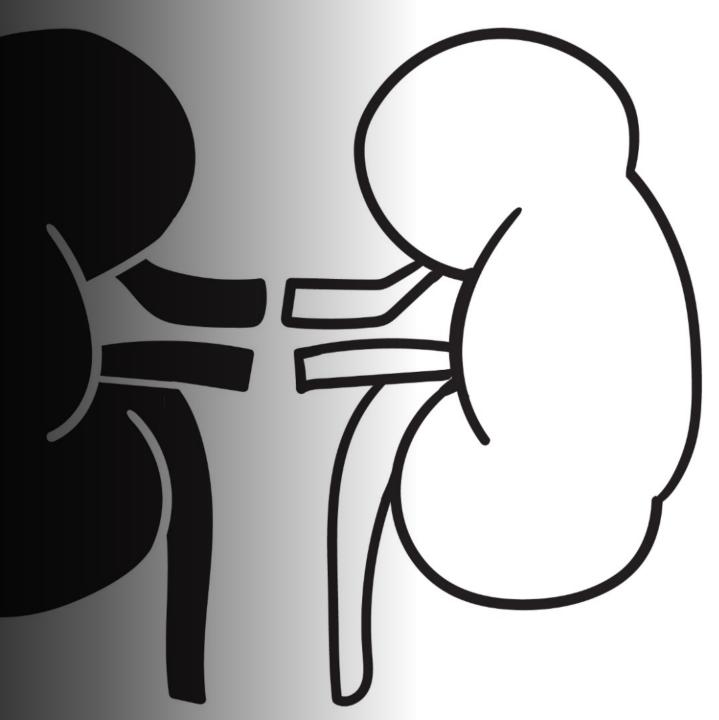
Racial and ethnic disparities in home dialysis

Katherine Rizzolo, MD University of Colorado



No financial disclosures



Why go home?



Higher quality of life

Scheduling flexibility Fewer food restrictions





Lower symptom burden

Preservation of residual kidney function

Lower medication burden

Patient preference: what is important?



Flexibility of schedule



Convenience of performing dialysis at home



Option of doing dialysis at home while sleeping

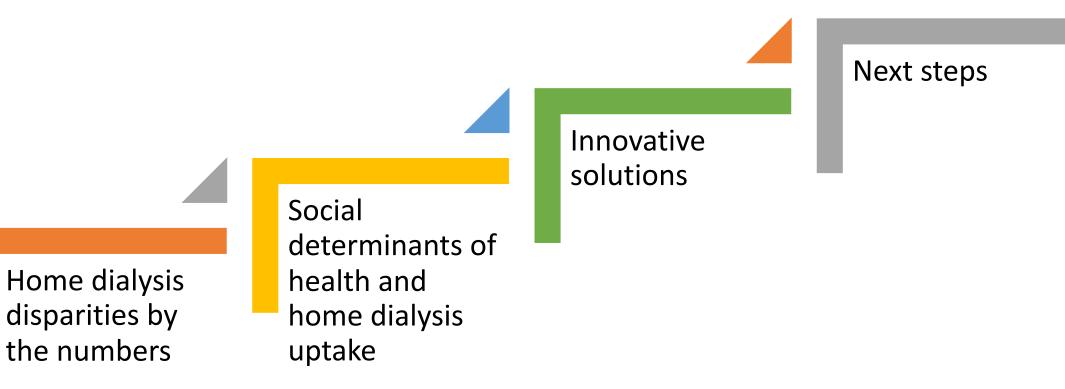
Wuerth DB, Finkelstein SH, Schwetz O, Carey H, Kliger AS, Finkelstein FO. Patients' descriptions of specific factors leading to modality selection of chronic peritoneal dialysis or hemodialysis. Perit Dial Int. 2002 Mar-Apr;22(2):184-90. PMID: 11990402.

ADVANCING AMERICAN Kidney Health

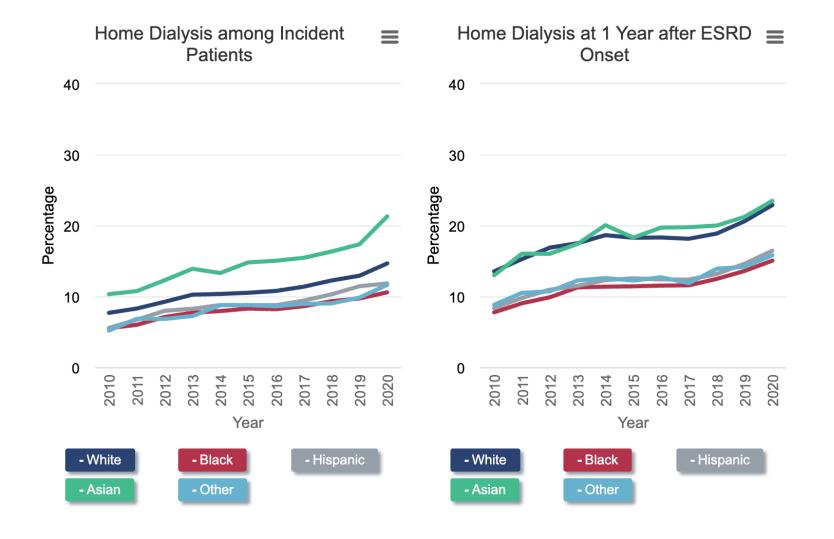
Advancing American Kidney Health Initiative

Reduce risk of kidney failure	Improve access to and quality of person-centered treatments for kidney failure	Increase access to kidney transplants
By 2030, ↓new ESKD pts by 25%	By 2025, 80% new pts with home dialysis or transplant	By 2030, double number of kidneys available for transplant
Improve identification of populations at risk and in early stages of kidney disease	Improve care coordination and education for safer transition to treatment for kidney failure	Increase deceased donor organ recovery and reduce discards
Encourage adoption of treatments to retard or stop kidney disease progression	Introduce new value-based payment models that better align incentives	Reduce disincentives to living organ donation and provide financial incentives
	Catalyze the development of the artificial kidney	

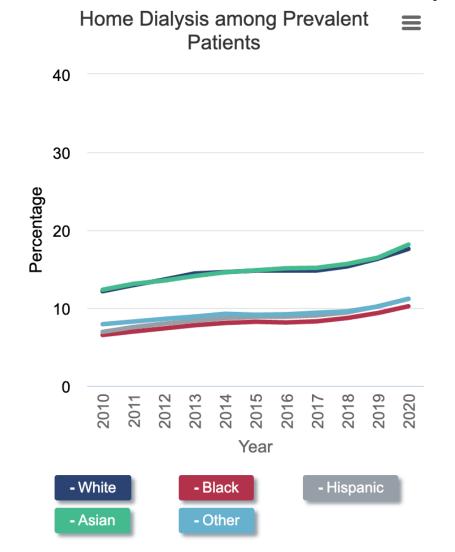
Outline

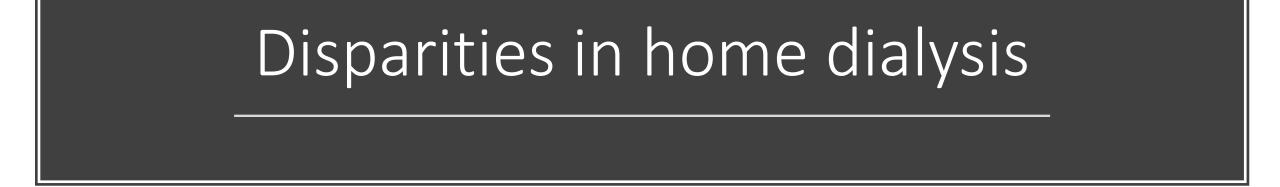


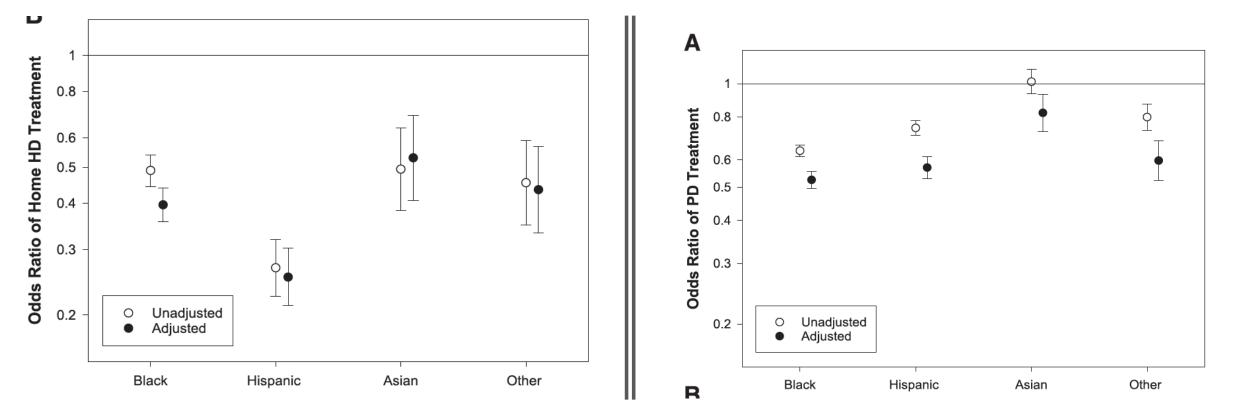
Black and Hispanic groups are less likely to initiate on home therapies



Black and Hispanic groups are less likely to switch to home therapies

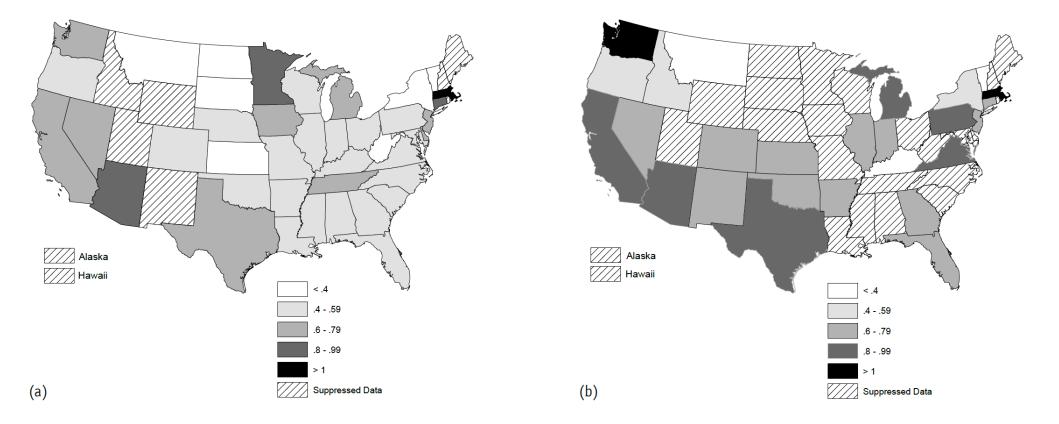






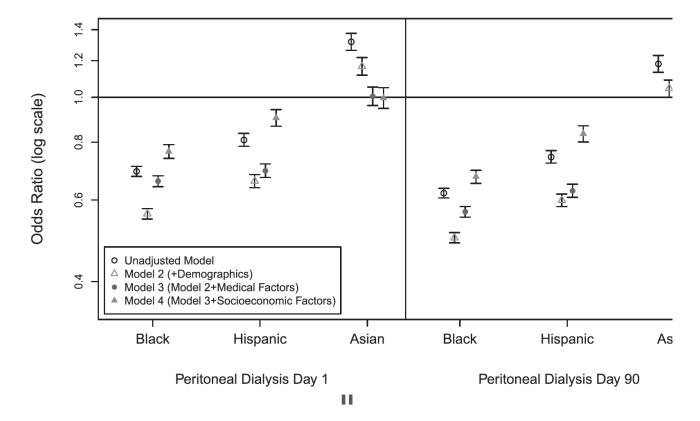
Mehrotra R, Soohoo M, Rivara MB, Himmelfarb J, Cheung AK, Arah OA, Nissenson AR, Ravel V, Streja E, Kuttykrishnan S, Katz R, Molnar MZ, Kalantar-Zadeh K. Racial and Ethnic Disparities in Use of and Outcomes with Home Dialysis in the United States. J Am Soc Nephrol. 2016 Jul;27(7):2123-34. doi: 10.1681/ASN.2015050472. Epub 2015 Dec 10. PMID: 26657565; PMCID: PMC4926974.

Near universal disparities by state



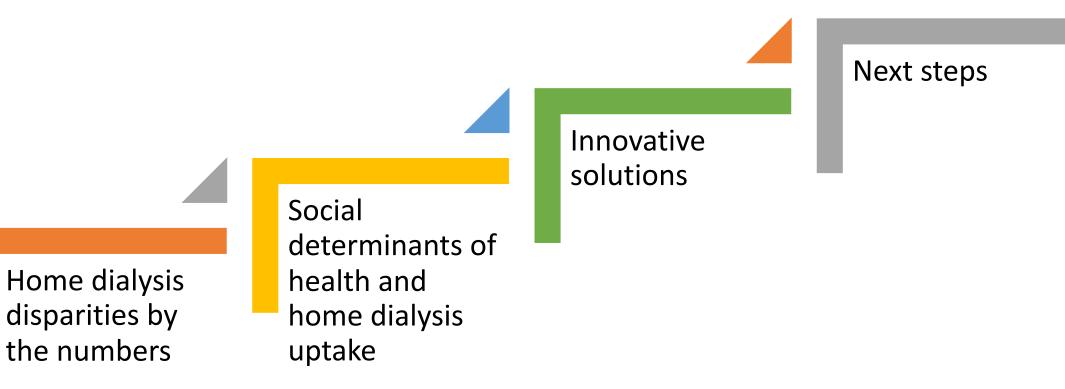
Wallace EL, Lea J, Chaudhary NS, Griffin R, Hammelman E, Cohen J, Sloand JA. Home Dialysis Utilization Among Racial and Ethnic Minorities in the United States at the National, Regional, and State Level. Perit Dial Int. 2017 1-2;37(1):21-29. doi: 10.3747/pdi.2016.00025. Epub 2016 Sep 28. PMID: 27680759.

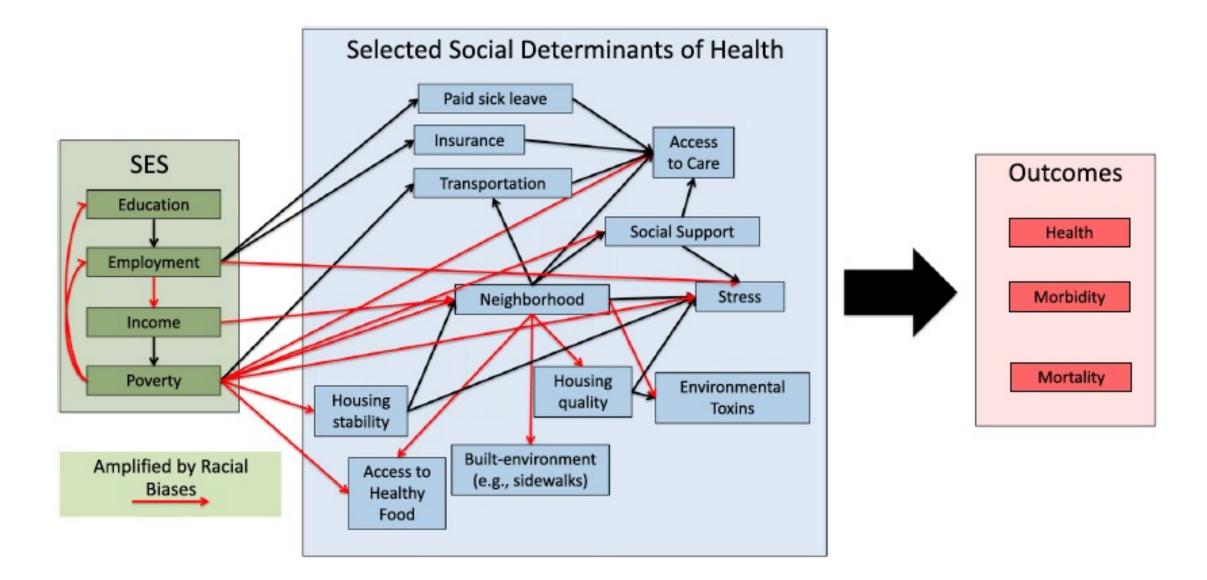
Disparities in home dialysis



Shen JI, Chen L, Vangala S, Leng L, Shah A, Saxena AB, Perl J, Norris KC. Socioeconomic Factors and Racial and Ethnic Differences in the Initiation of Home Dialysis. Kidney Med. 2020 Feb 11;2(2):105-115. doi: 10.1016/j.xkme.2019.11.006. PMID: 32734231; PMCID: PMC7380374.

Outline





Norton JM, Moxey-Mims MM, Eggers PW, Narva AS, Star RA, Kimmel PL, Rodgers GP: Social Determinants of Racial Disparities in CKD. Journal of the American Society of Nephrology, 27: 2576-2595, 2016 10.1681/asn.2016010027

Policies and social conditions

Policies influence social conditions and contexts in employment, education, housing, income, criminal justice, health care, and other domains. History, culture, norms, and politics (including biased/discriminatory policies and social conditions)

Institutional context

Health care, law, media, religion, education, financial and political systems, and other institutions are influenced by politics, culture, history, and social norms (including biased/discriminatory policies). Institutions both shape and are shaped by policies

Social contexts and social relationships

Collective efficacy, social capital, socioeconomic gradients, social networks, social support, social influences, social and civic engagement, employment, and other social-contextual domains are impacted by policies and broader institutions

Physical contexts

Neighborhood contexts including building quality, safety, pollution, recreational resources, transit, sidewalks, green space, and schools and access to health care, foods, tobacco, alcohol, pharmacies, and other health-influencing factors are impacted by policies and institutions

Individual demographics

(*e.g.*, race, ethnicity, age, nationality, gender, sexual orientation, ability status, religion, *etc.*)



Health behaviors (*e.g.*, diet, physical activity, health care utilization, substance use, *etc.*)

Biological responses

(*e.g.*, allostatic load, epigenetic and genetic pathways for disease including hypertension, diabetes, *etc.*)

Barriers in home dialysis

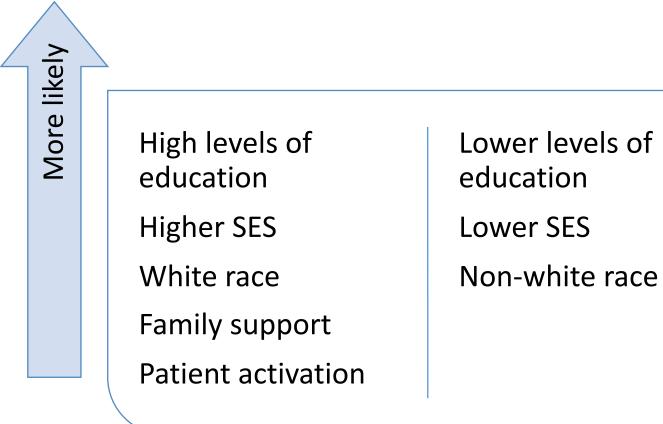


PATIENT

PROVIDER



Patient level-factors



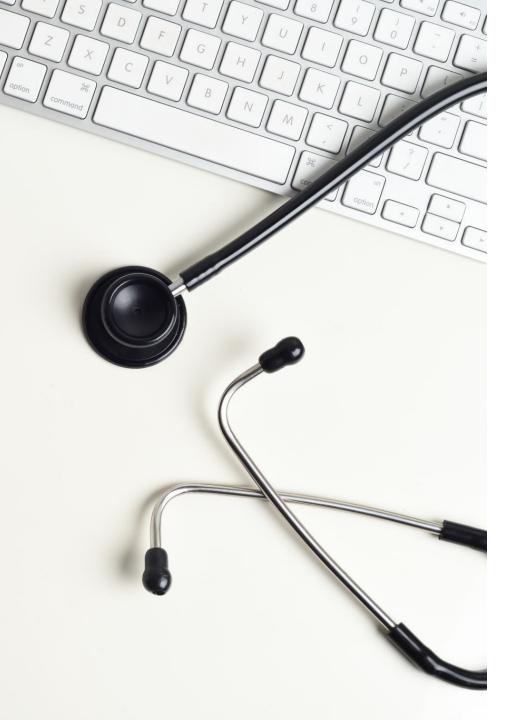
Less likely



Major barriers for patients

- Prefers hemodialysis (social reasons)
- Waiting to decide (not ready)
- Anxieties about self-efficacy or lack of social support
- Built environment (space for supplies etc)
- Negative bias
- Swimming/pets

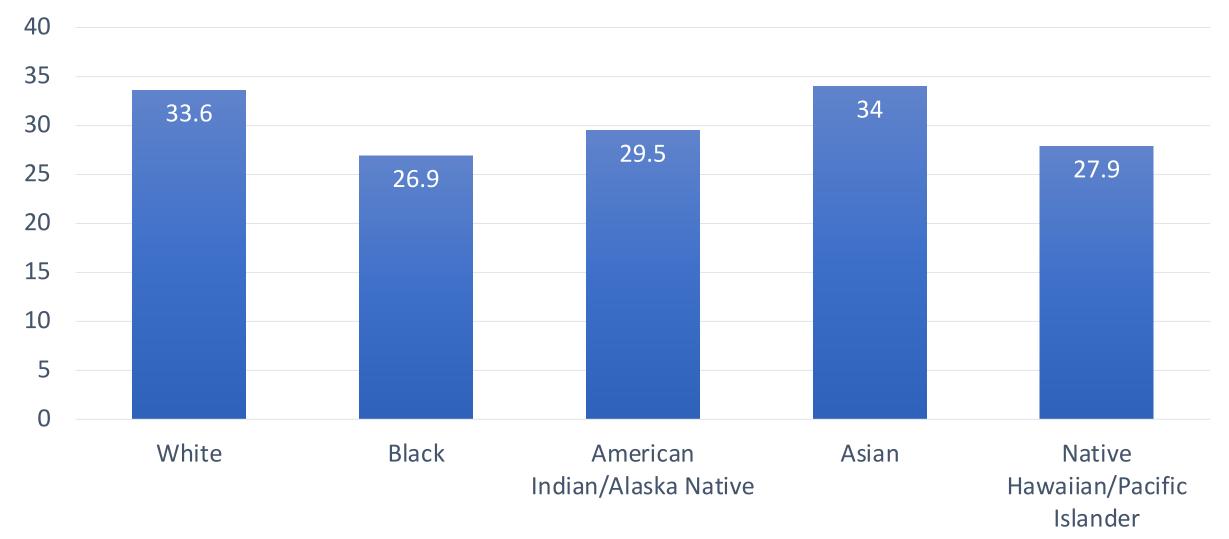
Prakash S, Perzynski AT, Austin PC, Wu CF, Lawless ME, Paterson JM, Quinn RR, Sehgal AR, Oliver MJ. Neighborhood socioeconomic status and barriers to peritoneal dialysis: a mixed methods study. Clin J Am Soc Nephrol. 2013 Oct;8(10):1741-9. doi: 10.2215/CJN.11241012. Epub 2013 Aug 22. PMID: 23970135; PMCID: PMC3789354.



Provider

- Lower levels of pre-dialysis care
- Higher levels of suboptimal starts
- More likely to use units without home dialysis
- Lower provider familiarity with home dialysis

>12 months pre-dialysis care



United States Renal Data System. 2018 USRDS Annual Data Report: Epidemiology of kidney disease in the United States. National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD, 2018.

Table 3. Temporal Trends in Racial/Ethnic Disparities in Receipt of at Least 12 Months of Predialysis Nephrology Care

	Crude OR (95% CI)			Adjusted OR (95% CI) ^a				
Cohort year	White	Black	Hispanic	Asian	White	Black	Hispanic	Asian
2005-2007	1 [Reference]	0.74 (0.72-0.75)	0.61 (0.59-0.63)	0.81 (0.77-0.85)	1 [Reference]	0.82 (0.80-0.84)	0.67 (0.65-0.69)	0.84 (0.80-0.89)
2008-2010	1 [Reference]	0.71 (0.69-0.72)	0.58 (0.57-0.60)	0.81 (0.78-0.85)	1 [Reference]	0.77 (0.76-0.79)	0.63 (0.61-0.65)	0.84 (0.81-0.88)
2011-2013	1 [Reference]	0.72 (0.71-0.73)	0.57 (0.56-0.59)	0.83 (0.80-0.86)	1 [Reference]	0.78 (0.76-0.79)	0.61 (0.59-0.62)	0.85 (0.81-0.88)
2014-2015	1 [Reference]	0.71 (0.70-0.73)	0.60 (0.58-0.61)	0.90 (0.86-0.94)	1 [Reference]	0.76 (0.74-0.78)	0.61 (0.60-0.63)	0.90 (0.86-0.95)

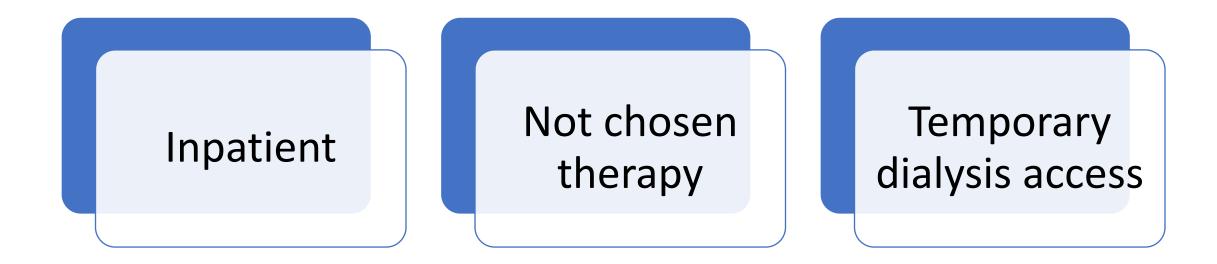
Abbreviation: OR, odds ratio.

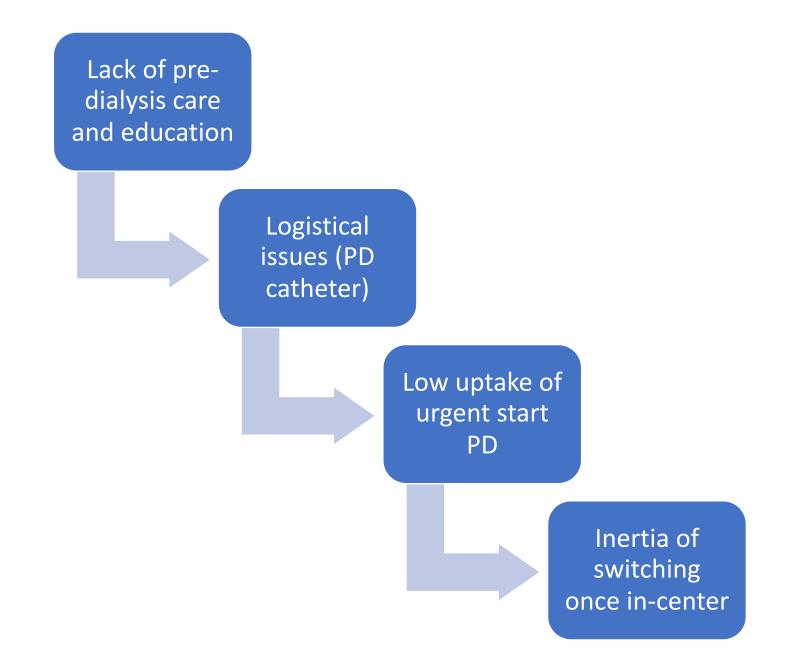
^a Adjusted for differences in age (continuous), sex (male or female), body mass index (calculated as weight in kilograms divided by height in meters squared; ≤30.0 or

>30.0), and end-stage kidney disease etiology (diabetes, hypertension, glomerular diseases, or other).

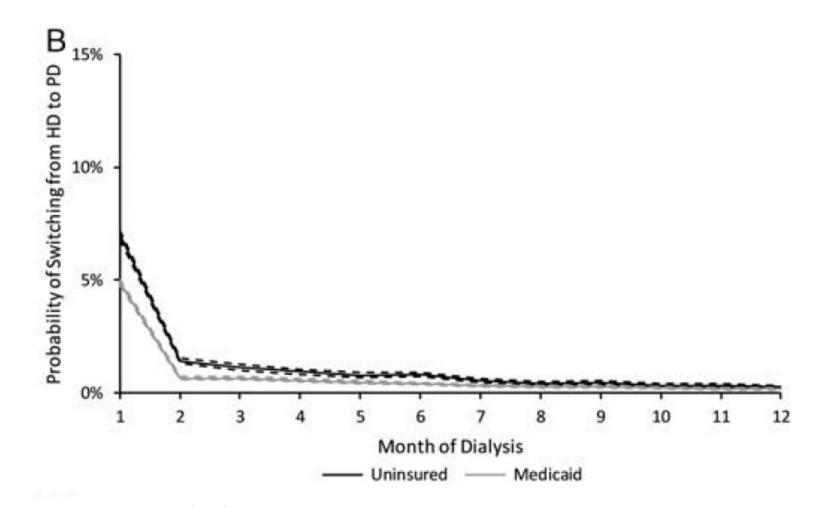
Racial and ethnic disparities in predialysis care did not improve from 2005 to 2015

Sub-optimal dialysis initiation



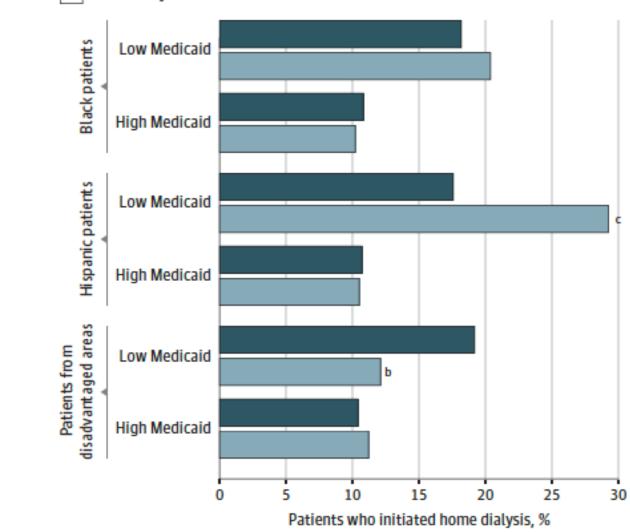


Dialysis inertia



Lin, E., Chertow, G., Bhattacharya, J. & Lakdawalla, D. (2020). Early Delays in Insurance Coverage and Long-term Use of Home-based Peritoneal Dialysis. *Medical Care, 58* (7), 632-642. doi: 10.1097/MLR.000000000000001350.

Patients from more disadvantaged backgrounds are less likely to start home dialysis

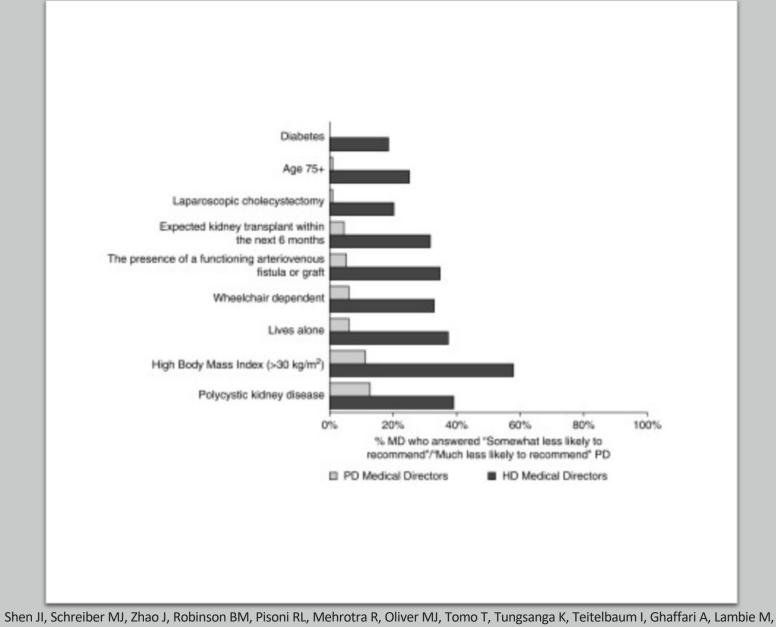


C Home dialysis initiation rate with stratification

Thorsness R, Wang V, Patzer RE, Drewry K, Mor V, Rahman M, Trivedi AN. Association of Social Risk Factors With Home Dialysis and Kidney Transplant Rates in Dialysis Facilities. JAMA. 2021 Dec 14;326(22):2323-2325. doi: 10.1001/jama.2021.18372. PMID: 34905040; PMCID: PMC8672226.

HD units without home options

- Less access to quality information/education
- Less staff training
- Less enthusiasm for home therapies



Shen JI, Schreiber MJ, Zhao J, Robinson BM, Pisoni RL, Mehrotra R, Oliver MJ, Tomo T, Tungsanga K, Teitelbaum I, Ghaffari A, Lambie M, Perl J. Attitudes toward Peritoneal Dialysis among Peritoneal Dialysis and Hemodialysis Medical Directors: Are We Preaching to the Right Choir? Clin J Am Soc Nephrol. 2019 Jul 5;14(7):1067-1070. doi: 10.2215/CJN.01320119. PMID: 31278114; PMCID: PMC6625627.

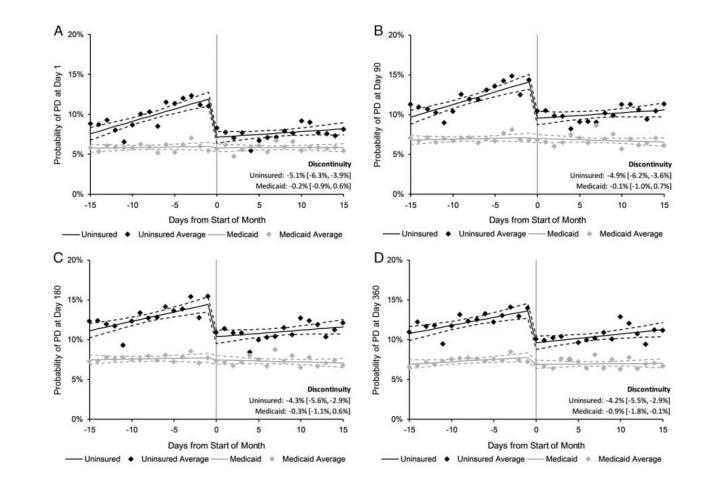
System



Policies penalizing facilities with socially disadvantaged patients

Insurance

- Medicare starts the same calendar month as PD initiation
- PD catheter only paid for if it is within the same calendar month as initiation
- Starting dialysis later in the month is associated with increased PD uptake



Lin E, Lung KI, Chertow GM, Bhattacharya J, Lakdawalla D. Challenging Assumptions of Outcomes and Costs Comparing Peritoneal and Hemodialysis. Value Health. 2021 Nov;24(11):1592-1602. doi: 10.1016/j.jval.2021.05.017. Epub 2021 Jul 30. PMID: 34711359; PMCID: PMC8562882.

The biggest barrier is honestly just the language barrier. You send somebody home, and I'm calling them, usually daily, to check in and how did treatment go last night... you're getting a translator on the line... But do they fully understand, because it's very specific medical terminology.



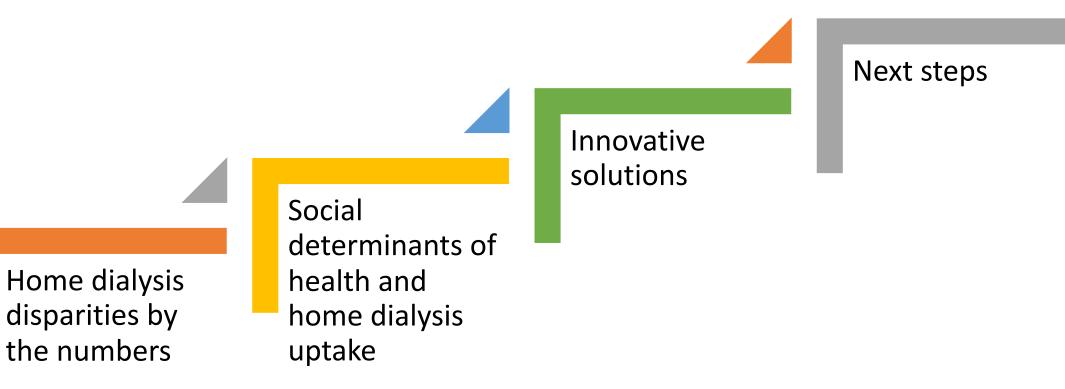
What to do with patients with barriers to home dialysis?

ERSD Treatment Choices payment model

Adjust payments to incentivize home dialysis



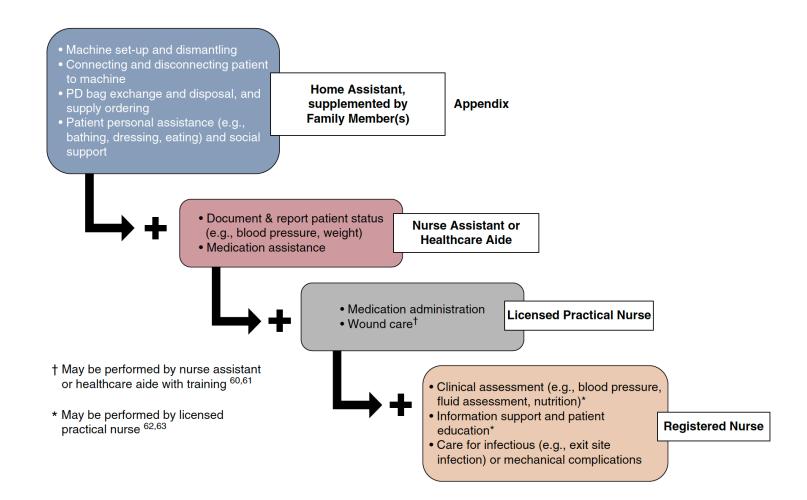
Outline



Caregiver support: patient-assisted PD

• Addresses:

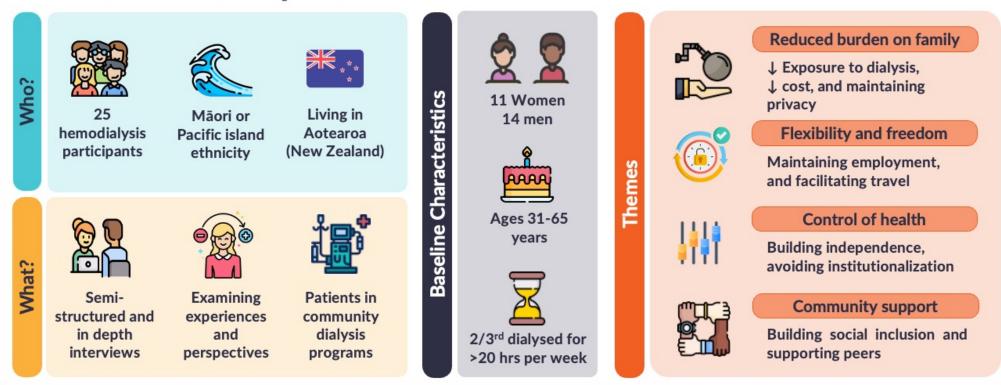
- Social isolation
- Lack of care giver support
- Transportation
- Different models to address a range of needs



Hofmeister, Mark; Klarenbach, Scott; Soril, Lesley; Scott-Douglas, Nairne; Clement, Fiona. A Systematic Review and Jurisdictional Scan of the Evidence Characterizing and Evaluating Assisted Peritoneal Dialysis Models. CJASN 15(4):p 511-520, April 2020. | DOI: 10.2215/CJN.11951019

Built environment: community home hemodialysis

What are patients' experiences of community house hemodialysis?



Conclusion: Community house hemodialysis is a modality that overcomes many of the socioeconomic barriers to home hemodialysis, is socially and culturally acceptable, and supports extended-hour hemodialysis thereby promoting more equitable access to best practice services. **References:** Walker et al. *Patients' Experiences of Community House Hemodialysis: A Qualitative Study*. 2019. 10.1016/j.xkme.2019.07.010.

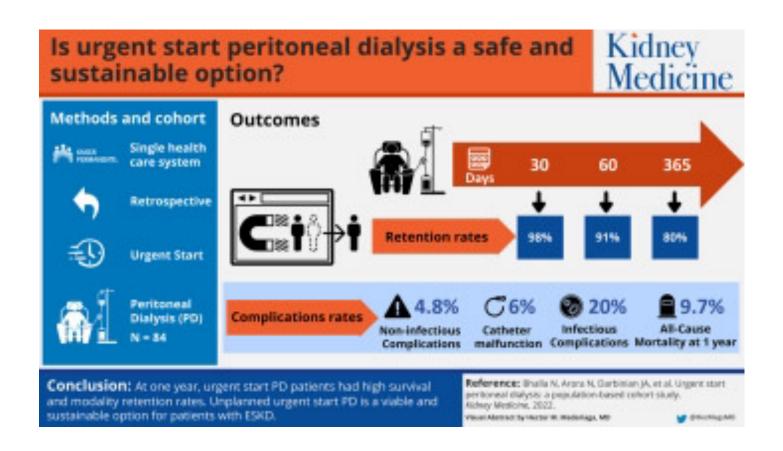
Visual abstract by Sharanya Ramesh MD PhD



Start on home: Urgent-start PD

Requires:

- Capacity for outpatient care of low-volume PD exchanges
- Adequate nursing staff to supervise low-volume PD exchanges
- Process in place for urgent
 PD catheter insertion
- Dedicated outpatient home dialysis clinic
- Dedicated PD coordinator for the above processes



Suggestions for policy improvements



IMPROVE DOCUMENTATION OF SOCIAL DETERMINANTS OF HEALTH INCORPORATE PAYMENTS ON BASIS OF SOCIAL DETERMINANTS OF HEALTH LEVERAGE INCENTIVES FROM ETC TO DEVELOP INNOVATIVE APPROACHES TO CARE EQUITY

Reddy YNV, Tummalapalli SL, Mendu ML. Ensuring the Equitable Advancement of American Kidney Health-the Need to Account for Socioeconomic Disparities in the ESRD Treatment Choices Model. J Am Soc Nephrol. 2021 Feb;32(2):265-267. doi: 10.1681/ASN.2020101466. Epub 2020 Dec 30. PMID: 33380524; PMCID: PMC8054896. Figure 1. Barriers and Potential Solutions to Racial and Ethnic Disparities in Home Dialysis Care

Barriers	Physical Conditions	Social Conditions	Healthcare Systems	Health Care Policy	
	 Space Issues Unstable housing Access to dialysis units with home dialysis High "socially disadvantaged" dialysis units 	 Financial barriers Transportation (for those living far away from a home unit) Lack of caregiver support Poor health literacy 	 Lack of pre-dialysis care Lack of modality education Lack of high-quality language interpretation Discrimination in healthcare Suboptimal dialysis starts Lack of pre-dialysis insurance Poor nephrologist familiarity with home therapies 	 Penalization of facilities caring for socially disadvantaged patients Proposed exclusion of beneficiaries with social barriers from alternative payment models 	
Stakeholders	P	atients Providers	Healthcare organizations Policy	r makers	
Solutions	 Community house HD Fund assisted PD Home visits/telehealth 	 Patient financial incentivization Home/telehealth visits Fund assisted PD Peer mentoring/navigation Culture/language concordant education 	 Improve access to pre-dialysis nephrology care Culture/language concordant care and education Urgent start PD programs Provider financial incentives Improve trainee education in home dialysis 	 Disparities-sensitive quality measures Social risk factor adjustments Social needs screening Payment adjustments for social determinants Leverage incentives to address social needs Study policy effect on racial disparities 	

Rizzolo K, Cervantes L, Shen JI. Racial and Ethnic Disparities in Home Dialysis Use in the United States: Barriers and Solutions. J Am Soc Nephrol. 2022 Jul;33(7):1258-1261. doi: 10.1681/ASN.2022030288. Epub 2022 Apr 19. PMID: 35440500; PMCID: PMC9257804.

Takeaways

Racial and ethnic disparities are due to the complex interplay between social determinants of health affecting access to care on the patient, provider, and system level

Equity in home dialysis care requires a multifaceted and innovative approaches to improve barriers at every level

Thank you!

Questions