WELCOME *To the*

2026 SYMPOSIUM

USA - State of Dialysis Access

Access Excellence.

MAY 20-22, 2026 • HILTON SALT LAKE CITY CENTER • SALT LAKE CITY, UTAH

4-S Modell (Paul Farmer)

Failure of medical system in developing countries due to lack of Staff, Stuff, Space and Systems



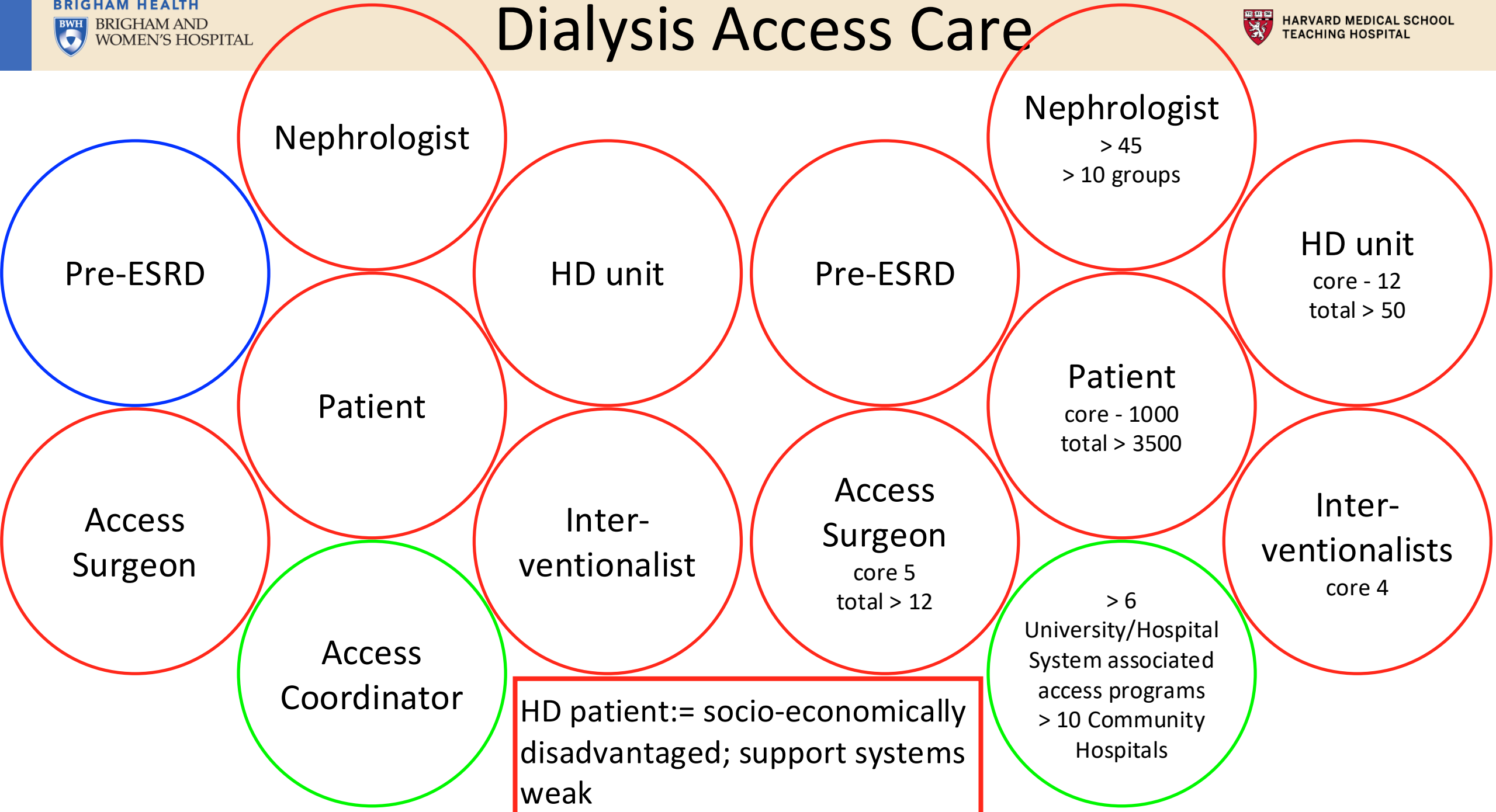
Dialysis Access = Developing Country

- questionable surgical outcomes (nationally)
- "wild west" of endo-vascular maintenance
- Highly variable HD unit cannulator skills

- What is needed:
  - Staff - physician and nurses
  - Stuff - IV fluids, medications, protective gear…
  - Space - hospitals, isolation wards
  - Systems - how to find an infected person, transport to treatment center, logistics of supply and handling trash, etc.

- What is needed:
  - Staff - dedicated surgeons/interventionalists; RNs; access coordinator
  - Stuff - AP balloons, stents, stent grafts, etc.
  - Space - procedure rooms for add-on endo-/open-cases
  - Systems - f/u plan; minimize thrombectomies; access planning; revision pathways

Dialysis Access Care



Incentives (in flux)

ESRD Quality Incentive Program

- Up to 2% Medicare withholding
- Measures include
  - TDC rate
  - Transition to non-catheter access at 90 days
  - Missed treatments/hospitalizations



I just heard from the xy dialysis unit that I lowered their TDC rate from 48% to 15% since I started.

My Nephrologists require that I place grafts so that their patients stay in the 90 days CMS window.

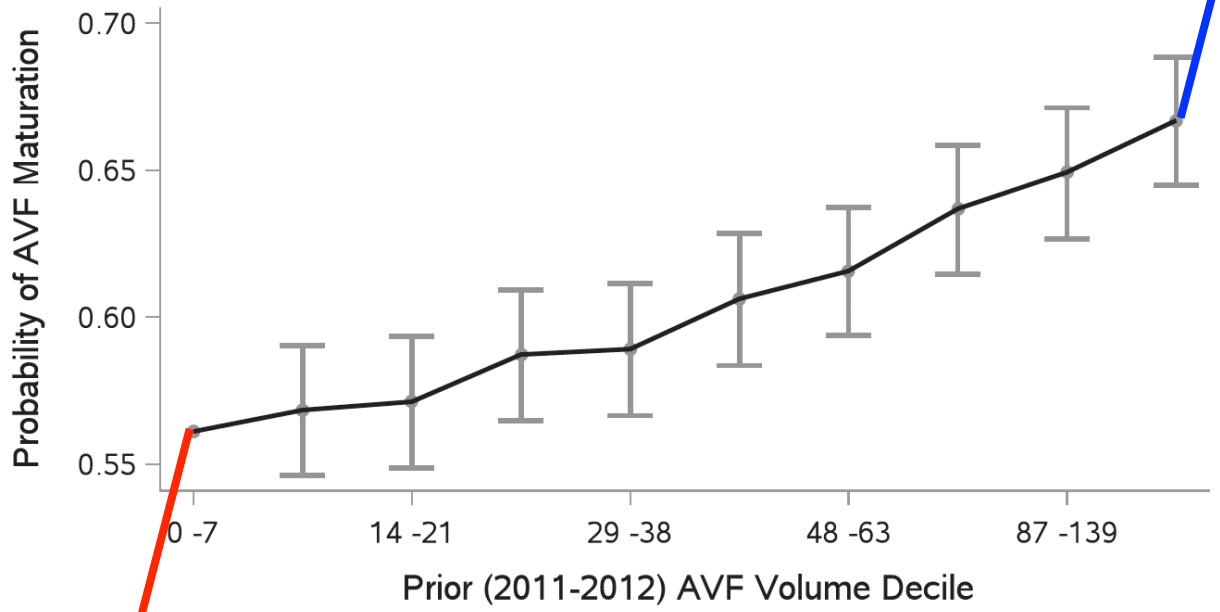


Not all surgeons are (created) equal

Case Volume correlates with Successful Maturation **(Shahinian AJKD 2020)**

85 %

top 9.7 %



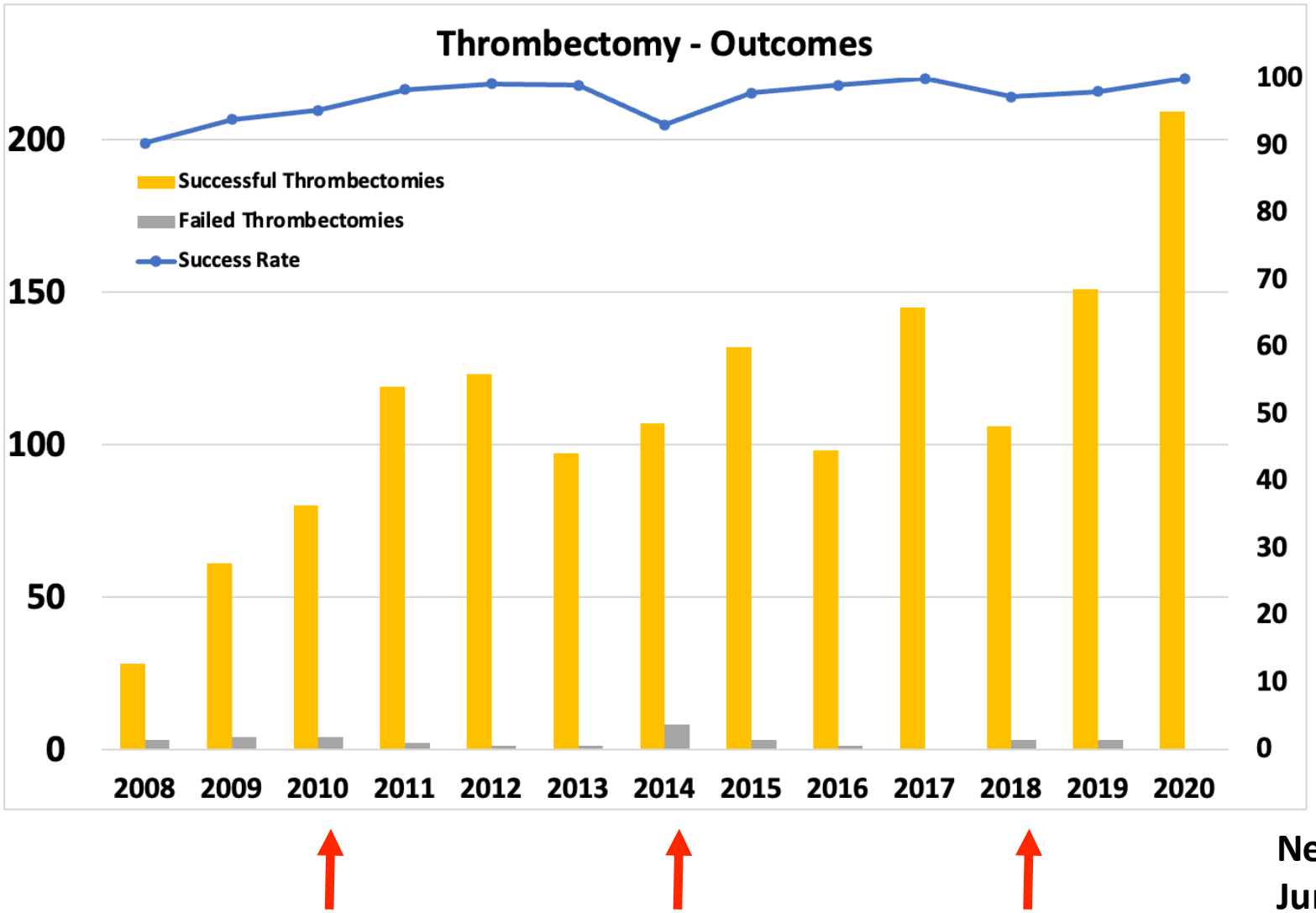
Endovascular Interventions
Do NOT
Fix Surgery

bottom 6.9 %

23%

- **2,770 surgeons who placed > 5 AVFs in 2013 and 2014, total 49,826 AVFs in CMS patients**
- **Maturation Success does not plateau**
- **Extremes: top 243 (9.7%) surgeons 85%, bottom 174 (6.9 %) 23 % success rate, ~ 1,500 surgeons < 5 AVF/y**
- **Important to know:**
  - **→2016 - 1,251 surgeons placed more than 10 access (AVG or AVF), total 32,767 accesses**
  - **→2016 - 3,071 surgeons placed an additional 27,035 accesses**

Training and Experience matter



New Fellow with Junior Attending year

Site and Operator Requirements

Surgical Category	Mandatory Institutional (Hospital) Minimums	Individual Surgeon / Interventionalist Minimums	CMS Outcome & Performance Benchmarks
Transcatheter Aortic Valve Replacement (TAVR)	**Existing Program:** >=50 total Aortic Valve Replacements (AVRs) per year (including >=20 TAVRs), OR >=100 AVRs every 2 years (including >=40 TAVRs). **New Program:** >=50 open-heart surgeries in the prior year and >=20 aortic valve procedures within the past 2 years.	Must meet specific training credentials and participate as part of an active, multi-disciplinary "Heart Team".	* **Mandatory Data Registry:** Complete submission of consecutive cases to the STS/ACC TVT Registry. * **Quality Benchmarks:** Expected 30-day all-cause mortality <= 15% and 30-day stroke/neurologic events <= 15%. * **Follow-up:** >=90% institutional follow-up at 1 year.
Transcatheter Mitral Valve Repair (TMVR / TEER)	**Surgical Program:** >=25 total mitral valve surgical procedures per year (with >=10 being formal repairs). **Cath Lab Volume:** >=1,000 total catheterizations per year (including >=400 PCIs).	**Operating Interventionalist:** >=50 structural heart procedures per year.	* **National Registry Alignment:** Complete tracking via the STS/ACC TVT Registry. * **Performance Benchmark:** Procedural outcomes for baseline coronary operations must align with or beat National Cardiovascular Data Registry (NCDR) national benchmarks.

Site

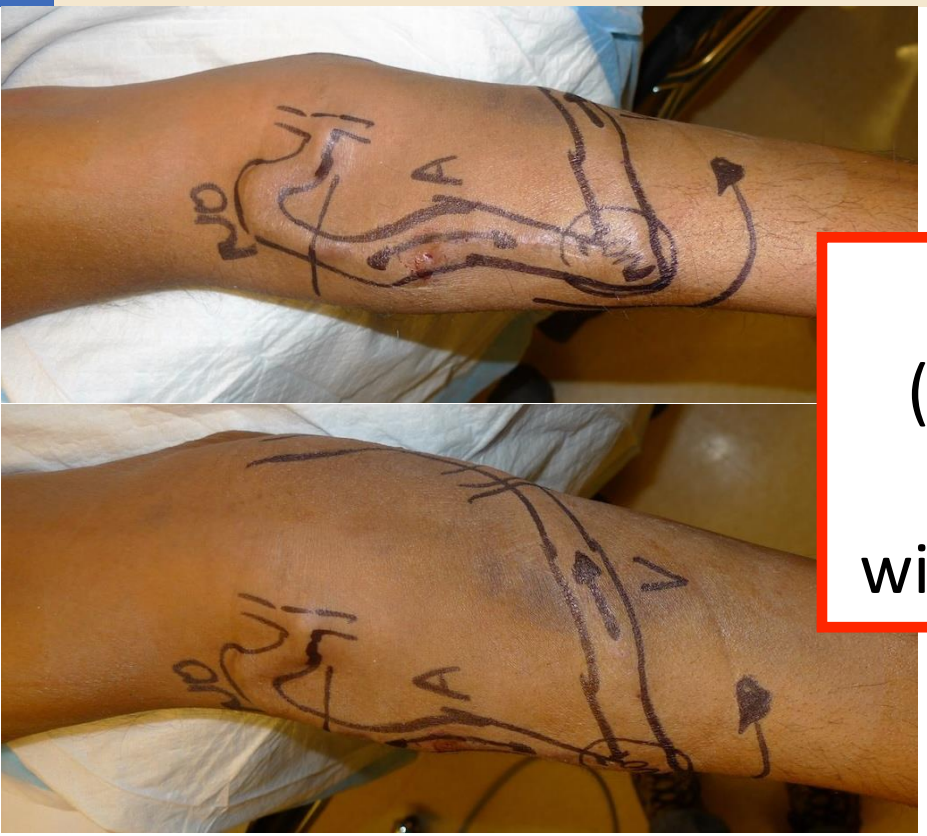
Operator

Outcomes

Dialysis Access

Provider Category	Mandatory Institutional (Hospital) Minimums	Individual Surgeon / Interventionalist Minimums	CMS Outcome & Performance Benchmarks
Endo-IN	**New Program:** >=500 procedures per year; >= 1.0 FTE interventionist	AVG - 25 PTA, 25 Thro AVF - 10 PTA, 5 Throm TDC - 10 insertions Stents - 10 deployed Sidebranch - 5 ligated Port-a-cath - 5 insert	* **Mandatory Data Registry:** no * **Quality Benchmarks:** no * **Follow-up:** no

Let a thousand flowers bloom…



- Autogenous Access types
  - Forearm radial-cephalic

Brachial-cephalic autogenous access (upper arm cephalic vein occlusion; retrograde forearm cephalic flow) with forearm basilic to cephalic vein transposition

- Non-autogenous Access types
  - ePTFE
  - Biografts
  - PTFE with cannulation pods
  - Bio-absorbable mounted to stent backbone
  - Human cell derived conduits
  - …. (growing)

Final Frontier - Cannulation





PCT (Patient Care Technician) Training

- FMC - 12 weeks
  - → Dialysis Access evaluation 1 of 23 listed competencies that include facility cleaning, record keeping, …
- Davita - needs CCHT certification [Certified Clinical Hemodialysis Technician]

Dialysis Technician Program (CCHT exam qualifying program)

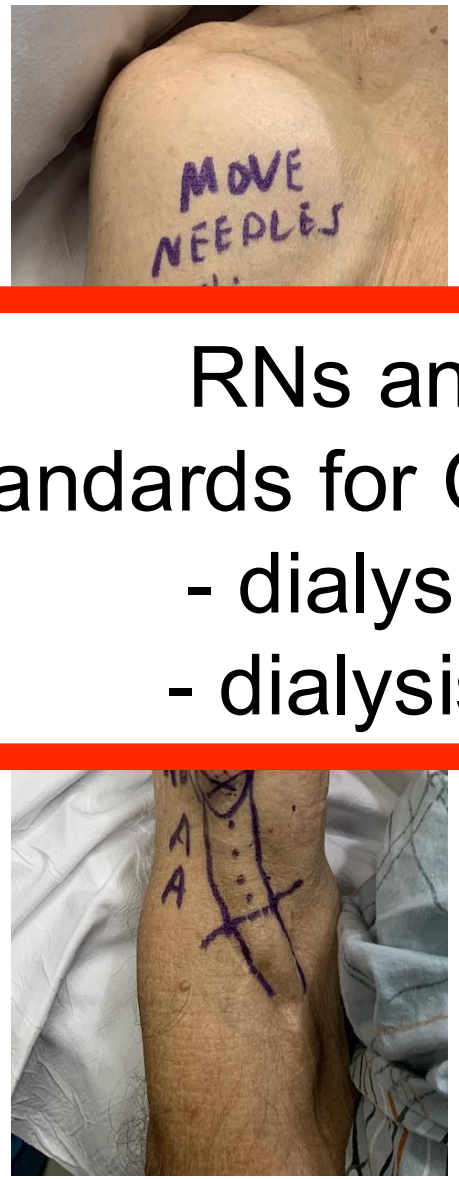
- 120 hours (15 weeks) course work; e.g. 4 hours each Tuesday and Thursday
- 120 hours internship

BONENT - CHT Exam (Certified Hemodialysis Technologist/Technician)

- Specific content: "Evaluate Access"

Final Frontier - Cannulation





Nursing requirements for hire

- FMC - no dialysis experience
  - → 9-12 weeks structured program for RNs with other clinical experience

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- → CDN - certified dialysis nurse : 2000 hrs experience
- BONENT (Board of Nephrology Examiners Nursing & Technology)
  - → CHN - certified Hemodialysis nurse: Test with 5 pages of topic NONE on exam of HD access

RNs and Technologist lack
Standards for Competency with regard to:
- dialysis access exam and
- dialysis access cannulation

System Redesign

Cannulation

	Leveled Certification for cannulators: Education on access types, flow direction, needle use
Bronze	TDCs and mature accesses with established cannulation patterns; nl PE
Silver	accesses in use with segments to expand needle insertion sites; abnl pulsatility; thrill in unusual position
Gold	new accesses for initial cannulation and establishment of rope ladder patterns; identifies sidebranches/poor augmentation; aneurysm evaluation for skin and thrombus
Platinum	US assisted cannulation and evaluation of Problem accesses; US depth, sidebranches, thrombus

System Redesign

Surgeon

	Regional Centers with:
i.	> 125 new access creations/year
ii.	> 250 revision surgeries/year
iii.	Lead surgeon > 80 new accesses/year
iv.	Trainee: 25 new creations, 50 revisions

Registry for dialysis access

Reporting	Mandatory reporting: artery, vein location of cannulation segment
Outcomes	Longitudinal f/u with access ID# (Payment tied to ID#)
Payment	CMS payment withhold 2-5% until benchmarks reached; 1-2% bonus if training successfully completed at Regional Center

Policy Advocacy and Clinical Guidelines

Policy

- RVU value for Dialysis Access Procedures (VascSx: Access vs Aortic practice)
- Registry through CMS (public healthcare for ESRD is the law)
- Develop Incentives for Longitudinal f/u
- Develop system for access tracking (Access ID# etc.)

Guidelines

- What is minimum monitoring/surveillance requirement?
  - Annual flow volume
  - Longitudinal image capture to follow aneurysm, skin, etc.
- Clinical pathway development by expert societies for adoption in training
  - Hand pain
  - Aneurysm evaluation and treatment
  - Many others….

Thank you all for attending VASA 2026 !!!

See you at VASA Practicum 2027

Slide Title

- Bullets

- Bullets