

VASCULAR ACCESS: ACHIEVING OUTCOMES THROUGH QAPI

**Amy Davis, RN
Manager
Clayton Taylor Dialysis Unit**

Objectives

- Describe old and new models of Vascular Access care
- Discuss process of achieving outcomes through Quality Assessment Process Improvement
- Describe impact of changes in practice on VA outcomes
- Discuss expanding role of VA Liaison
- Consider advanced strategies to increase AVF use with catheter reduction

Statistics in 2006

- CVC rate 40%
- AVF rate 42%

Clinical Pathways

- **Old Model:**
 - Approach to Vascular access limited mostly to
 - Vascular Access Coordinator
 - Physician-driven approach

Clinical Pathways

- **New/Current Model:**
 - Team approach involving the whole clinic
 - All Clinical Staff
 - Patients
 - Access Liaison (Sheri)
 - Physician

New/Current Model

- Staff relationship with patient
- Patient confidence in staff
- Staff paired with patient
 - Comfort level
 - Communication
 - Feedback from other patients
- Staff educates patient

Approach to New Patients

- **With existing access**
 - When can it be used?
 - On-going evaluation/maturation
 - Referral for angiography if AVF not maturing at 4 weeks
- **Without access**
 - Discussion with patient and physician
 - Referral to Access Liaison
 - Access surgery after vein mapping
 - Continued monitoring for maturation

On-Going Patients

- **Monitoring Access in Use**
 - Physical Exam
 - Access Flow & eKdrt/V
 - Changes in cannulation experience
 - Concerns expressed by patient
 - Referral for evaluation after discussion between patient and physician

Established Patients, or Patients Transferred-In w/ CVC Only

- On-going education and encouragement
- Re-evaluation of “medically unsuitable” patients

Other Key Practices

- **Communication:**
 - Patient
 - OCDT
 - RN
 - Physician
 - Access Liaison
- **Formal Review at CQI, Chart Rounds & PRN**

Advantages of New Approach

- Reduction of CVC & Increase in AVF
- Single referral contact (unique to our practice)
- Single physician group
- Two supportive Nephrologists
- Collaborative team approach
- Unified Goal:

“improve patient outcomes by encouraging use of AVFs & eliminating use of permanent CVCs”

Changed Statistics

- From 1/31/06-12/31/09:
 - CVC Rate reduced from 40% to 16%
 - CVC Rate as only access 5%
 - AVF Rate increased from 42% to 64%

Wait! Is The Model Portable?

- Similar programs, similar results
 - OSU Campus unit **6-month** trend:
 - Reduced CVCs 48% to 27%
 - Increased AVFs 45% to 63%

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Date Extracted: 08:42 Tuesday, December 08, 2009

OPERATIONAL HIERARCHY:

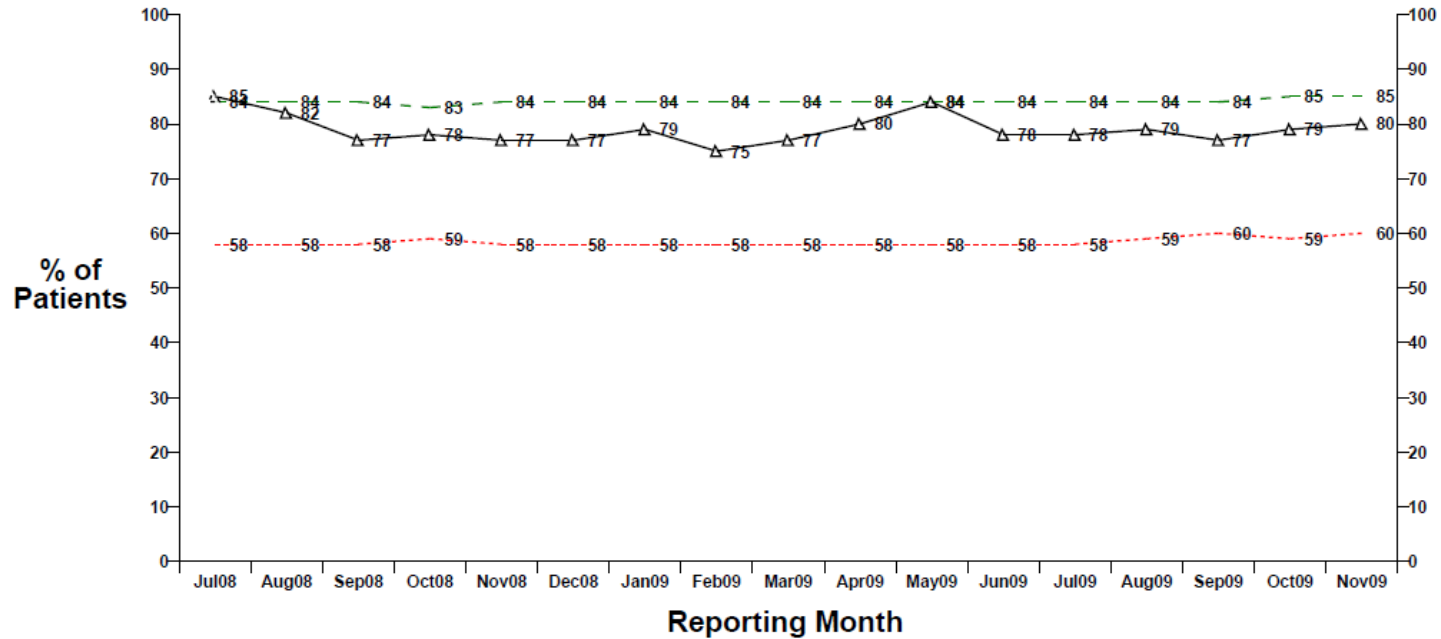
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 Op Group 3446 CENTRAL
 Region 4275 WESTERN OHIO
 Area 3558 CENTRAL OHIO AREA
 Report for: 6097 OSU CLAYTON TAYLOR
 State / City: OH / COLUMBUS

Hemodialysis: Quality Status Report (QSR)
 Time Series Graph: Primary Indicators
 Period Ending: November 30, 2009

Report ID: QE1042-16-02
 Version: 11.60

Catheters:
 % of Patients with No Catheter (at end of period)

Patients with data (in 1 month): 59



- Highest 10th Percentile of Facilities
- Lowest 10th Percentile of Facilities
- △ % of Patients Meeting Patient Target

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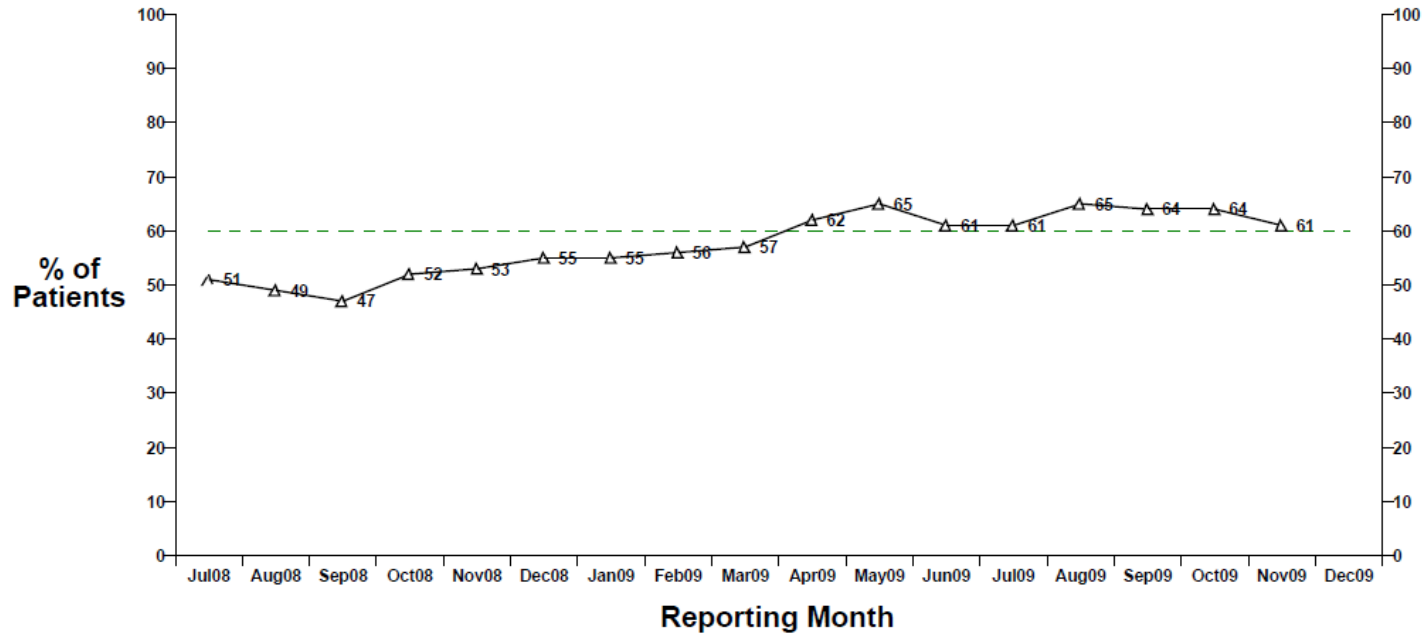
Time Series Graph: Secondary Indicators

Period Ending: November 30, 2009

A-V Fistulas (at end of period):

% of Patients with A-V Fistulas

Patients with data (in 1 month): 59



-- Facility Goal

△ % of Patients with A-V Fistula

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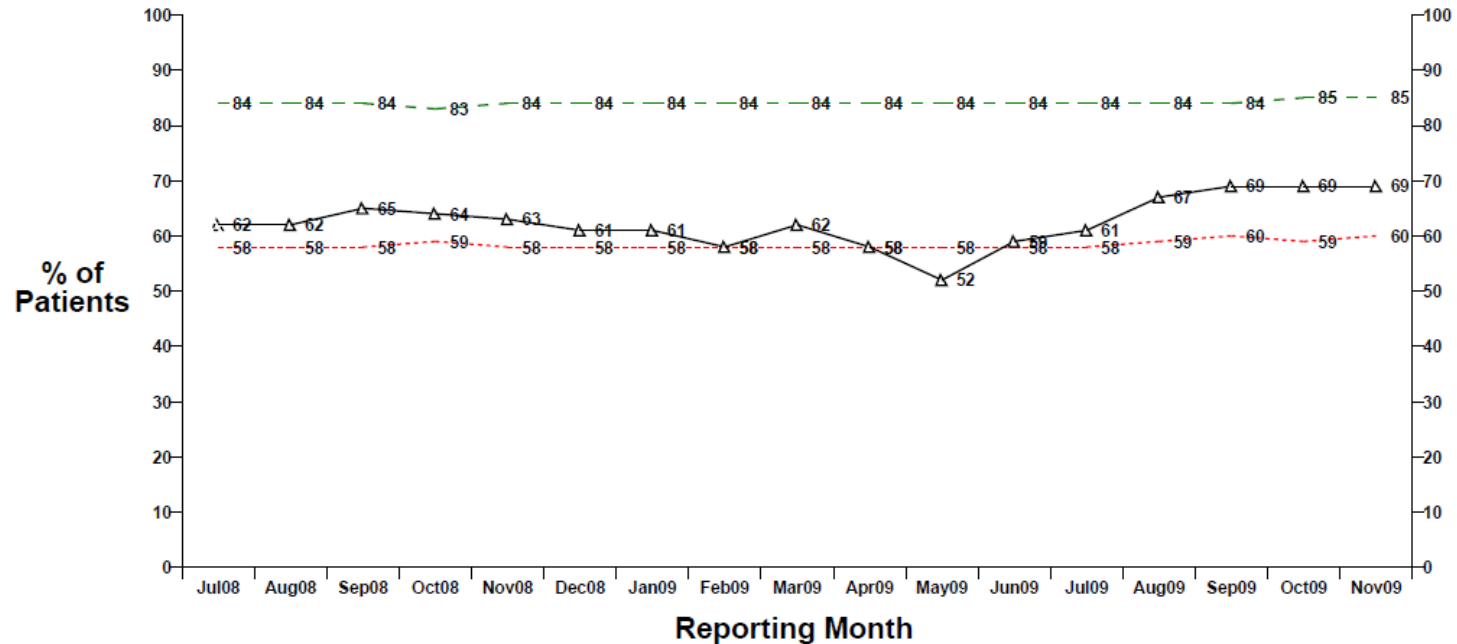
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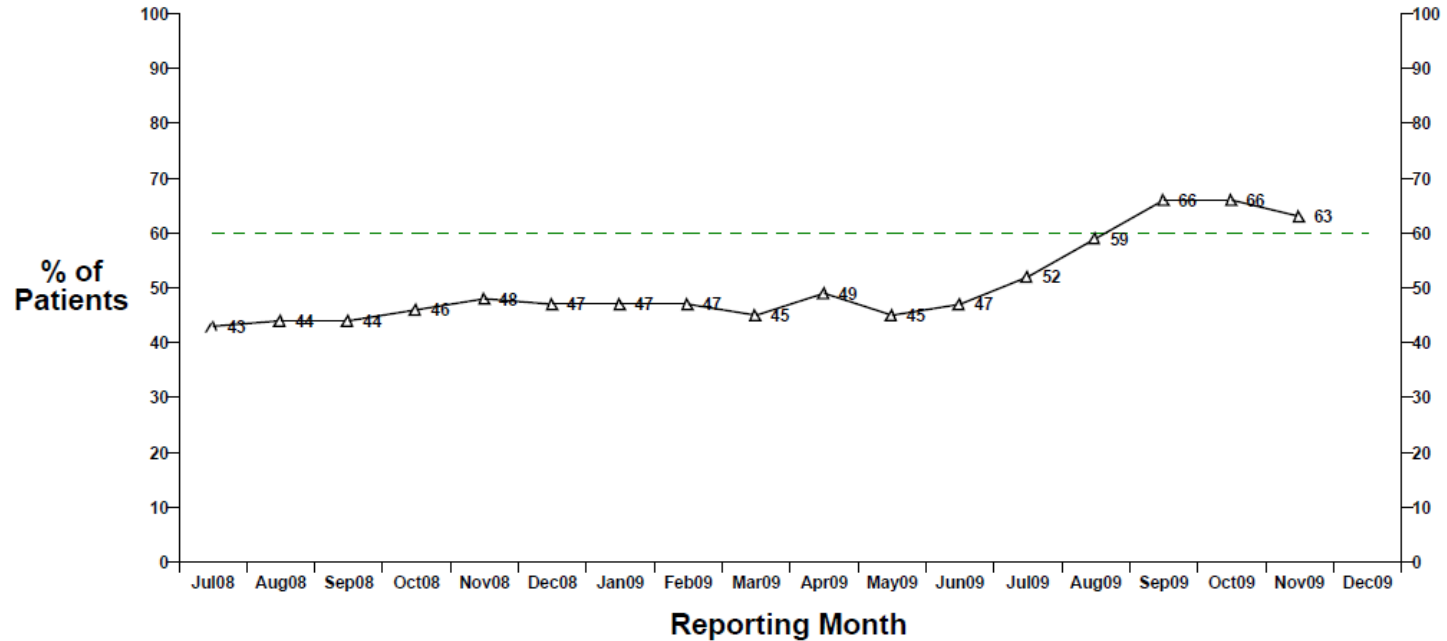
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Taking Care of Vascular Access: From Reactive to Proactive

**Sheri Van Cleef, RN
Dialysis Access Liaison
OSU Nephrology**

Focus On Fistulae

- Onset of access program 1995- focus on placement of AVF
- Of primary acceses placed:
 - 1996 67% fistulae
 - 2000 50% fistulae
 - 2004 78% fistulae
 - 2006 FISTULA FIRST
 - 2008 81% fistulae

How To Improve On A Good Program

- Continue focus on pre-dialysis AVF placement
- Consistent vein mapping
- Improve AVF success rate**
 - Consistent, careful physical exam
 - Earlier intervention
 - Expert cannulators
- Evaluate communication to identify areas for improvement

Old Way: React, React, React

- React to data shared in chart rounds
- Schedule for evaluation- hopefully before thrombosis

New Way: Be Proactive: Invert Communication

- Continuous communication beginning with the patient
- From PCT/patient
 - Access flow
 - Changes in cannulation
 - Patient concerns/observations
- Nurse and physician
 - eKT/V

Role of Access Liaison

- For every referral:
 - Review access history- Advantages of comprehensive access history database
 - Schedule procedure/discuss with patient
 - Obtain procedure report/follow up with missed procedures
 - Update history
 - Communicate results and plan to unit & physician

Role of Access Liaison (continued)

- Fax report/updated access history to unit
- Can include printed pictures
- Discuss with PCT/patient
- Repeat access flow for follow-up as indicated
- Continue to monitor
- Ongoing education of both staff & patients
 - Formal inservices
 - Informal conversations

Difference???

- Staff and patients empowered to participate in care and decisions
- Intervention more timely
- Improved outcomes

Tackling Tunneled Catheters

- Staff/patient rapport
- Consistency in education
- Re-evaluation of medical issues
 - Cardiac status
 - Venous occlusions
 - Access options

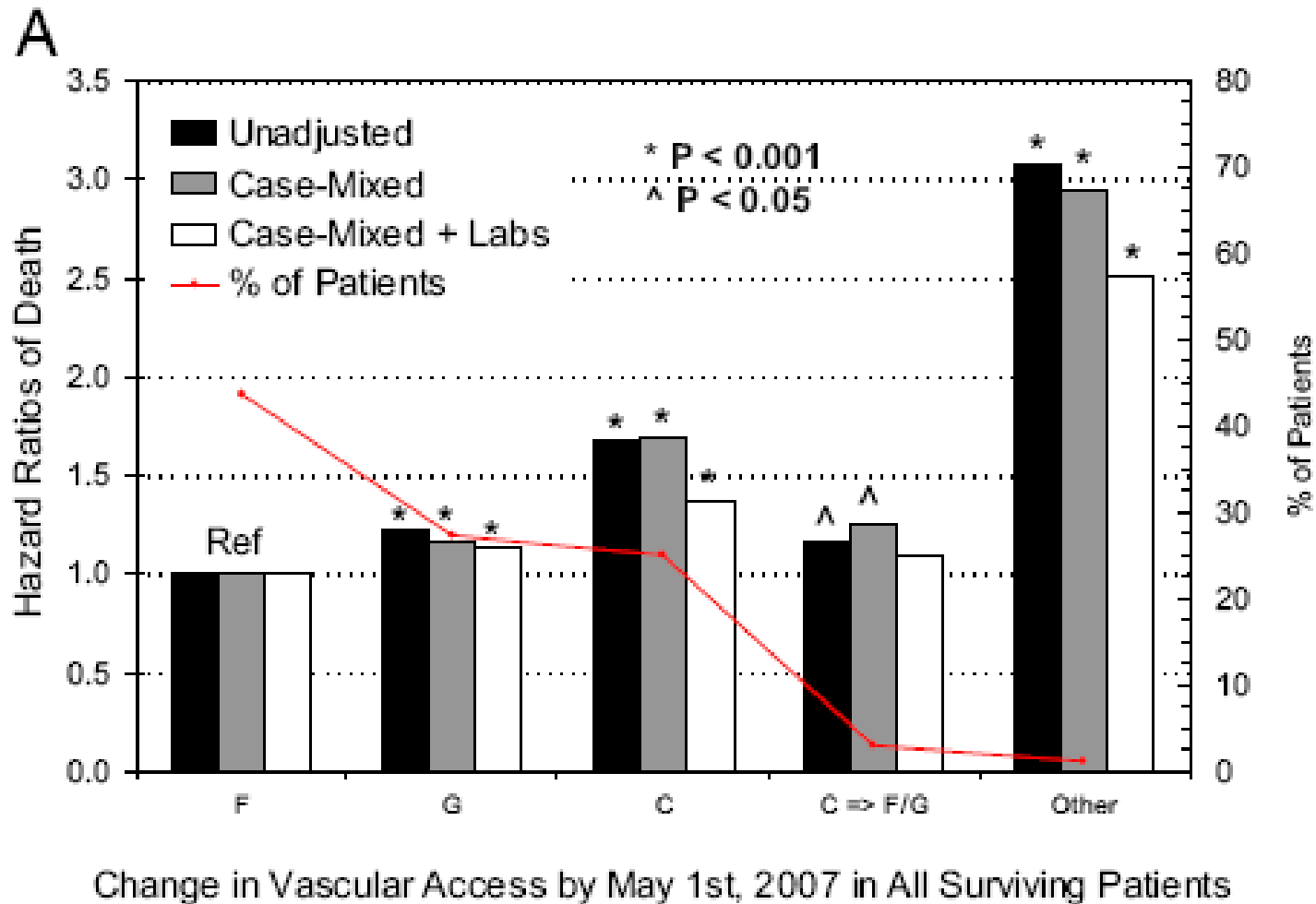
Ongoing Challenge For Improvement

- Minimize use of tunneled catheters
- Maximize maturation & care of new fistulae
- Continue a team effort
- Celebrate success

Changing The Paradigm: Taking Access Into Our Own Hands

**Anil K. Agarwal, MD, FASN, FACP
Professor of Clinical Medicine
Director, Interventional Nephrology
The Ohio State University College of
Medicine and Public Health
Columbus, Ohio**

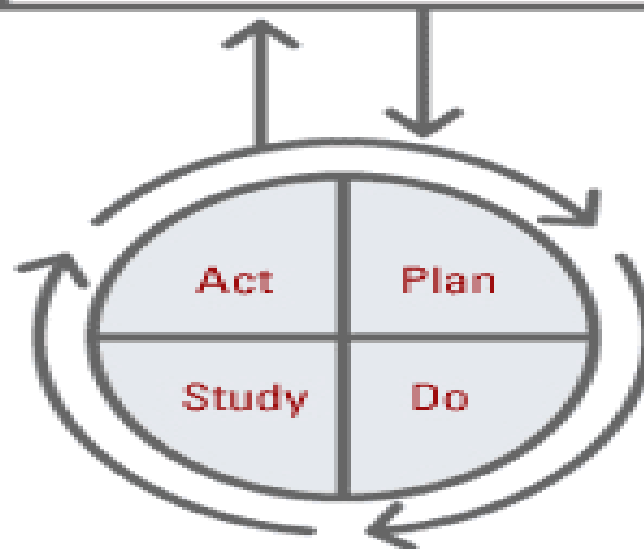
Impact of Access Change on Mortality



What are we trying to accomplish?

How will we know that a change is an improvement?

What changes can we make that will result in improvement?



Insanity:

Doing the same thing over and over again
and expecting different results.

-Albert Einstein.

Changing The Paradigm of Access Care

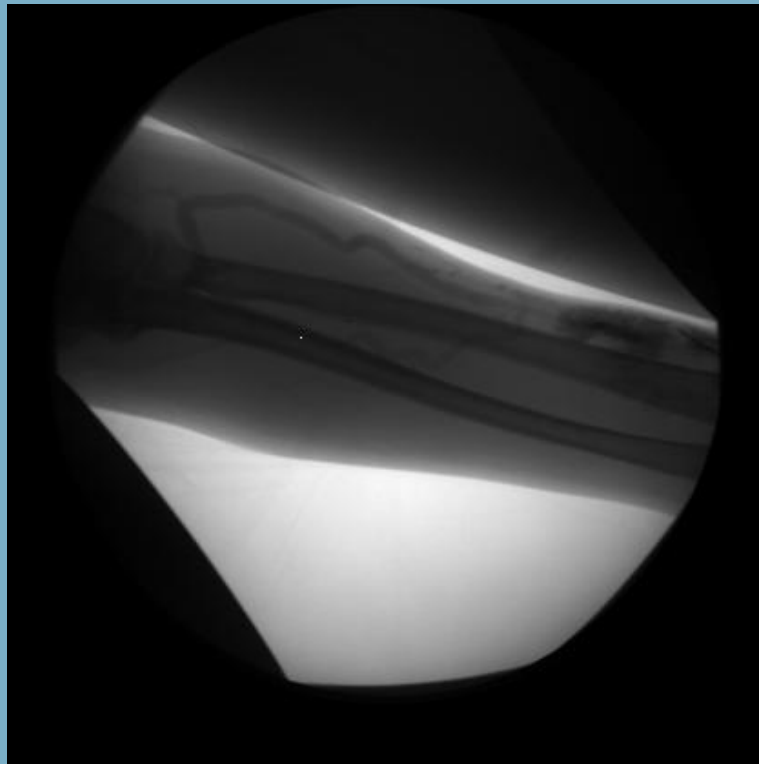
- We already had the ingredients for success:
- Physician motivation
 - One physician appointed as network advisor to National Vascular Access Initiative (Fistula First)
 - Trained as interventional nephrologist
 - Trained another physician as interventionalist
- Pre- existing excellent surgical team
- Experienced Access Liaison
- Willing clinical team, and
- *Some degree of craziness!*

Benefiting from Pre- ESRD AVF Creation

- Already had high AVF *placement* rate
- Initiated *routine* vein mapping prior to placement
- Aggressive early intervention for immature or failing AVF
- Did not exclude ‘suboptimal’ candidates
 - Elderly
 - Heart failure patients
 - Diabetics
- Improved our rates when placed on dialysis

Intervening for immature AVF- Case 1

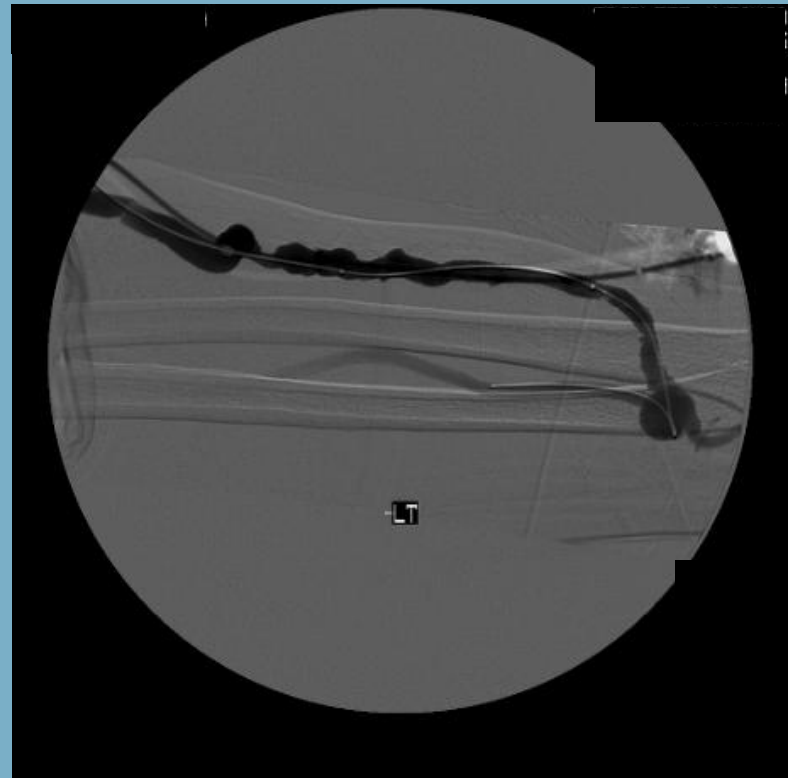
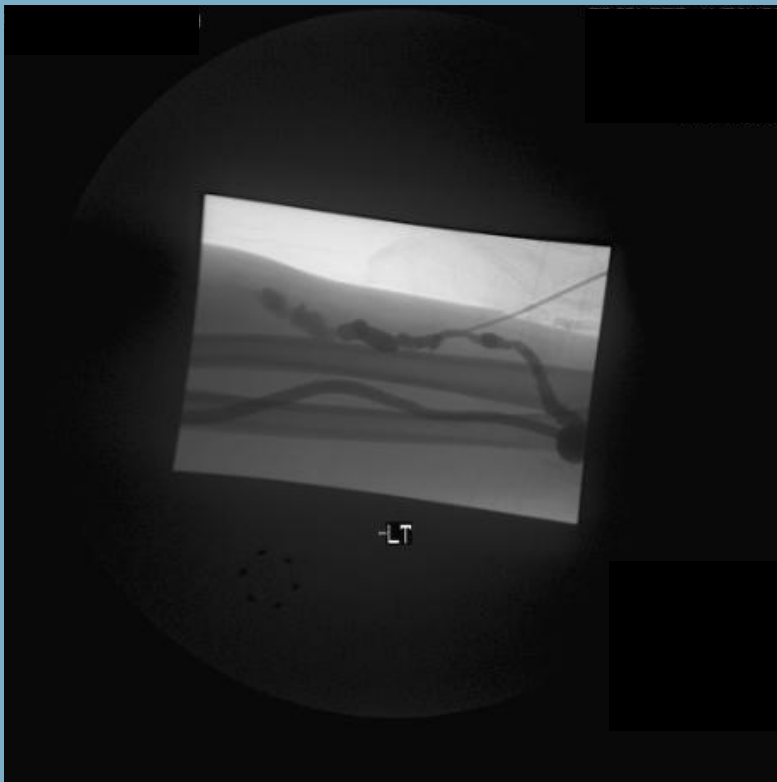
- Young, obese, failed transplant patient
- Small AVF with difficult cannulation



- Fistulogram, followed by accessory vein ligation

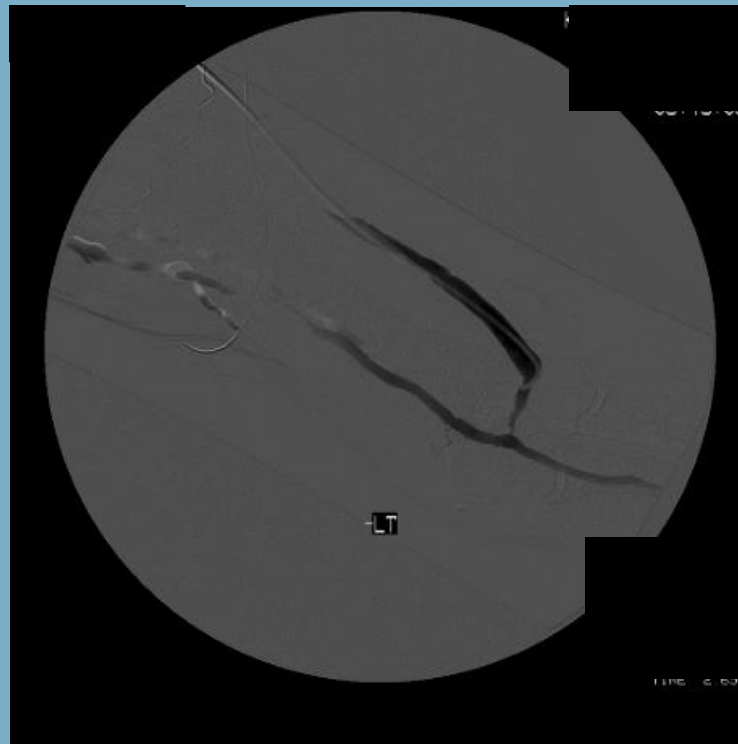
Intervening for immature AVF- Case 1

- A nurse took initiative to learn 'Button hole technique' and started using
- Prevented catheter use!
- Requires periodic angioplasties

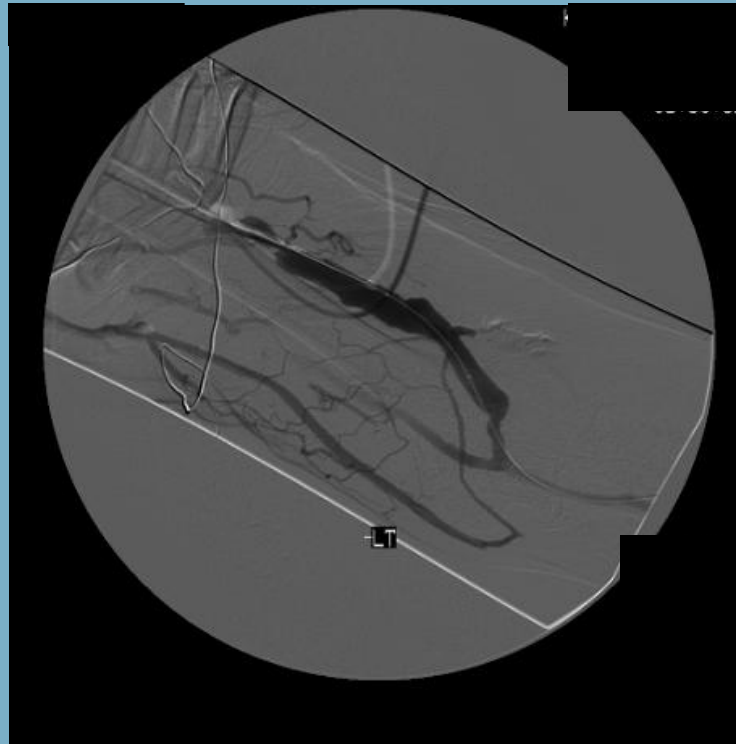


Intervening for immature AVF- Case 2

- Elderly (85 years old), small patient
- Not considered a candidate for AVF placement- but placed anyways!
- Small AVF with difficult cannulation



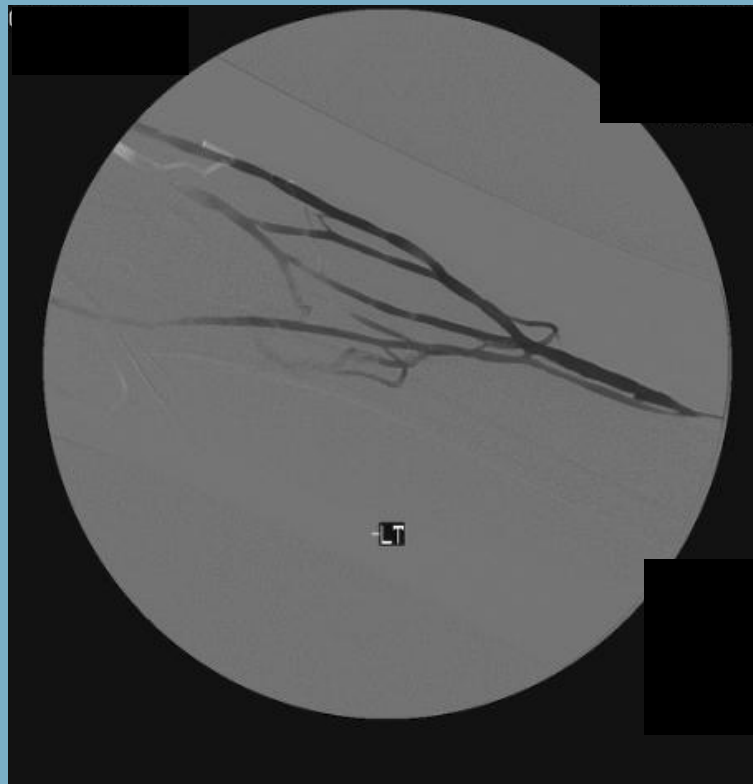
Intervening for immature AVF- Case 2



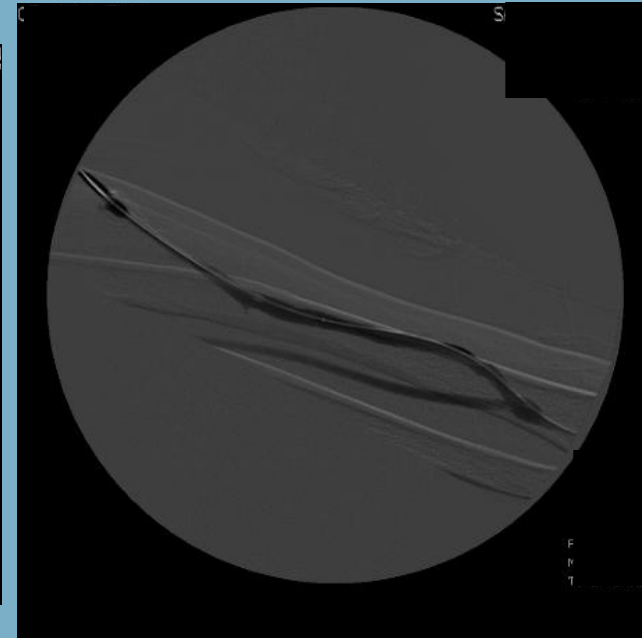
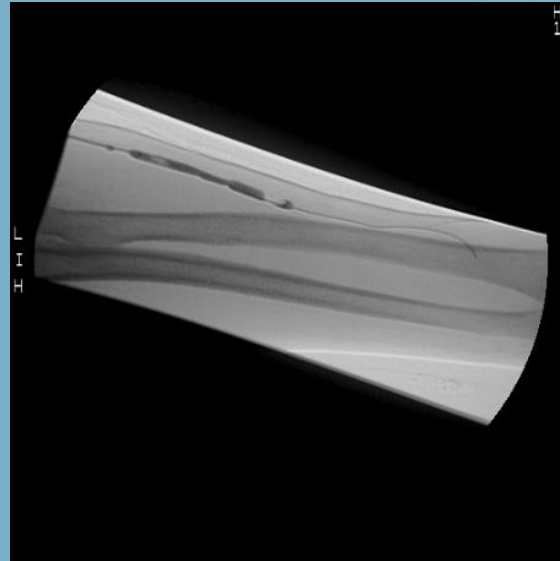
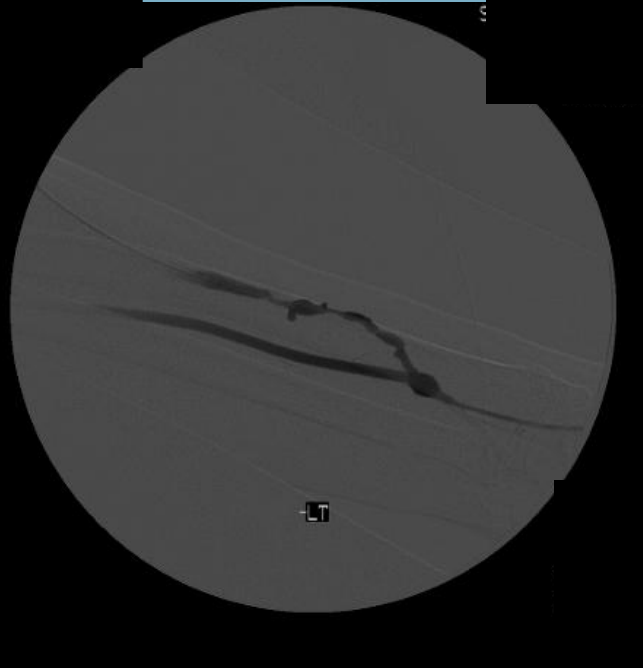
- Fistulogram and angioplasty
- 'Button hole technique'
- Prevented catheter use!

Intervening for Difficult AVF- Case 3

- Older patient, AVF small, poor adequacy
- Small AVF with difficult cannulation
- Multiple outflows, required ligation of accessory veins



Intervening for Difficult AVF- Case 3



- Recurrent stenosis
- Fistulogram and angioplasty
- 'Button hole technique'
- Prevented catheter use!

Creating Secondary AVF- Case 4

- Young patient, AVG with recurrent thrombosis (CW)
- Proceeded with vein mapping, new (Secondary) AVF
- AVF matured
- 'Button hole technique'
- Prevented 'permanent' catheter use!

Approaches Used To Reduce Catheters

- We had a number of patients with chronic catheters
- Difficult to convince, but collaboration worked
- Proceeded with vein mapping
- Created AVF, including transposition
- Salvaged as needed
- 'Button hole technique' when needed
- *Moved some patients with poor access to peritoneal dialysis or expedited their transplant*
- Reduced catheter use!

Elements for Catheter Reduction/Fistula Use

- **Motivation- of *All involved***
- **Building a team**
- **Used most of the 'Change Concepts' of Fistula First**
- **Utilizing all possible strategies-**
 - Pre ESRD AVF
 - Salvaging AVF
 - Removing catheters
 - Creating Secondary AVF

**But, we have existing opportunities that
we still need to utilize**

We Are Not Done Yet!

SUMMARY

- **Vascular Access remains the ‘Achilles Heal’ of hemodialysis**
- **There is a survival benefit associated with AVF use**
- **Critically appraising the paradigm of access management through QAPI and using feedback to improve the process will result in better outcomes**
- **Sheer presence of high catheter use or low AVF rates should not be considered a ‘hopeless situation’, but can simply be interpreted as ‘Lots of Opportunity’**
- **The new paradigm seems to be applicable to other units as well**

We Are Proud of Our Team!