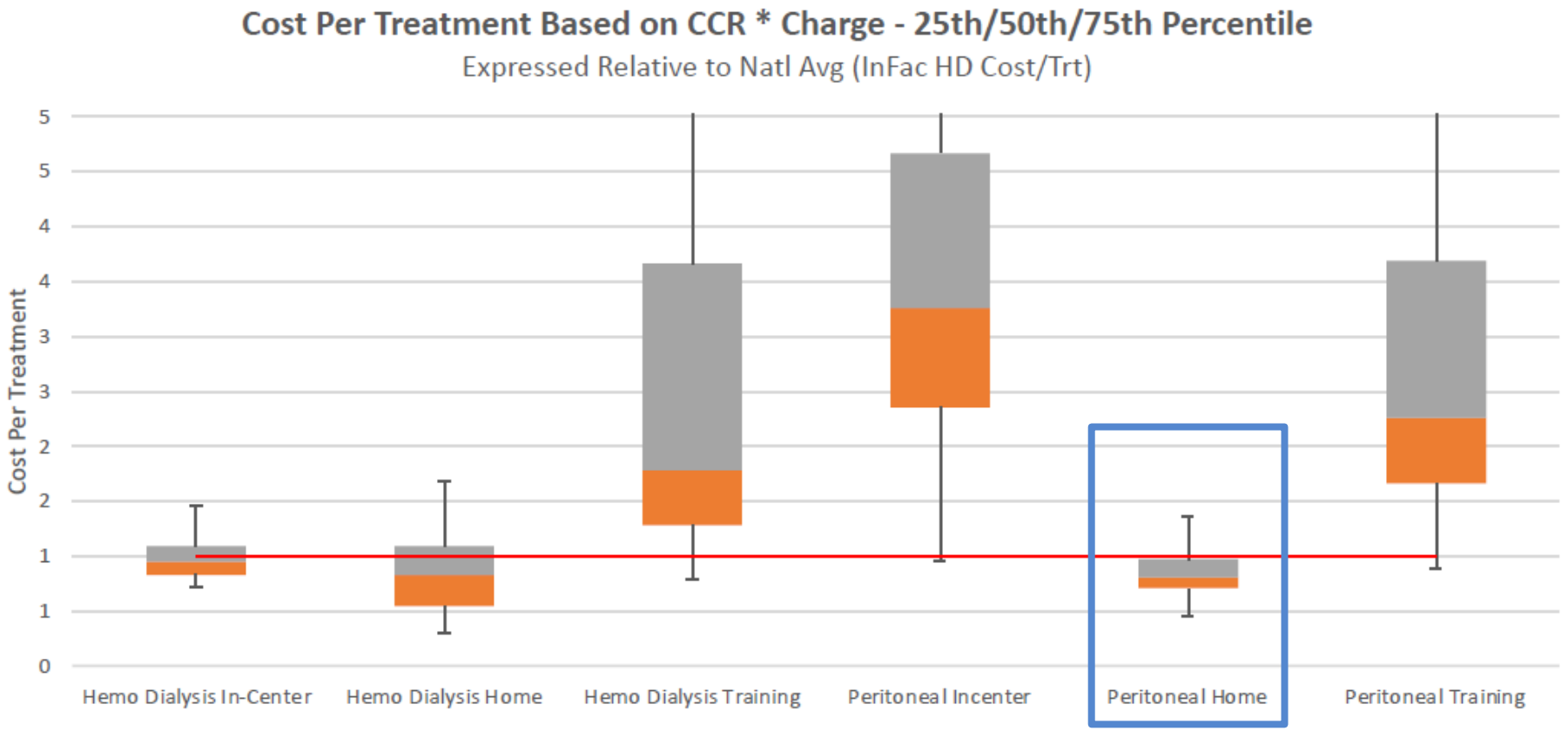
- None

Why are we having this debate?

- We think it might be a desirable goal to have 50% of ESKD patients on home dialysis in the US because
  - Home dialysis is less expensive than in-center
  - Home dialysis is associated with better outcomes than in-center
    - Hard outcomes like mortality
    - Quality of life outcomes
- The Advancing American Kidney Health initiative told us to have 80% of incident ESKD patients on home dialysis or receive a preemptive transplant by 2025

Fact Check: Home dialysis is less expensive than in-center dialysis

- TRUE for peritoneal dialysis

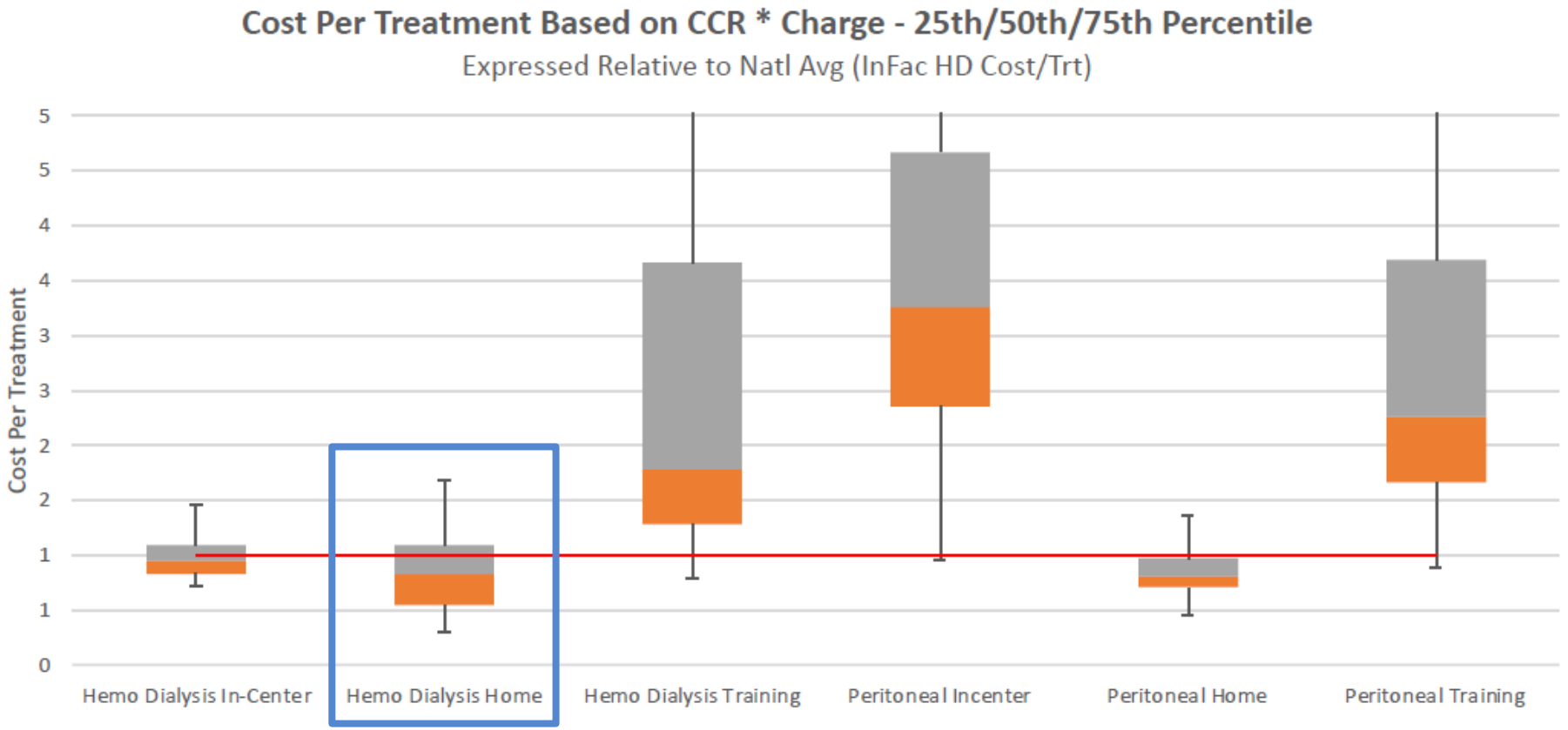


BUT…

- PD costs have risen significantly in recent years
  - Higher costs attributed to inputs such as supplies and equipment
  - Limited competition among suppliers
- Logistical challenges affect facility-level uptake
  - Limited resources may force facilities to choose between offering a home dialysis program and other priorities
- Home dialysis requires highly skilled nursing support
  - Caseload for nurses dedicated to home dialysis care limited to 6-7 patients/ week
  - Training costs for home dialysis nurses
- Separate survey and certification requirements for home programs may be burdensome

Fact Check: Home dialysis is less expensive than in-center dialysis

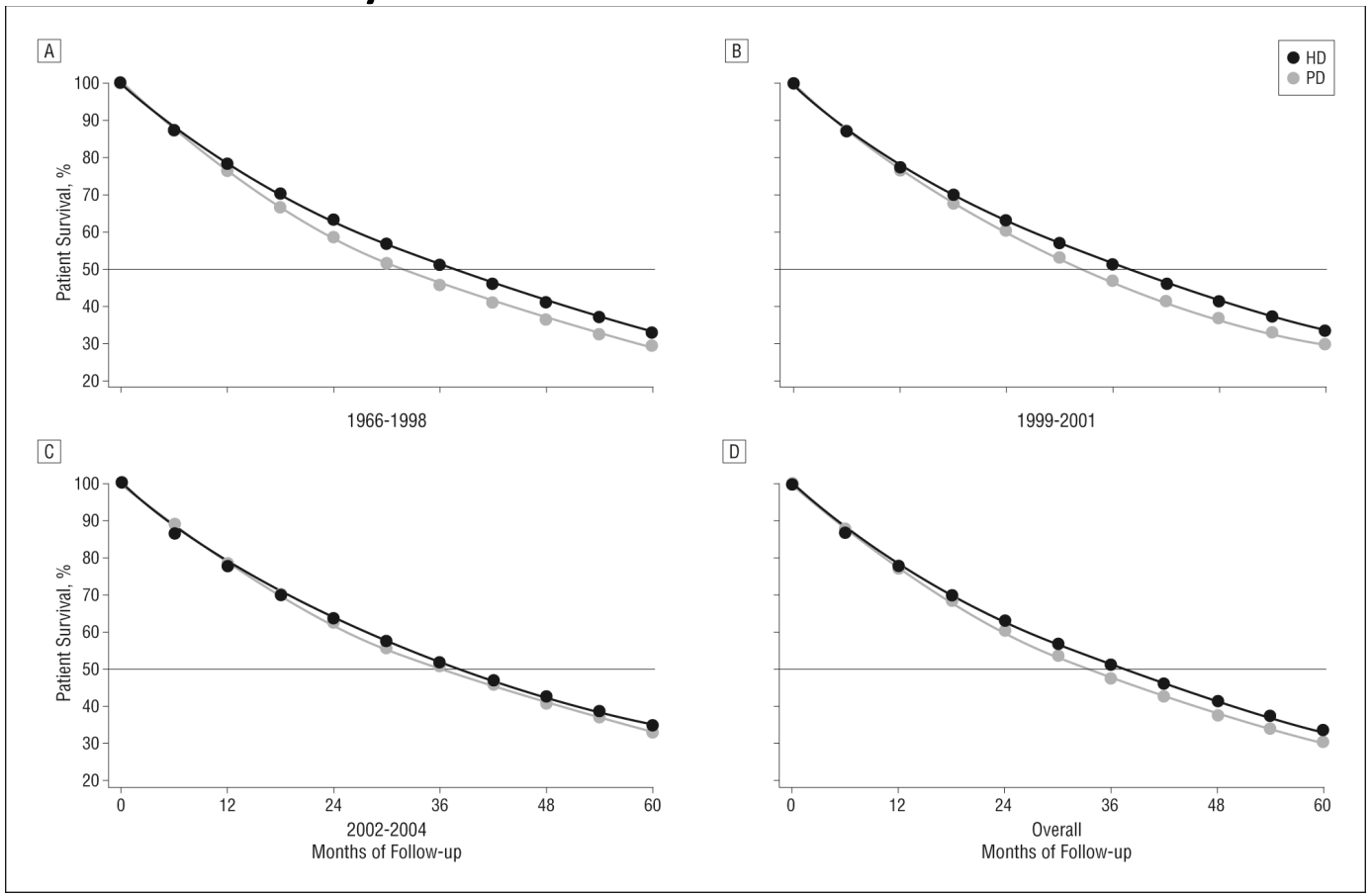
- FALSE for home hemodialysis (although CMS thinks it is)



Above costs for HHD are based on Medicare payments which are limited to 3-4 treatments/week.
If patient is receiving 5-6 HHD treatments/week, costs are considerably higher and exceed in-center.

Fact Check: Home dialysis is associated with better outcomes than in-center

- FALSE for peritoneal dialysis



Similar Outcomes With Hemodialysis and Peritoneal Dialysis in Patients With End-Stage Renal Disease
Arch Intern Med. 2011;171(2):110-118.

Fact Check: Home dialysis is associated with better outcomes than in-center

- TRUE for home HD
- Weinhandl et al abstract at 2018 ASN showed survival after one year of follow-up was 91.7% and 81.4% in HHD and IHD patients, respectively. After adjustments, HHD patients were 23% less likely to die during follow-up than IHD patients
- However, since this was not an RCT, there remains the possibility of residual confounding since HHD patients are generally healthier than IHD patients

What are the differences between home and in-center dialysis patients?

- Home dialysis patients are more likely to be younger, white, urban, and not dual-eligible (Medicare + Medicaid)
- Could this be skewing outcome comparisons between modalities?

Beneficiary Characteristics		In-Facility	Home	
			HD	PD
Total Beneficiary Count		**277140**	**5673**	**28534**
Average Age		63	57	59
Male		55.7%	61.7%	53.9%
Race	White	44.5%	60.0%	56.6%
	Black	38.4%	29.3%	25.5%
	Hispanic	7.9%	3.8%	7.1%
	Other Races	9.2%	6.9%	10.9%
Rural		6.8%	8.5%	8.9%
Dual-eligible		51.3%	34.7%	34.5%

Where did that 80% goal in the Advancing American Kidney Health initiative come from?

- "Up to 85 percent of patients are eligible for home dialysis"[1]
  - A US-Canadian study from 2009 which reported no medical or psychological contraindication to home dialysis in 85% of patients examined. That's not the same as 85% of patients **wanting** home dialysis.
- "In one study, 25 to 40 percent of patients reported that they would select home dialysis if given the opportunity"[2]
  - However, "only **24%** of patients informed before and 8% of patients informed after starting dialysis were ultimately treated with PD. Reasons for a mismatch between dialysis modality preference and treatment delivered were equally distributed between medical and nonmedical."

1. Mendelssohn DC. Mujais SK, Soroka, SD, et al. Nephrology Dialysis Transplantation. 2009; 24(2): 555-561.

2. Maaroufi A, Fafin C, Mougel S, Favre G, Seitz-Polski P, Jeribi A, Vido S, Dewismi C, Albano L, Esnault V, Moranne O. American Journal of Nephrology. 2013; 37(4): 359-369.

So how are we doing towards that 50% home dialysis goal?

Claims data indicate only modest growth from 9.3% in 2011 to 11.7% in 2018

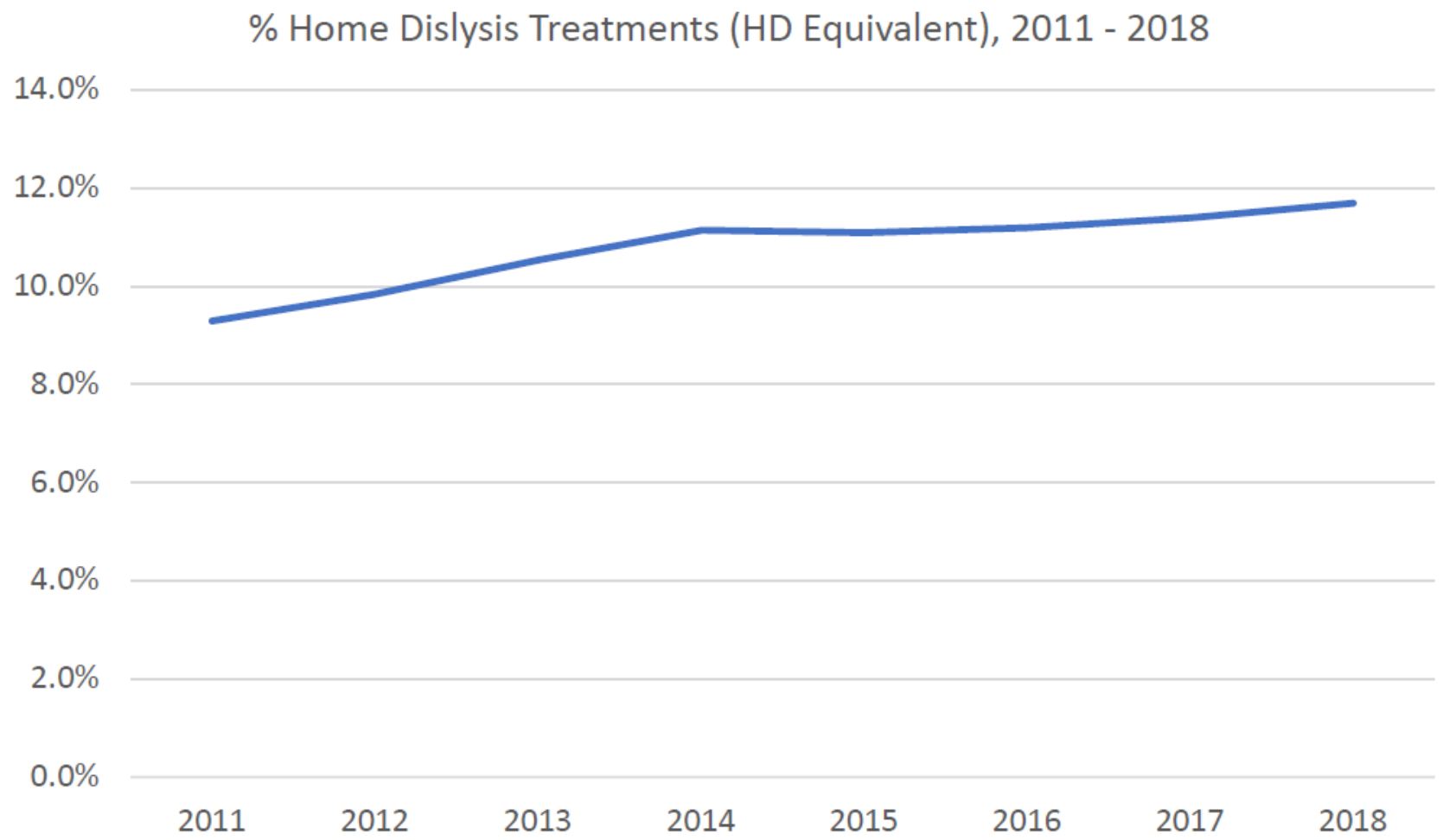


Table 1. Largest dialysis providers in 2019

Dialysis Provider	Number of patients	In-Center Conventional HD	Home HD	PD	Units	Patient growth 5/19 (vs. 5/18)	Percent Home Patients
1. Fresenius Medical Care North America	208,007	183,406	4,686	19,915	2,671	6,827 (8,216)	11.8
2. DaVita Kidney Care	204,000	177,900	3,200	22,900	2,705	5,000 (8,500)	12.8
3. U.S. Renal Care	25,327	22,467	202	2,658	334	510 (-303)	11.3
4. American Renal Associates	17,018	15,437	150	1,431	243	1,242 (1,041)	9.2
5. Dialysis Clinic Inc.	14,969	13,085	209	1,675	261	11 (-41)	12.6
6. Satellite Healthcare	8,209	6,557	232	1,420	79	255 (347)	20.1
7. Atlantic Dialysis Management	2,309	2,252	5	52	13	26 (67)	2.4
8. Northwest Kidney Centers	1,822	1,579	43	200	18	57 (50)	13.3
9. Rogosin Institute	1,675	1,473	65	137	10	206 (n/c)	12.0
10. Centers for Dialysis Care	1,526	1,502	15	9	15	-42 (66)	1.6
2019 Totals	484,862	425,658	8,807	50,397	6,347		12.2
2018 Totals	470,786	416,504	7,808	46,474	6,030		11.5

Source: *Nephrology News & Issues*

At 0.7% increase per year, 50% of patients will be on home dialysis in 54 years

So what's the problem? Financial incentives to providers to encourage home dialysis have been in effect since the PPS in 2011

- How patients land on dialysis
- How patients think about home dialysis
- How doctors think about home dialysis
- The lack of an infrastructure to support patients on home dialysis
  - Nursing
  - Technology/PD assistants/telemedicine

How many patients land on dialysis

- 40% have had no nephrology care prior to ESKD
  - Poor insurance among vulnerable populations
  - Lack of consistent criteria for nephrology referral
  - Single payer integrated healthcare systems such as Kaiser and the VA do the best ESKD preparation (35% home dialysis at Kaiser of Northern CA)
- Of patients who have had nephrology care, most are ill-educated and ill-prepared for dialysis - DENIAL
  - They don't go to pre-dialysis education classes
  - They don't read the "Help me I need dialysis" book
  - They don't visit home dialysis units even when arrangements are made to do so
- So they "crash land" on dialysis via an ED and end up with the path of least resistance – a TDC and in-center hemo
- Urgent-start PD programs have had variable success do to the lack of 24-7 personnel for PD catheter placement
- Transitional care dialysis units have difficulty meeting the needs of incident dialysis patients due to staffing and patient access

How many patients think about home dialysis

FEAR, FEAR, FEAR

- Home environment not sterile enough, big enough, or appropriate for maintenance or storing items
- Anxiety and stress issues of dialysis process
- No one to help—fear of doing it alone
- Fear of serious medical incident
- Physical issues, such as inability to lift medical equipment/bags
- Weight gain/body image issues
- Unstable health or cognitive issues
- Homelessness or unstable home situation
- Plan of care is to be transplanted, and catheter placed in abdomen is not a medical recommendation by transplant team
- Feeling of isolation at home

Lori Hartwell, CJASN 14: December 2019

How some nephrologists think about home dialysis

- I’m uncomfortable with it since I never had much exposure to it during my fellowship
- I won’t be very good at it if I only have a few patients; I’m much more experienced with HD so my patients will be better off on HD
- I don’t want to have to see patients at another site; I’m already stretched too thin
- My patients aren’t suitable for home dialysis – too sick, don’t want it, etc.
- If I refer my home dialysis patients to someone else, I’ll lose their MCP
- Patients can dialyze at home? That sounds pretty unsafe to me.

The lack of infrastructure to support patients on home dialysis (1)

- Home dialysis nursing requires a completely different skill set and commitment from in-center HD nursing
  - It requires teaching skills and patience
  - It requires on-call since home dialysis problems don't just occur during business hours
  - Most nurses prefer shift work in an HD unit because when they go home they're done until their next shift
  - Where are these committed nurses going to come from?
  - Who is going to train them and do their own job at the same time?

The lack of infrastructure to support patients on home dialysis (2)

- What about assisted PD?
  - We compare our home dialysis rates to those in other countries, but many of those countries (such as Canada) have PD assistants
  - In the US PD patients often have to go it alone
  - Where would the funding for PD assistants come from?
  - What are the chances this would ever happen?

Variable	Recommendation
Patient population	• A large number of patients starting dialysis with barriers to self-care who are considering PD • Elderly population • Urban environment to reduce the travel time of assistants
Eligibility	• Patients who are assessed with standardized tools that are both validated but also able to identify specific barriers to self-care PD
Physician issues	• Physicians are experienced in the management of PD patients • No financial barriers to growing PD population
Visiting healthcare professionals	• A mixture of nurses and lower-cost healthcare workers (*e.g.*, community healthcare workers) • Standardized curriculum and training by experienced PD nurses • Training could be supported by dialysis providers
Funding	• The pilot program could be funded by a combination of research funding, philanthropy, and dialysis providers • Long-term funding of short-term and long-term assistance provided by CMS once cost-effectiveness is established (*e.g.*, assisted PD bundle)
Evaluation	• Create a concurrent control group by randomization or offering assisted PD in selected regions • Evaluate the impact of offering assistance on PD eligibility, PD choice, and PD receipt, as well as technique failure to determine the cost-effectiveness • Mortality, hospitalization, quality of life, and PD specific outcomes (*e.g.*, peritonitis rate) can also be measured with larger sample sizes
Utilization	• Set a target of utilization (*e.g.*, 30–40% of the PD population to ensure proper usage)
Regulatory	• Development of payment model for visiting assistants • Certification of visiting assistants

Box 1. | Recommendation for a pilot program of assisted peritoneal dialysis in the United States. PD, peritoneal dialysis; CMS, US Centers for Medicare and Medicaid Services.

Oliver and Salinger, CJASN 15: January 2020

Summary

- The premise that home dialysis is both less expensive and associated with better outcomes than in-center HD is flawed
- Despite financial provider incentives favoring PD, it has sustained only modest growth since the implementation of the ESRD PPS in 2011
- At the current rate of growth, we can be expect to achieve a 50% home dialysis rate in about 50 years unless there are radical changes including
  - Better nephrologist education and comfort with home dialysis
  - Better pre-ESKD care through integrated healthcare delivery systems that reach disadvantaged populations
  - Better education of patients regarding modality options, especially from peers
  - Better infrastructure to accommodate 50% of the ESKD population including committed home dialysis nurses, PD assistants, telemedicine, and user-friendly interfaces
- A well informed patient will not necessarily choose home dialysis
- Our goal should be to inform patients of modality options, then provide the infrastructure for them to succeed in whatever they choose. That's what patient-centered care means.