

Reducing Long-Term Catheters

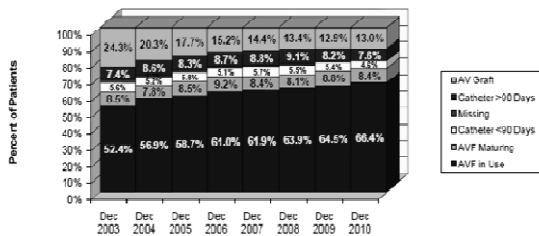
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 October 13, 2011

CMS Disclaimer

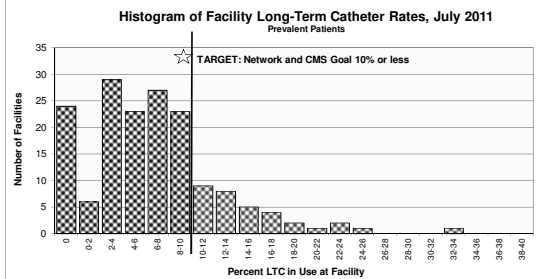
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The Last Eight Years

Distribution of Hemodialysis Access Types, NWRN, 2003-2010



Network Distribution LTCs



1. Early Referral for AVF

- Need to identify a way to institute a more rapid referral system
 - ~ between PCP and nephrologist
 - ~ between nephrologist and surgeon
 - ~ between surgery and referral
- Need to update the payment system to include chronic kidney disease
- RESULT: More AVFs, less CVCs, decreased complications, better adequacies

Research from the CPMs

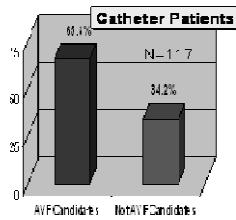
Predictors of central venous catheter use at the initiation of hemodialysis

- 24% more likely to be female
- 38% more likely to have ischemic heart disease
- Two-fold higher risk with pre-ESRD hypoalbuminemia (<3.5 g/dL)
- 29% more likely to have hemoglobin < 11 g/dL
- Obesity – 24% less likely

Wasse, et al. 2008, Seminars in Dialysis, 21(4): 346-351.

Assessment of Accesses

- Study of 117 patients
- Evaluated catheter patients as AVF candidates
- 65.8% of patients had vessels that could support an AVF



Sands et al., NKF 2001

2. Improved Communication

Communication Between the Interdisciplinary Team

- Talk to each
- CDC, DOPPS, and KDOQI
- Protocols
- Patient education
- Professional education

Nephrologist Letter to Surgeon - Expectations



Sample Letter to a Surgeon

Date:

Dear Dr:

I am referring (patient name) to you today for permanent hemodialysis vascular access creation. As per KDOQI guidelines, I would prefer, if at all possible, that the patient have a native AV fistula. This is the most vascular access for long-term hemodialysis.

Please evaluate the patient for an arteriovenous fistula and for pre-operative vein mapping. If you need any assistance in getting a referral for the procedure or for the mapping, please let us know.

If for some reason after evaluating and examining this patient you feel that an AVF cannot be created, please contact me (or please let (patient) to discuss the situation before any access surgery has been scheduled.

Similarly, I do not wish the patient to have a central venous catheter without having a discussion with you about it first as there are many contraindications and complications associated with this type of access.

If the patient is a good candidate for an AVF, please contact (name) at my office at (phone) with the surgery details (date, time, etc.).

If you have any additional questions, please do not hesitate to contact me.

Sincerely,

Nephrologist Name

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Referral Patterns

- Friends
- Colleagues
- Physicians in the insurance group
- Only one in town

Surgeon's Experience/Expertise

- Vascular access not always a top priority
- No training programs in medical school for AVFs
- Quick and easy
- Payment

Payment Issues

Fistula First Breakthrough Initiative

Commonly Used Permanent* Vascular Access Codes

Code Type	Code	CSD Stage	Description
CPT	37799		For Unilateral Vascular procedure (includes lower extremity AVT) - requires supporting documentation
CPT	36812		Revision of AVF
CPT	36818		Upper extremity catheter placement (requires direction of distal cephalic vein and two accesses)
CPT	36819		Upper extremity vein transposition
CPT	36820		Forearm vein vein transposition
CPT	36821		AV access with direct vein to artery anastomosis (rad/br, Cunn, auto/br/dl,)
CPT	36825		AV access with other than direct arteriovenous anastomosis, autogenous graft
CPT	36830		AV access with other than direct arteriovenous anastomosis, non-autogenous graft (synthetic)
ICD-9	86.21	Stage 1	See ICD-9 diagnostic code as of October 2005
ICD-9	86.22	Stage 2	See ICD-9 diagnostic code as of October 2005
ICD-9	86.23	Stage 3	See ICD-9 diagnostic code as of October 2005
ICD-9	86.24	Stage 4	See ICD-9 diagnostic code as of October 2005
ICD-9	86.25	Stage 5	See ICD-9 diagnostic code as of October 2005
ICD-9	86.26	ESRD	See ICD-9 diagnostic code as of October 2005
ICD-9	86.29	CKD/NCS	See ICD-9 diagnostic code as of October 2005
ICD-9	86.73		Completion of unilateral prosthetic device, implant and graft for dialysis
ICD-9	86.74		Same as above, but for any purpose (CAUTION - this may benefit for one-on-one patients)
ICD-9	726.1		End stage renal disease, when AVT reduced sites access
ICD-9	747.11		End stage renal disease
ICD-9	747.12		Noncompliance with Renal Dialysis
ICD-9	772.83		Other preoperative special examinations (used with one visit surgical C code)
ICD-9	60005		Revisions/revisions of peripheral veins as well as arterial catheter and access conflict.

* Permanent refers to AV fistulas and AV grafts

Additional information can be found on the Medicare Physician Fee Schedule by going to the following CMS website: <http://www.cms.gov/physicianfeehelp.asp>. Other medical societies (ociety for Vascular Surgery, American Society of Diagnostic and Interventional Nephrology, Society of Interventional Radiology) have additional billing booklets with more information on other related procedures.

October 2009

fistulafirst.org

3. Protocols and Guidelines

- **Protocols:** A detailed plan for a course of medical treatment.
- **Clinical practice guidelines** are "systematically developed statements to assist practitioner decisions about appropriate health care for specific **clinical** circumstances."
- **Guidelines** can be used to reduce inappropriate variations in practice and promote the delivery of high quality, evidence-based health care.

(Thomas, Evidence-Based Nursing, 1999)

CDC Recommendation (2008)

Catheters should only be used when essential to patient care, not for convenience or as a "routine" practice. Ideally, catheters should only be placed when a patient is not a candidate for a fistula or a graft. This should be presented to the patient at the first doctor's visit and reinforced by the multidisciplinary team.

How to prevent catheter-associated infections

- Use sterile technique and have patients mask when catheter open
- Use catheter only for dialysis
- Only dialysis staff should change dressings
- Change dressing and assess exit site every treatment
- Soak caps, then air dry before connecting

Arduino & Tokars, 2005

How to prevent catheter-associated infections (cont)

- Maintain sterility of catheter and line ends
- Don't leave catheters open to air
- Replace dressing when wet or soiled
- Disinfect skin prior to applying new dressing
- Consider nasal mupirocin for carriers of *S. aureus*

Arduino & Tokars, 2005

New CDC Guidelines for Catheters to Reduce Catheter-Related BSI

- "Scrub the Hub"
- Use a suture-less securement device
- Use iodine ointment or bacitracin/gramicidin/polymyxin B ointment at HD exit site at the end of each treatment (unless DFU says "no")
- Use collaborative-based QAPI
- Ongoing education and competencies

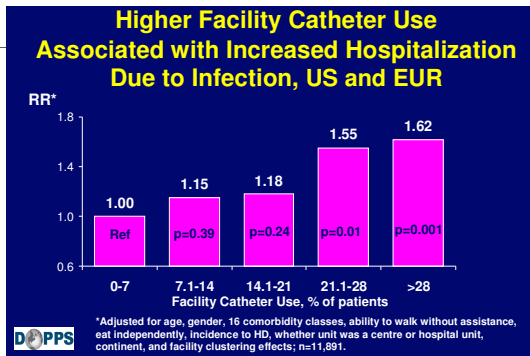
Dialysis Outcomes and Practice Patterns Study (DOPPS)

Identified outcomes associated with hemodialysis catheter use:

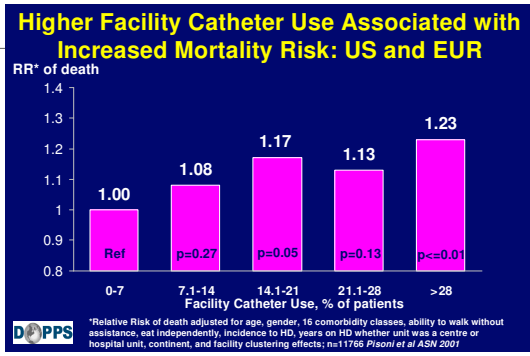
- ✓ A lower mean hemoglobin
- ✓ A higher hospitalization risk
- ✓ A higher mortality risk
- ✓ An increased risk of failure of a subsequent AVF
- ✓ A higher risk of infection

(Rayner et al. 2003)

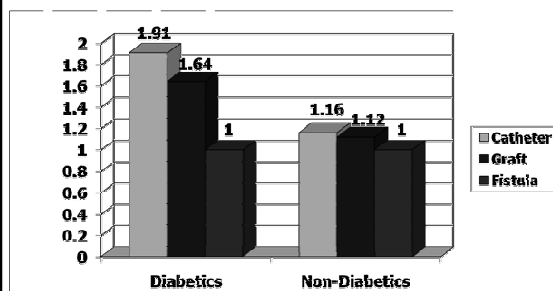
Catheter Infections



Catheter Mortality Risk



Bottom Line - Relative Risk of Death by Access Type

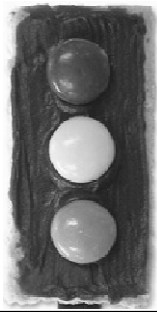


Dhingra et al. Kidney International, 60, p1443, 2001

KDOQI CPG

- Catheters should be reserved for patients with:
 - ✓ Co-morbid conditions limiting life expectancy
 - ✓ Systolic hypotension who have had attempted permanent accesses that have failed
 - ✓ All available sites for fistulas and grafts have been exhausted or are not feasible

Patient Education



Patient Choice

Catheters – High Risk Factors

Grafts – Intermediate Risk Factors

AVFs – Low Risk Factors

Professional Education

- Absolutely necessary to ensure patients have the best outcomes, and improved quality of life
- Must be able to communicate the complications associated with long-term catheter use
 - ~ Stenosis
 - ~ Thrombosis
 - ~ Sepsis

Cost of Thrombosis

- Thrombosis of CVC lumen is most common cause of catheter dysfunction and access loss¹.
 - Occurs in 30 to 40% of patients undergoing hemodialysis^{2,3}.
- Thrombotic events are major cause of morbidity, hospitalizations, and increasing costs^{4,5}.

1. NKf. (2001). *Am J Kidney Dis.*, 37(Suppl. 1), S137-S181.
2. Little. (2002). *Am J Kidney Dis.*, 39, 86-91.
3. Moss et al. (1988). *Am J Kidney Dis.*, 12, 492-498.
4. Feldman. (1996). *J. Am Soc Nephrol.*, 7, 523-535.
5. Feldman et al. (1993). *Kidney Int.*, 43, 1091-1096.

Cost Per Patient by Access Type

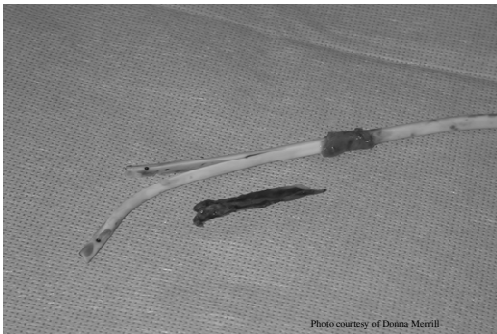
USRDS 2010 (2008 data)

Annual Per Patient Per Year Expenditure

Catheter	\$90,110
Graft	\$79,337
AVF	\$64,701

- The annual per patient cost savings of an AVF over a graft is \$14,636
- The annual per patient cost savings of an AVF over a catheter is \$25,409

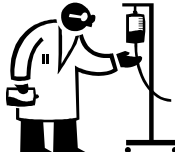
Fibrin Sheath Clot



Complications of Long-Term Catheters

Sepsis

- Septicemia accounts for more than 75% of infection-associated deaths in dialysis patients
- Two methods of infection: migration and contamination



Sarnak and Jaber, KI, 2000

Tools to Provide Quality Care

Driving Force: 10/14/08 - Conditions for Coverage

- Quality Assessment and Performance Improvement
- Decrease complications and improve the quality of care provided to Medicare beneficiaries

QAPI Root Cause Analysis

Root Cause Table

Possible Root Causes of High Catheter Utilization and Potential Interventions to Reduce The Long-Term Catheter Rate	
POSSIBLE ROOT CAUSES	POTENTIAL INTERVENTIONS
ESRD Management-Related Factors	
Lack of valid information about long-term benefits of permanent vascular access (AVF or AVG) and that catheter placement at certain sites may limit future access options	Increase educational awareness of benefits of permanent vascular access (AVF or AVG) for patient's optimal quality of life. Adopt belief that the preferred permanent vascular access is AVF.
Patient-Related Factors	
Patient not informed of access options and risks and complications of long-term catheter use	Refer patient to facility vascular access coordinator for assessment and follow-up. Formalize vascular access management protocol in the unit, educate all team members to use the protocol and algorithms, monitor staff for consistent use of the protocol, involve patient education regarding access options and long-term catheter-associated risks.
Dialysis Facility Staff Related Factors	
Lack of tracking system for monitoring catheters	Formalize vascular access management program in the unit, educate all team members about the program and algorithms. Refer patient to facility vascular access coordinator for assessment and follow-up.
Other Factors	
Insurance problems (i.e. delayed or out-of-network referrals, or lack of approval for permanent access placement)	Refer patient to facility vascular access coordinator for assessment and follow-up. Utilize social services support to secure insurance approvals or seek other financial assistance.

Provider Education Videos



What are the problems with a catheter?

- **Length:** 01:08
- **Description:** Explanation of problems with catheters.

Questions?

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www.nwrenalnetwork.org/QI/QI.htm
