Improving Referral to Home Dialysis Modalities

SKC In-service

Jan 2018

What does a patient need to be able to do dialysis at home?

1) Dialysis Access

2) Home

Home Modalities

- Peritoneal Dialysis
  - CAPD
  - APD
- Home Hemodialysis
  - Standard
  - Short / frequent
  - Nocturnal

The History

- Jan 1 1962 – Seattle Kidney Center (3 beds)
- Admissions and Policy Committee
- 1963 – Scribner & Babb developed proportioning system allowing 15yr old patient to go home
- 1966 – Most patients went home
- 1972 – 90% of patients (130) dialyzing at home
- 1973 – Medicare ESRD Program

Blagg. Seminars in Dialysis. 2011

When Congress Intervened

- Nationwide 10,000 patients on dialysis
  - 4,000 were on home dialysis (mostly home hemo)
- After the program started:
  - Patients could rent or buy the machine 80% repaid to the patient by medicare in 24 payments over 2 yrs. Delivery/installation/maintenance not covered.
  - Suppliers billed 20% copay to patient
  - Some supplies not included: alcohol wipes, tape, bandages not regarded as required for "the effective operation of a home dialysis machine"
  - Physicians not reimbursed for patients dialyzing at home, not reimbursed for training (only payment was for routine office checkups and hospitalizations)
  - Facility not reimbursed for the support of these patients
  - 3-month waiting period before Medicare kicked in and patients went to center first
  - Reimbursement for home training inadequate, facility reimbursement was very generous.
- Bureau of health Insurance fixed some problems of funding supplies in 1974

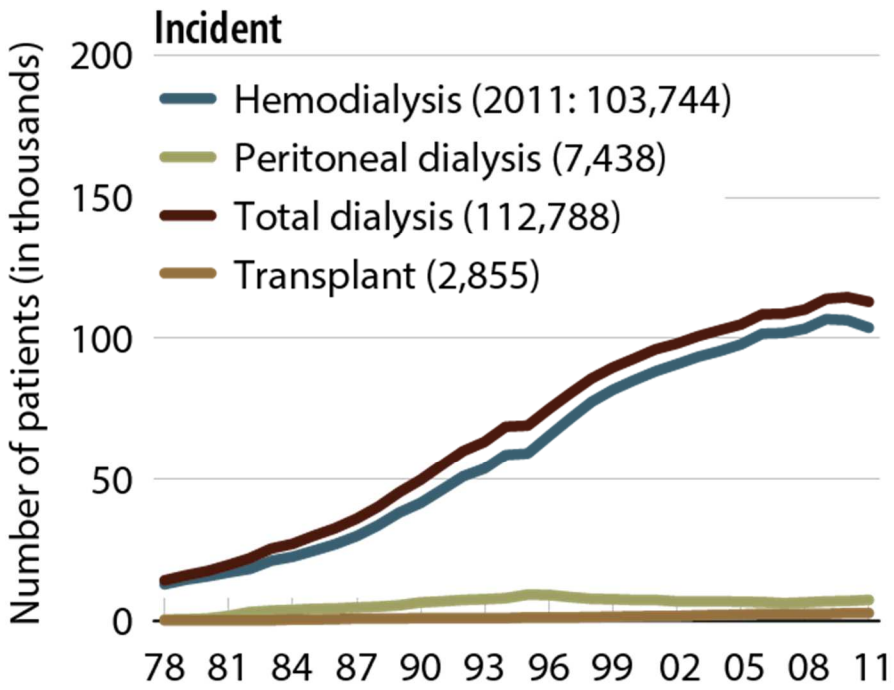
Blagg. Seminars in Dialysis. 2011

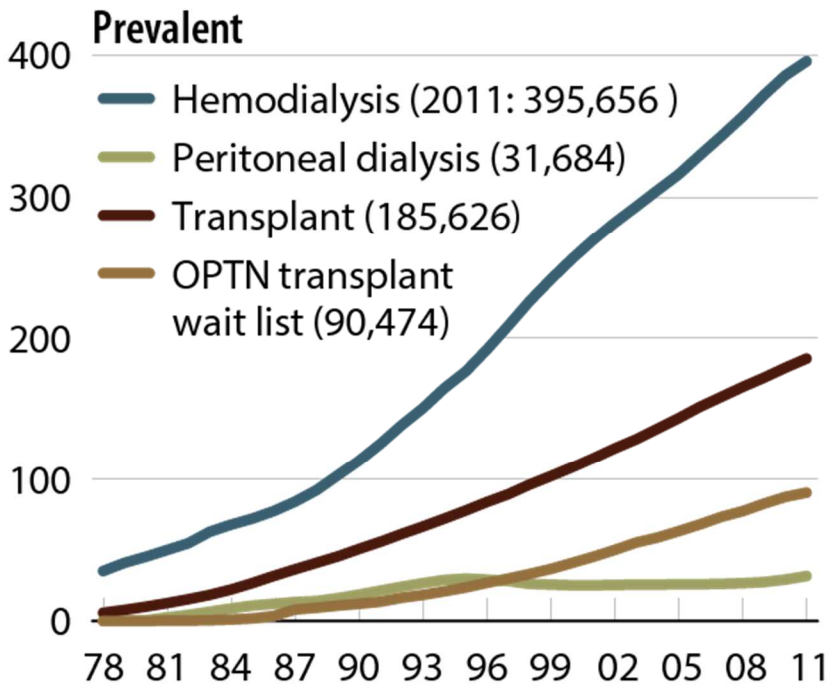
Even So…

- By June 1978, percentage of patient on home hemodialysis decreased to 10%
- With entitlement hemodialysis offered to many sicker patients (DM, elderly, frail)
- 1978 Public Law 95-292, established 100% reimbursement to facility for supplies / equipment and 75% of the in-center reimbursement for treatments
- 1981 Omnibus Budget Reconciliation Act – established the composite rate, equal payment per treatment in center and at home (expected to promote home therapies)
- 2008 Medicare Improvements for Patients and Providers Act – Expanded bundle, includes adjustments for training ($20 per home training session and $13 per PD session, allowing 25 sessions for home HD and 15 for peritoneal) Increased payments for dialysis in first 4 months and medicare starts paying on day of first dialysis.

Blagg. Seminars in Dialysis. 2011

Where we are now…

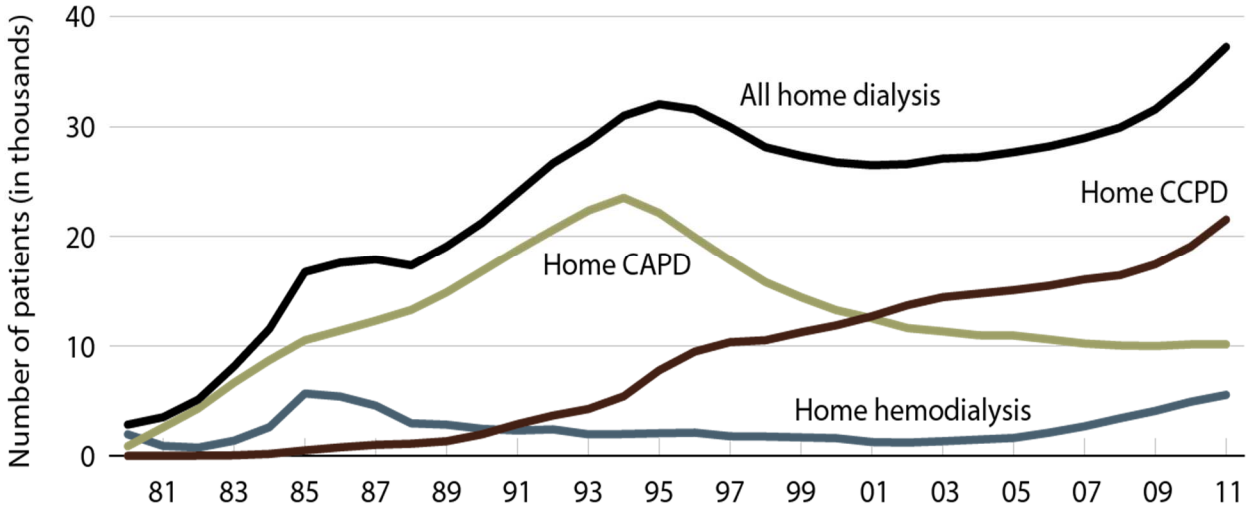




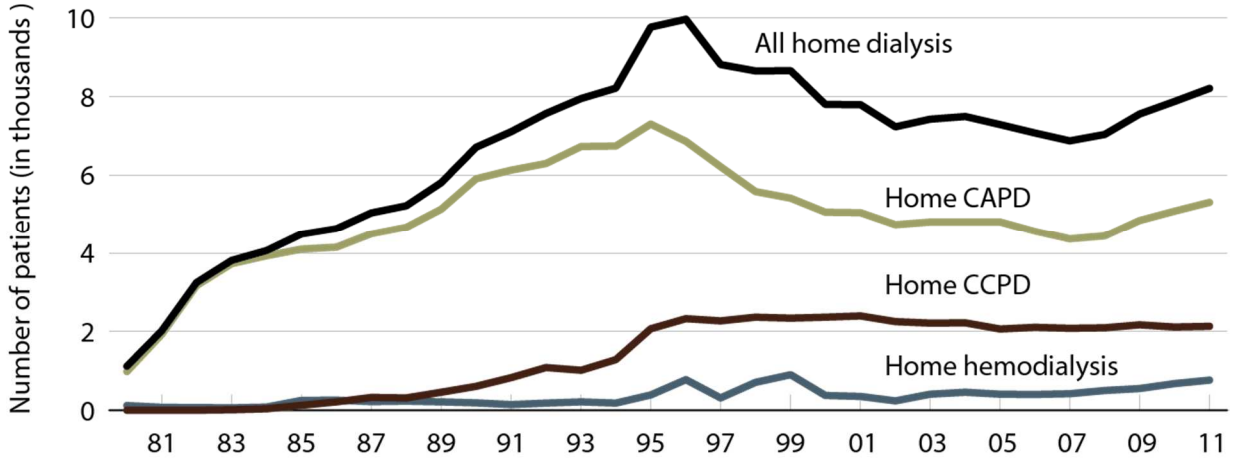
USRDS 2013

Where we are now…

Prevalent

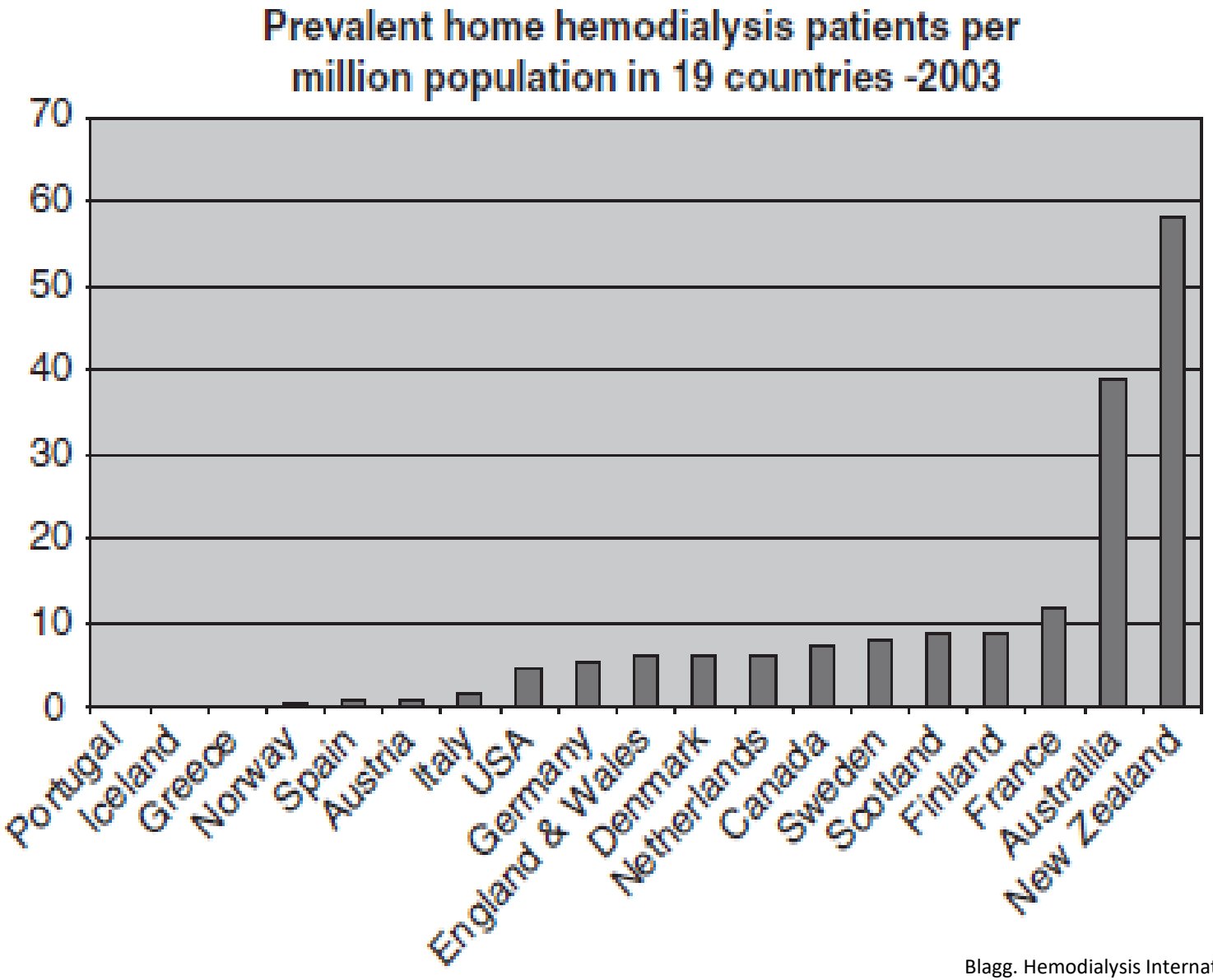


Incident



USRDS 2013

What about the rest of the World?



Blagg. Hemodialysis International 2008; 12:S2–S5

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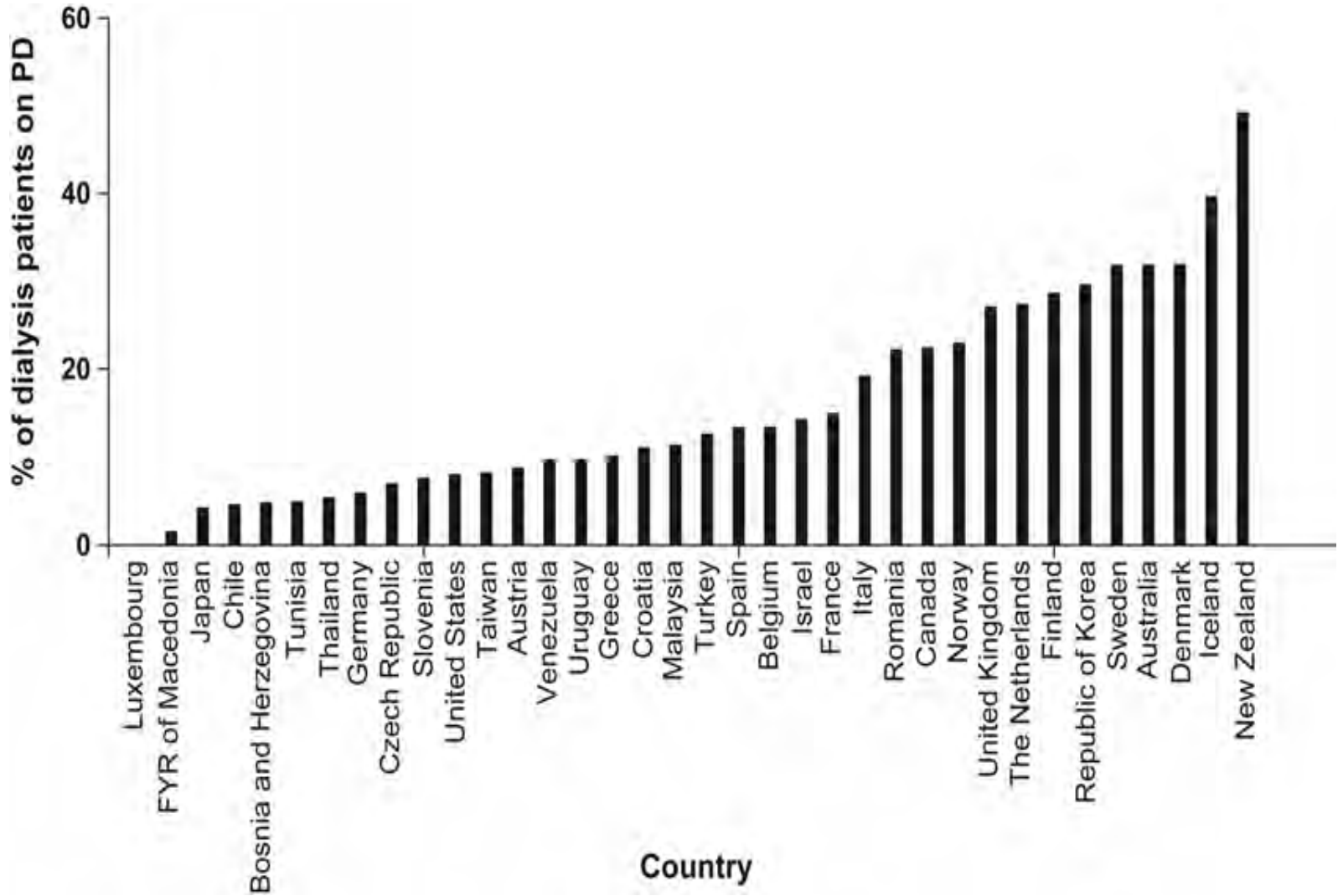


Moniek. Nephrol Dial Transplant (2013) 28: 1264–1275

Observational Benefits of Home Dialysis

- Lower risk of death
- Improved Blood Pressure Control
- Higher Health-Related Quality of Life
- Greater Opportunity for Rehabilitation and Employment
- Cost Effective

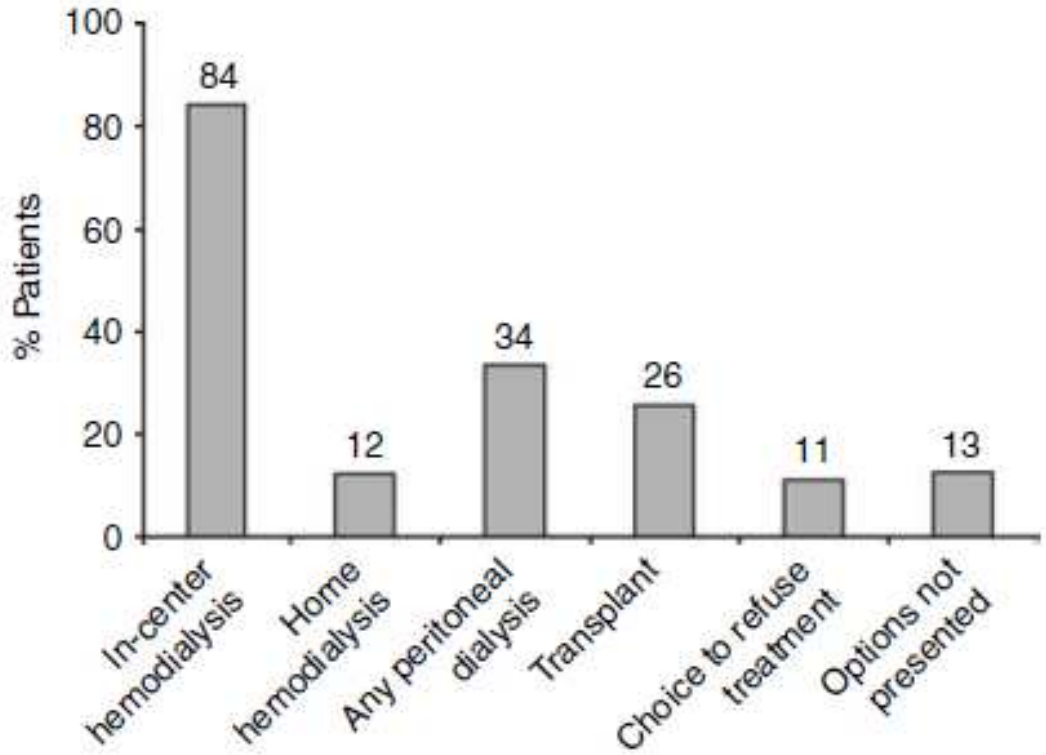
Other Benefits

- Greater small molecule solute clearance
- Greater phosphorus clearance
- Greater β-2 Microglobulin clearance
- Regression of LVH
- Improved nutrition
- Frequent treatments are best delivered at home

FHN Trial: > ¼ of patients dropped out of 6 x weekly in-center arm

Reasons for low utilization of home modalities

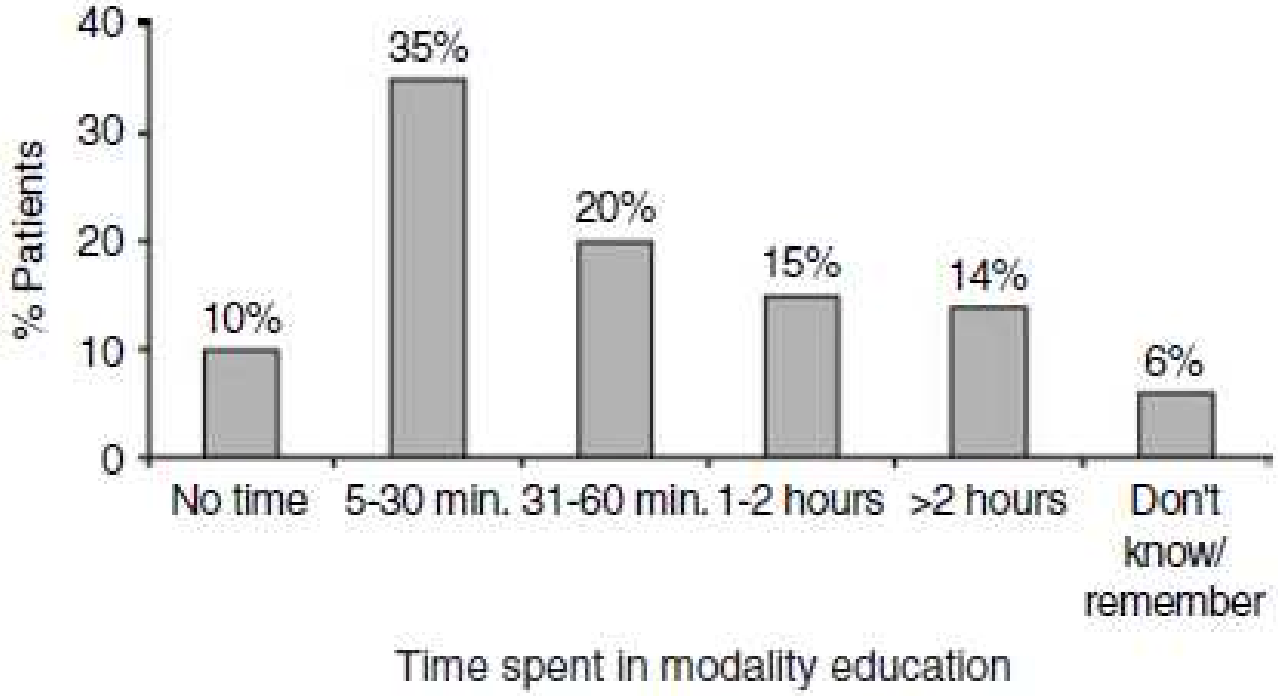
- "Silent Barrier" – Patient Education
- "Which of the following options were initially offered to you as possible methods of treatment?"



Mehrotra. *Kidney International, Vol. 68 (2005), pp. 378–390*

“Silent Barrier”

- “How much time would you say you spent in total, discussing your treatment options with a healthcare professional?”



Mehrotra. *Kidney International, Vol. 68 (2005), pp. 378–390*

Breaking the “Silent Barrier”

- High Quality Education (Teachers)
- Patient Participation / Involvement (should not be a passive process)
- Assess patient comprehension
- Spend enough time!

Patient Barriers

- Lack of interest
- Fear of change
- Lack of self-confidence
- Concerns about sub-standard care
- Belief that patients should not do self-care
- Concerns about caregiver burden
- Fear of self-cannulation
- Fear of a catastrophic event
- Fear of machine

Patient Perspectives

Pro

- Greater Freedom
- Better Lifestyle
- More Control
- Increased involvement in care
- Reduced Dependence
- Accomodates desire to work
- Reduced travel to HD unit
- Cost-effective

Con

- Fear
  - Substandard care
  - Lack of supervsion
  - Social isolation
  - Lack of motivation
  - Fear of change
  - Caregiver burden
  - Lack of social support

Table 1. Reasons Patients Do Not Choose Self-Care Dialysis

Domain	Problem	Patients Agreeing or Strongly Agreeing (%)
Knowledge	Lack of awareness of self-care	12
	Lack of explanation of self-care	60
	Lack of understanding	36
	Lack of awareness of availability in other languages	6
Attitudes	Patient should not be involved in care	32
	Patient should not be unsupervised	53
	Lack of self-efficacy in training	38
	Lack of self-efficacy in performing self-care	50
	Lack of motivation to be involved in care	38
	Fear of change in general	32
	Fear of changing type of dialysis	39
	Inertia to change	20
	Fear of substandard care	40
	Fear of social isolation	54
	Risk of missing transport	12
	Inconvenience of having to stay awake on dialysis	25
	Interference with home life	36
Skills	Visual impairment	30
	Hemodynamic instability during hemodialysis	29
	Significant intradialytic symptoms	26
	Memory difficulties	20
	Impaired manual dexterity	28
	Time constraints preventing self-care training	26
	Time constraints preventing performance of self-care	28
	Needle phobia	47
	Lack of space at home	42

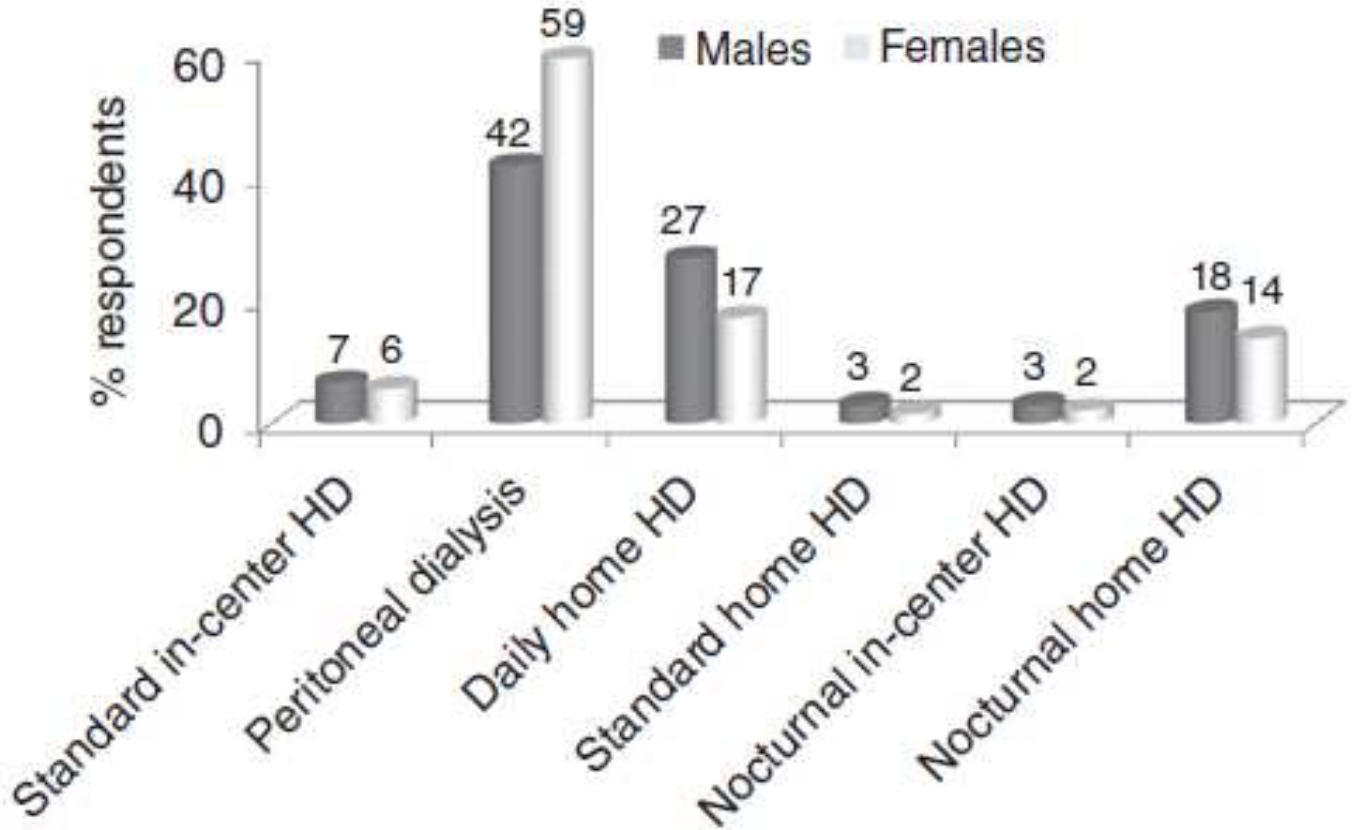
McLaughlin. American Journal of Kidney Diseases, Vol 41, No 2(February), 2003: pp 380-385

Breaking Patient Barriers

- Education
- Encouragement
- Nurse-directed cannulation training
- Home monitoring programs
- Social support
- Financial support

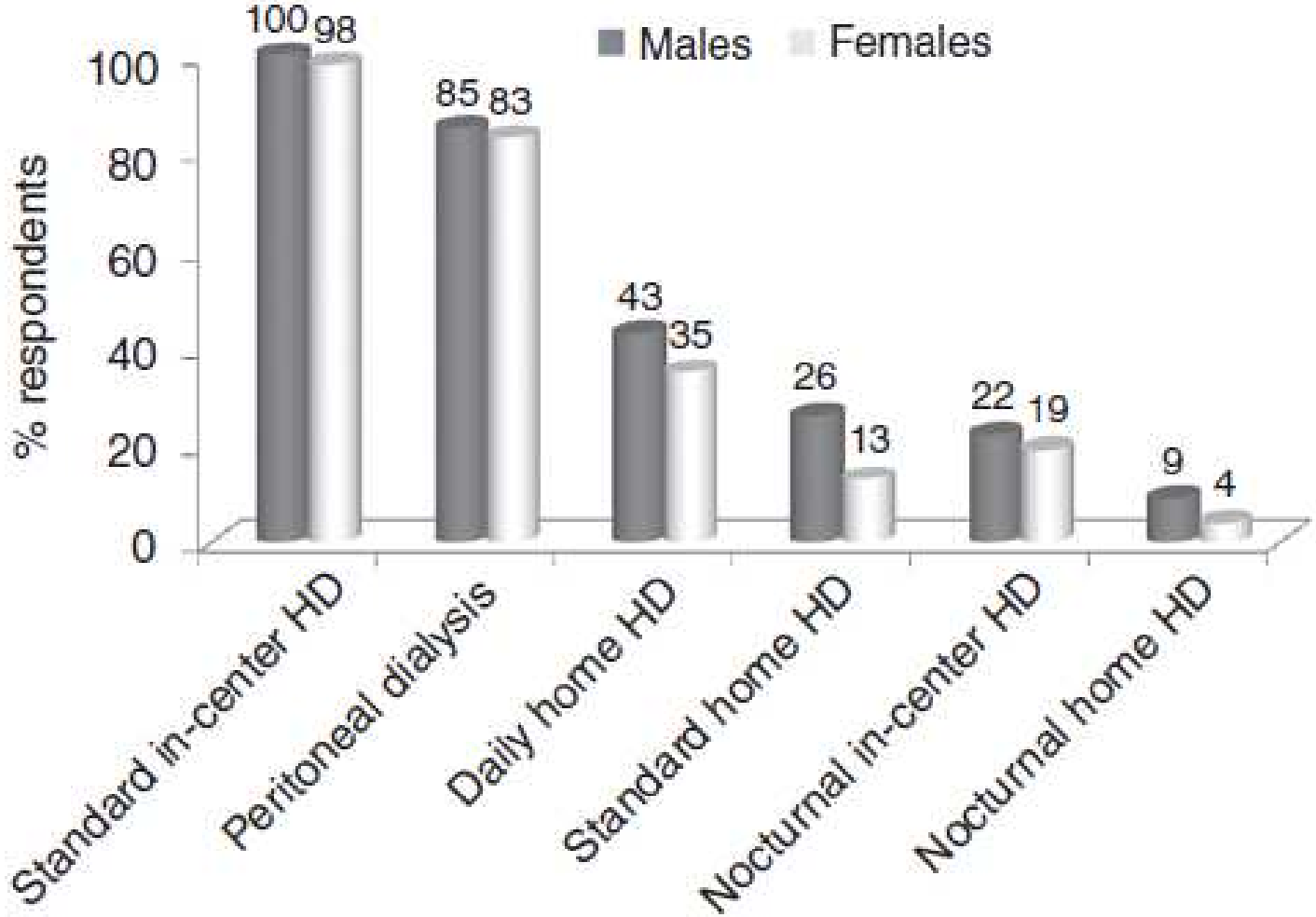
Provider Factors

- What modality would you choose for yourself?



Merighi. Hemodialysis International 2012; **16**:242–251

Provider Experience



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Training education gap, HD emphasis

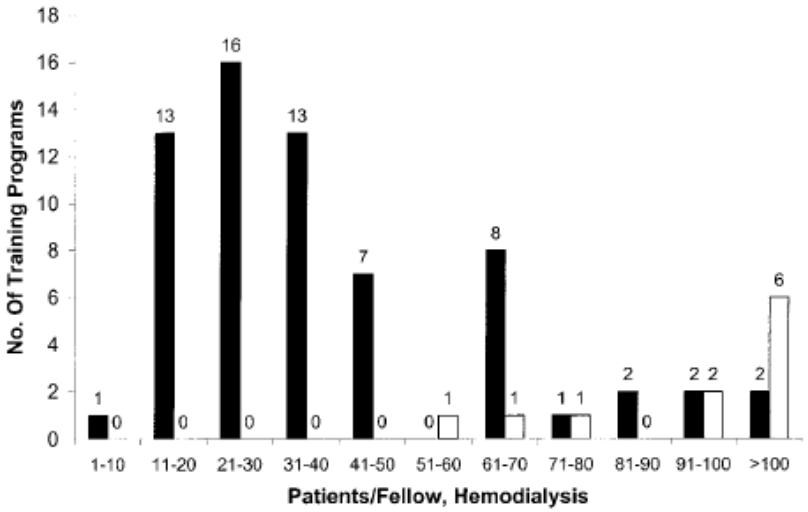


Fig 1. Frequency distribution of patients undergoing MHD per fellow enrolled in training programs responding to the survey in the United States (■) and Canada (□).

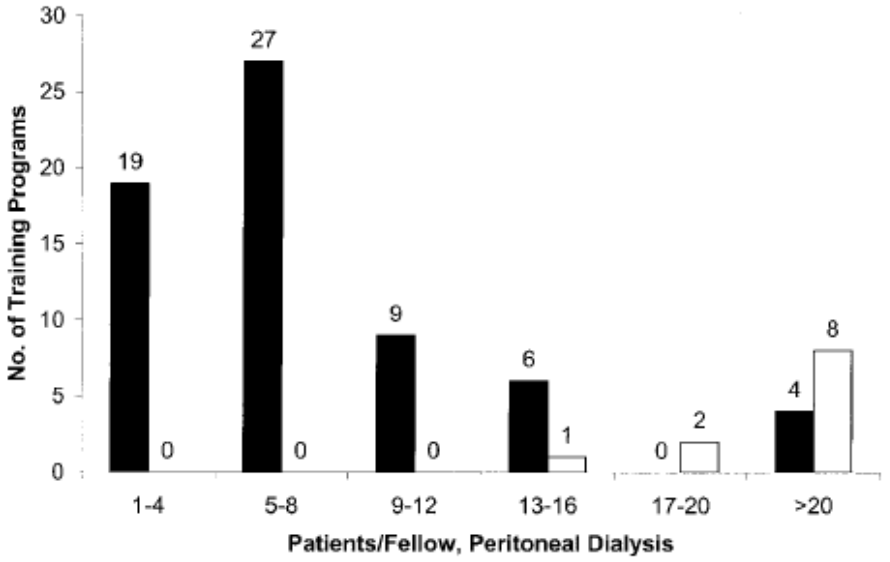


Fig 2. Frequency distribution of patients undergoing CPD per fellow enrolled in training programs responding to the survey in the United States (■) and Canada (□).

Training Bias

Table 3. Time Spent in Various Aspects of Training in Nephrology in Training Programs in the United States and Canada Estimated by Training Program Directors

	US (n = 63)	Canada (n = 10)	*P*
Acute care (%)	30 (10-50)	20 (10-40)	0.002
MHD management (%)	20 (5-55)	21 (5-55)	NS
CPD management (%)	5 (0.5-20)	10 (5-30)	0.003
Transplant management (%)	15 (3-30)	20 (12.5-30)	NS
CRI management	15 (5-35)	10 (5-20)	NS
Other	10 (0-42)	12.5 (0-44)	NS

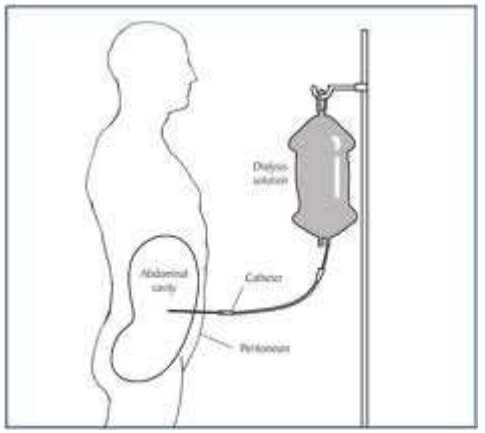
NOTE. Values expressed as median (range).

Abbreviations: CRI, chronic renal insufficiency; NS, not significant.

Mehrotra. American Journal of Kidney Diseases, Vol 40, No 1 (July), 2002: pp 152-160

Provider Barriers

- Outdated paradigm → "HD or PD?"



- Better paradigm:
  1) Kidney Replacement Therapy vs. Conservative Care
  2) Pre-emptive transplant vs. Dialysis
  3) Home vs. In-Center Dialysis
  4) PD vs. HD

Golper, Schreiber

Cost of Home HD

- Worldwide studies show 20-50% reduction in cost

- Lower transportation costs
- Less time away from work
- Lower medication costs

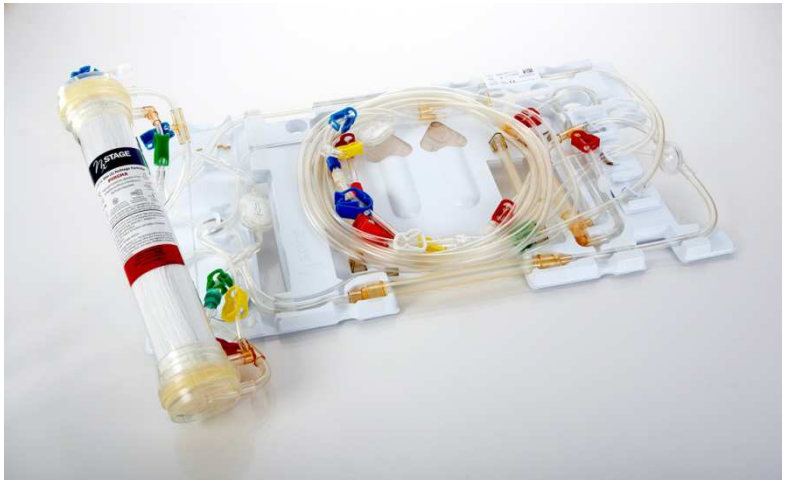
- Reimbursement for training
- Same monthly payment as 2-3 visits for in-center
- Can receive payment if patient misses appointment for face-to-face visit
- Increased geographic area of referrals

- Same per treatment reimbursement as in-center
- Additional reimbursement for training after 120 days on dialysis
- Ability to use fewer of costly medications
- Potential to expand census of center with trivial or no increase in infrastructure

Mechanical Complexity

- Conventional Machine (Fresenius 2008 K @home)
  - Set up and take off
  - Increased training time
  - Water requirements
  - Increased supplies
- NxStage Machine
  - Drop in cartrige, automated prime/rinseback
  - Dialysate bags or pureflow

NxStage



Difference between NxStage and Conventional dialysis

- NxStage is limited by amount of dialysate it can produce
- Water efficient dialysis (Qd ~100-200)
- Dialysate volume, flow fraction, Qb prescribed
- Time is based on how long it takes to use fluid
- Usually run 5-6 times weekly
- Run times 2.5-3.5 hrs
- Dialysate in pre-formed bags or using pure flow system takes about 8 hours to make