Network Notes
Special Edition 2007

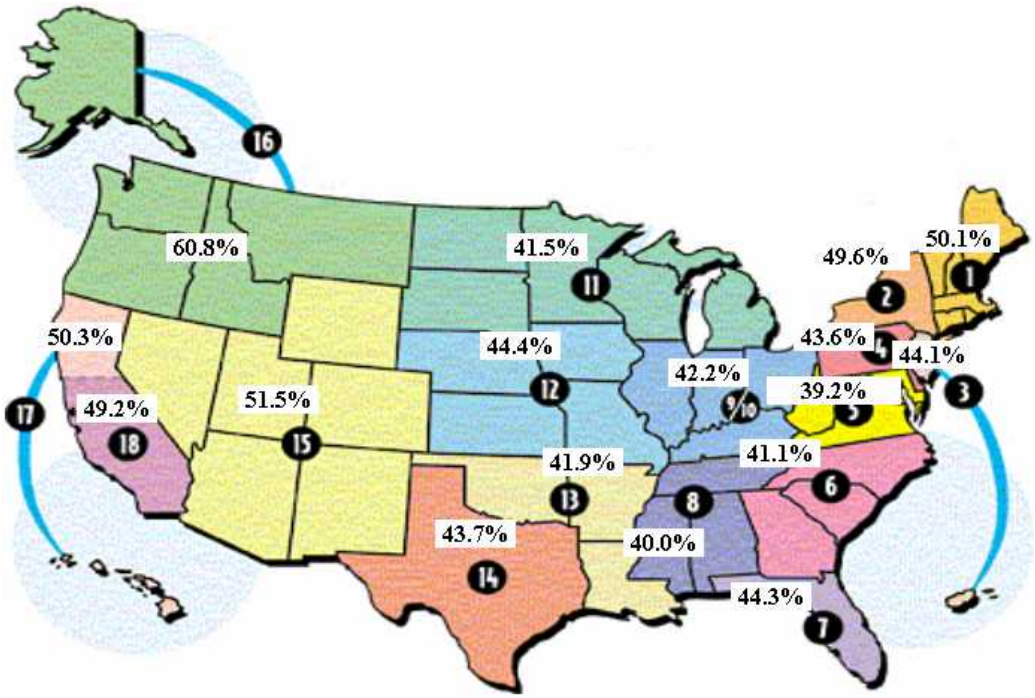
FISTULAFIRST
National Vascular Access Improvement Initiative

Will New England Ever Get to the New Prevalent AVF goal?

Since the Fistula First Project was launched in 2003, each ESRD Network has experienced an increase in the prevalent AVF rate of use & met the individual targets assigned by the Centers for Medicare & Medicaid (CMS). The National rates have risen from 33% to 44.8% as of Nov. 2006.

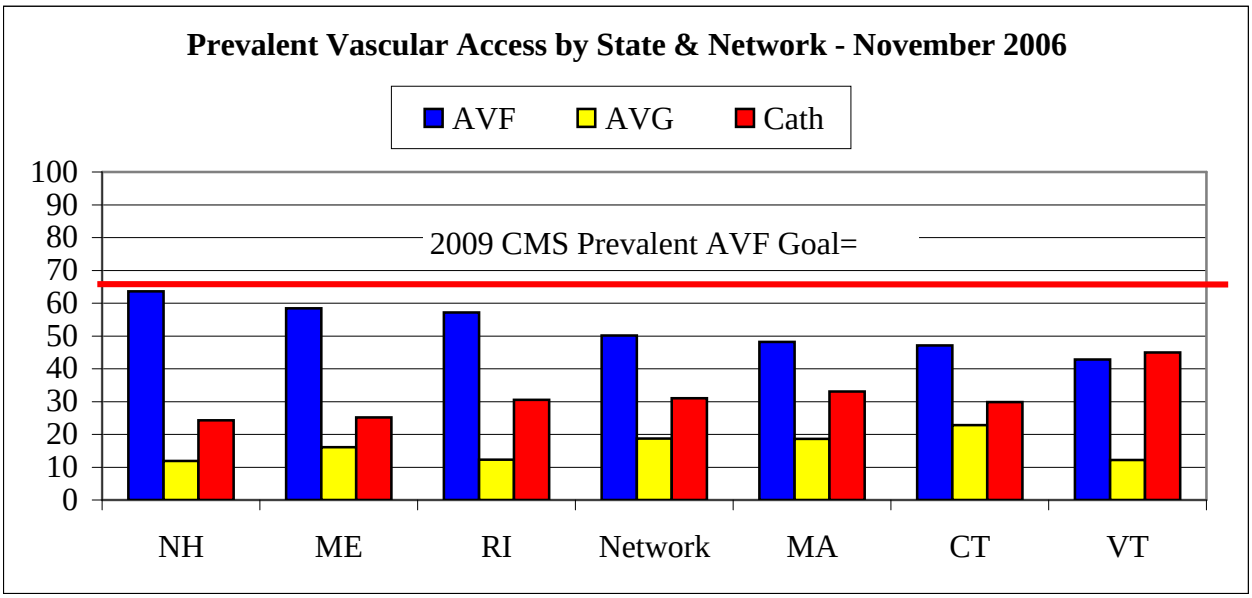
As improvements were demonstrated, CMS increased the AVF prevalent goal to 66%. The National Kidney Foundations Kidney Disease Outcomes Quality Initiative (KDOQI) guidelines for vascular access in 2006 recommend a 65% prevalent AVF rate. While these goals remain lower than the current rates in Japan or Europe only one ESRD Network reports a rate of 60% and the southern Networks report rates in the low 40 percentiles.

End Stage Renal Disease Network Regional Map
Percent Prevalent Patient Utilizing A-V Fistula as of Nov., 2006
US Prevalent AVF rate =44.8%

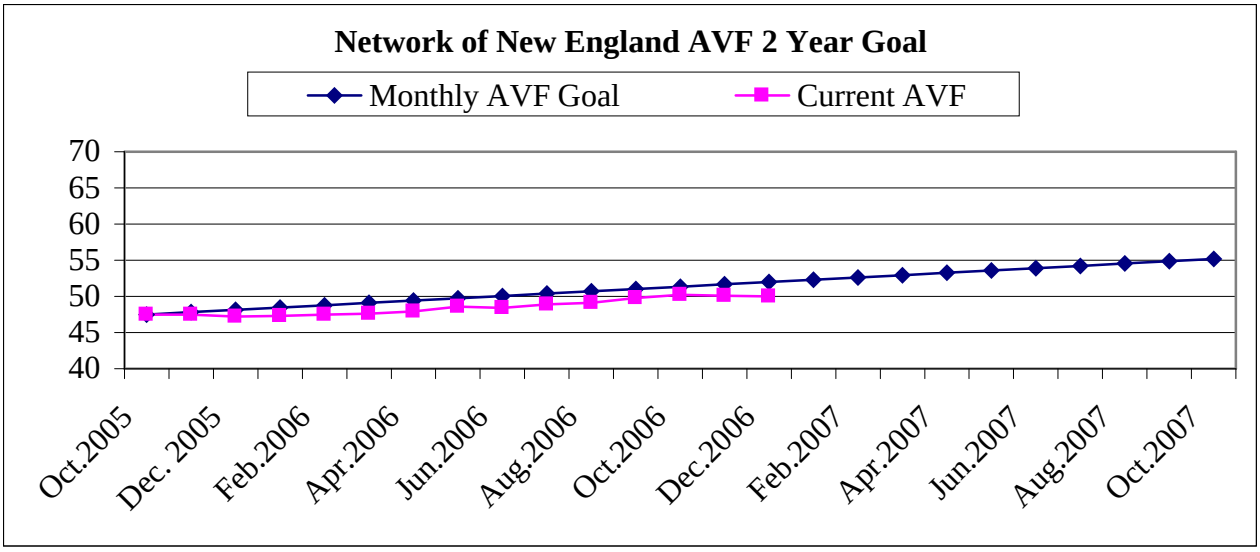


Date Source: FF Dash Board
100% of facilities may not of reported in each Network

The New England states are averaging a 50% prevalent AVF rate. There is quite a bit of variation among the states as the chart depicts below.



Networks are expected to reduce the quality deficit in their regions in order to meet the CMS goal by 2009. Network 1 is expected to reach a target increase of 3.84 % annually. The trending chart below shows that your Network has stalled in improvement and has not shown the 0 .32% monthly increase needed. The averaged monthly increase has only been 0.2%; at that rate this Network will not meet the CMS assigned target by 2009.



There are 23 dialysis facilities, which are below a 40% AVF rate out of the 152 clinics that are participating in the Fistula First Initiative. If these 23 clinics could improve to over 40% it would assist the region as a whole to reach the CMS goal. The breakout by each state is depicted below.

AVF Percent Range	CT	MA	ME	NH	RI	VT	Number of Facilities
10% or less	0	2	0	0	0	0	2
10-19%	0	0	0	0	0	1	1
20-29%	1	0	0	0	0	0	1
30-39%	5	8	1	0	3	2	19
40-45%	4	20	2	1	0	2	29
45-49%	8	8	1	0	2	0	19
50-59%	11	22	7	4	3	1	48
60-69%	1	6	5	1	5	1	19
More than 70%	1	3	2	4	4	0	14
Total	31	69	18	10	18	7	152

These clinics that remain under 40% cite barriers to improvement that are viewed as beyond their control; late referral to the nephrologists, lack of availability of skilled and willing surgeons, financial/reimbursement issues, poor cannulation skills and patient resistance.

Those clinics that report high prevalent AVF rates have attributed their successful outcomes to the following practice changes:

- Increased nephrology leadership in vascular access planning
- Increased surgeon interest & skill, utilization of a full range of surgical approaches, including transposition & secondary AVF
- Increased communication among the vascular access team members
- Use of pre operative vessel mapping
- Appointing or hiring a vascular access coordinator to monitor & follow up on all accesses & interventions.

Data proves that even if early referral to the nephrologists occurs there are additional barriers that prevent an AVF being placed. The Dialysis Outcomes Practice Patterns Study (DOPPS) report 68% of patients in the US have been under the care of a nephrologist for 4 months or more and only 32% will initiate hemodialysis with an AVF or AVG. From June 1, 2005 to July 2006 the Network of New England received the 2728 forms (End Stage Renal Disease Medical Evidence Report-Medicare Entitlement and/or patient registration) for 3,599 patients. Data from those forms indicated that a nephrologist has followed 57% of incident patients for 6 months or more prior to initiating chronic hemodialysis dialysis. 42% of these patients started dialysis with a catheter only, however the good news is that 58% had a permanent access placed either an AVF or AVG with or without a catheter. 27% had AV fistulas only and 6% had AVG only, which would indicate 33% of the patients followed by a nephrologist for 6 months, or more had early vascular access planning.

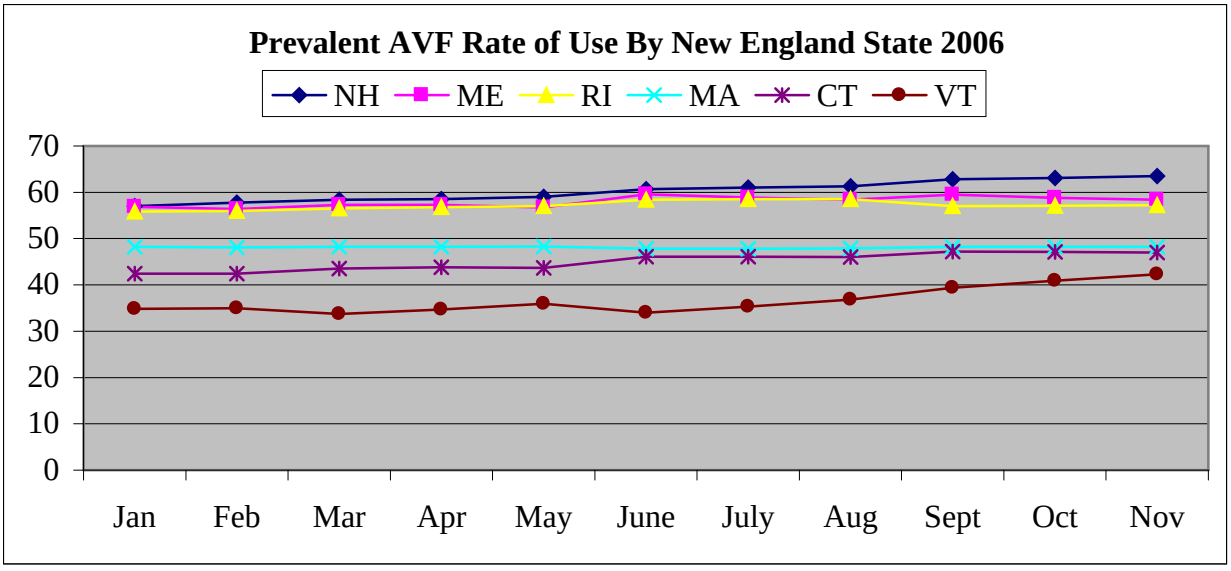
As central venous catheter use is related to increase risk of morbidity, mortality and failure of subsequent accesses, we must determine the cause of delays in permanent access placement in order to correct them. Providers report multiple reasons for delays, once patients are received by

nephrologists, such as; time constraints, leading to insufficient follow-up in referring patients to the vascular surgeon; prolonged time between call for surgical appointment and actual appointment due to heavy case load; missed appointments due to patient compliance issues, financial or transportation issues, patient refusal, related to denial of disease; time involved with preoperative evaluation which may include cardiac clearance and vessel mapping; surgical schedule delays as vascular access procedures are “add ons” or viewed as low priority.

While the AV fistula goal may seem insurmountable with the number of identified barriers, we believe it is achievable through collaborative efforts of all health care providers, partners and payers associated with chronic kidney disease (CKD) patients. The Fistula First Breakthrough Initiative coalition members and the 18 ESRD Networks are working to address the barriers, nationally & regionally through patient & provider educational efforts and proposals to changes in the payment system. The Network of New England encourages each of you to work within your practice to make the necessary changes to achieve the goal, and suggest the following measures to consider for implementation, along with the Fistula First Change Package:

- Education in community healthcare settings for individuals with CKD
- Early diagnosis of chronic kidney disease through an estimated glomerular filtration rate (eGFR) calculated by laboratories & primary care practitioners (PCP)
- Increased communication/education with PCP & nephrologists regarding CKD stages to ensure proper care delivery & timing of referral
- Increased recruitment and training of surgeons to perform vascular access procedures
- Early & continuous patient & family education regarding kidney replacement modalities, requirement for access & access types
- Social worker involvement, to assist patients with coping skills, financial & transportation issues
- Involvement of hospital caseworkers or discharge planners to schedule surgical appointments prior to discharge
- Increased and early communication between nephrologists and surgeons to develop vascular access plan, to include completion of pre=op evaluation such as vessel mapping & cardiac clearance prior to surgical evaluation
- Increased education of the dialysis staff in vascular access assessment and cannulation techniques
- Evaluation of clinical outcomes and costs related to hemodialysis vascular access type at the hospital level

The Network of New England applaud the efforts of patients and providers in our region as they continue to make efforts to improve vascular access outcomes and welcome suggestions to share with others. Members of the Medical Review Board and the Quality Improvement Managers are available for assistance with vascular access improvement and any other issues or concerns of the renal community in New England. To request assistance, or for more information contact Peggy Lynch, RN or Cindy Lambert, RN, NW 1’s Medical Quality Managers at 203-387-9332.



As you can see New Hampshire is leading the way in prevalent AVF percent of use at over 60% while Maine & Rhode Island are close to the 60% mark. MA and CT appear to have been in a holding pattern for the past few months at just under 50% and Vermont has made steady progress this year to reach over 40%.

Providers that are less than 50% may consider contacting the providers that are 66% or higher already to ask them to share their strategies for success in vascular access management. Look for the phone numbers & contacts in your facility directory.

Champion Clinics with Prevalent AVF rates > 66%

FMC New Hampshire Kidney Center	Dialysis Center of West Warwick
Manchester Kidney Center	FMC Dialysis Services of Blackstone Valley
VA-Medical Center-Providence	MaineGeneral Medical Center
DCI-Walden Pond	Dialysis Center of Tiverton
DCI-Skowhegan	North Country Dialysis Center
DaVita -Worcester	Dialysis Center of Easy Providence
Dialysis Center of Providence	Casco Bay Dialysis Facility
North Shore Regional Dialysis Center	VA Medical Center-Togus
Coastal Dialysis Center	DaVita-Nashua

Updates to KDOQI Vascular Access Clinical Practice Guidelines

The National Kidney Foundation Kidney Disease Outcomes Quality Initiative (KDOQI) published revisions to the clinical practice guidelines for vascular access. The changes include clear distinctions between clinical practice guidelines that are evidenced based and those that are opinion based. The strength of each guideline is ranked according to the quality of supporting evidence and additional considerations such as costs & feasibility.

The guidelines focus on appropriate preparation and placement of the vascular access, cannulation techniques and accession of hemodialysis catheters, detection of access dysfunction and clinical outcome goals. The recommendations focus on the same topics plus vascular access in pediatrics.

Highlights of the vascular guidelines include:

Guideline 1. Patient Preparation for Permanent Hemodialysis Access

- Avoid venipunctures (to include IV catheters, subclavian catheters or PICC lines) in upper extremities suitable for vascular access in CKD patients with stage 4 or 5
- Patients should have functional permanent access at initiation of chronic dialysis
- An AVF should be considered after every access failure
- A backup HD access is not necessary in most PD patients
- PD catheters may be used as a bridge during fistula maturation
- Pre-op evaluation should include history & physical exam, duplex ultrasound of upper extremity arteries & veins, and central vein evaluation in patients with a history of central venous catheters or pacemaker.

Guideline 2. Selection and Placement of Hemodialysis Access

- Descending preference
  - ν Preferred-Fistulae
    - ➢ Wrist (radiocephalic)
    - ➢ Elbow (brachiocephalic)
    - ➢ Transposed brachial basilica vein
  - ν Acceptable-AVG
    - ➢ Forearm loop preferable to straight
    - ➢ Upper-arm
    - ➢ Chest wall or lower extremity after all upper-arm sites exhausted

Guideline 3. Cannulation of Fistulae & Grafts and Accession of Hemodialysis Catheters

- Fistulae more likely ready for use when the Rule of 6's met:
  - ν Flow > 600ml/min
  - ν Diameter at least 0.6 cm deep
  - ν No more than 0.6 cm deep with discernable margins
- Perform Imaging study if AVF not mature by 6 weeks
- Constant-site cannulation (buttonhole) technique for AVF added

Guideline 4. Detection of Access Dysfunction: Monitoring, Surveillance & Diagnostic Testing

- Perform physical exam at least monthly to determine access function
- Graft surveillance
  - ν Preferred methods: Intra-access flow, directly measured or derived static venous pressures, duplex ultrasound

- Acceptable: Physical findings
- Unacceptable: Unstandardized dynamic venous pressures

- Fistulae surveillance
  - Preferred methods: Direct flow measurements, physical findings, duplex ultrasound
  - Acceptable: Recirculation using a non-urea-based dilution method, direct or derived static pressures

Guideline 5. Treatment of Fistula Complications

- Conduct a program that allows early detection of access dysfunction, particularly delays in maturation. Evaluate the patient every 6 weeks of fistula creation.
- Indications for intervention: inability to achieve the prescribed blood flow rate, hemodynamically significant venous stenosis, aneurysm formation, postaneurysmal stenosis that drives aneurysm, ischemia in access arm or fingers
- Perform thrombectomy ASAP, but can be successful after several days.

Guideline 6. Treatment of AV Graft Complications

- Treatment of AVG thrombosis can be performed percutaneously or surgically, basing the decision on expediency and physician expertise.
- AVG thrombectomy should be performed urgently to minimize the need for a HD catheter

Guideline 7. Prevention and Treatment of Catheter Complications

- Evaluation of catheter dysfunction, defined as failure to maintain a blood flow of 300ml/min or greater at a pre-pump arterial pressure more negative than –250mm Hg.

Guideline 8. Clinical Outcome Goals

- Prevalent functional AVF rate of greater than 65% OF PATIENTS
- Cuffed catheter for permanent access in less than 10% of patients-defined as use of catheter greater than 3 months in the absence of a maturing AVF or AVG

To review the complete set of guidelines go to the National Kidney Foundation website: http://www.kidney.org Go to the section for professionals & look for the KDOQI 2006 vascular guideline updates.