

Increasing Fistulas Within Network #15 (Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming)

A Quality Initiative Executive Summary

Background

A hemodialysis patient's vascular access is truly his/her lifeline. In the U.S. at the end of 2000 nearly 300,000 individuals were relying on a vascular access to receive hemodialysis treatment three times a week. Without routine access to the blood stream, hemodialysis would not be possible. An ideal access provides a blood flow that is adequate to meet the patient's dialysis prescription, has a long life, and has a low rate of complications. Although no type of access in current use meets all these criteria, various groups and a few studies have recommended the Arteriovenous Fistula (AVF) over both grafts and catheters.

In 1997, the National Kidney Foundation published the Dialysis Outcomes Quality Initiatives (NKF-DOQI) Clinical Practice Guidelines for Vascular Access. The NKF-DOQI guidelines were developed to promote implementation of evidence-based clinical practice guidelines. The guidelines provide dialysis and surgical professionals with recommendations for optimal clinical practices, thereby increasing the quality of patient care, and positively influencing patient outcomes (NKF, 1997).

The DOQI Vascular Access Workgroup members concluded that the access type that comes closest to the ideal access is an AVF (NKF, 1997). Multiple published studies have shown that the AVF has superior 4-5 year patency rates and requires the fewest interventions compared to grafts and catheters (Churchill, Taylor, Cook, et al, 1992; Mehta, 1991). Concomitant studies have also shown lower annual surgical and hospitalization costs associated with the use of AVFs versus grafts (Feldman, Held, Hutchinson et al, 1993; Hakim & Himmelfarb, 1998). At least one study that looked at the correlates for patients who required multiple vascular accesses during their time on dialysis found that the odds of having four or more accesses was greatest in patients who had either catheters or grafts (Rodriguez, Lopez, Montse, et al, 1999). Finally, a recent study of infectious complications of hemodialysis access by Nassar and Ayus reveals that AVFs have the lowest risk of infection, catheters the highest, and grafts intermediate (Nassar & Ayus, 2001). These authors have also recommended increasing the placement of AVFs.

The NKF-DOQI Practice Guidelines workgroup recommended an AVF placement goal of 50% in all new patients, with an ultimate AVF prevalence rate of 40%. By meeting these goals, the DOQI Workgroup notes that quality of life and overall outcomes for hemodialysis patients could be improved.

Opportunity for Improvement

In the U.S., a number of explanations have been proposed for the declining rate of AVF use. Potential reasons include an aging population, increased numbers of diabetics and more frequent vascular disease. Other characteristics that have been related to differing rates for fistulas are patient gender and ethnicity with men having higher fistula rates than women and Caucasians having higher fistula rates than other races/ethnicities.). At least one U.S. Nephrology practice has been able to achieve a very high rate of fistulas despite all these factors. Dr. Vo D. Nguyen, a nephrologist practicing in Olympia, Washington,

has accomplished a 97.9% AVF rate in his hemodialysis patients. Dr. Nguyen reports that he has been able to accomplish this through team work, dedicated, well-trained surgeons, good long-term vascular access planning, and pre-op vascular mapping despite this population of patients having an average age of 62.2, being 65% female, 73.5% diabetic, 63% having peripheral vascular disease, 28% being obese, and 22% having been referred late for access placement.

Achieving quality by decreasing variation is a widely accepted concept in quality improvement. The 2000 CPM report identified geographic variation (15-40%) in the prevalence of patients using an AVF by ESRD Network region. Specifically, ESRD Networks located in the Northeast and Northwest (Networks #1, #3, and #16) had the highest AVF prevalence rates (range 35-40%), while ESRD Networks located in the Southeast (Networks #5, #6, #8, #13, and #14) had the lowest rates (range 15-24%). As previously noted, the AVF rate in Network #15 by CPM measurement in 2000 was 33% and as measured in the current Adequacy/Access QIP, 36.6%. Variation among the six states comprising Network #15 from 24.5-46.0% indicates an opportunity to increase fistula rates within Network #15.

The Quality Initiative

Network #15 will invite facilities, nephrologists and surgeons to collaborate in this project. Facilities will be selected to be in an intensive intervention group based on their percentage of patients who were reported in the current Adequacy/Access QIP, to have a fistula in January 2001. These facilities will be located in a major metropolitan area in one of two states that demonstrated the lowest percent of fistulas within Network #15. All new (incident) in-center hemodialysis patients who are 18 years of age or older in the selected facilities will be chosen to participate in this project. A pre/post study design will be utilized for this project. Baseline data will be collected for both the intervention and comparison groups, monthly data will be collected for the intervention population during the intervention phase and follow-up data will be collected for the intervention and comparison groups.

The potential root causes for low rates of AVFs are numerous. As we have learned from much of the preventive medicine literature, multifaceted or multi-component interventions have shown the greatest success. The interventions in this project will target multiple audiences and include multiple components for each. The interventions will include:

- Education
 - Face-to-face meetings with the project partners
 - K/DOQI Summary Paper on vascular access
 - Video materials and written information for patient and staff use
 - Fistula Care Packages
 - Community meeting presented by Dr. Vo Nguyen
- Data Feedback
 - Computer-based feedback report program
- Systems Review
- Vascular Access Team concept

The interventions will be carried out by the Quality Improvement staff of Network #15, under the direction of the Medical Review Board.

For further information, please contact Darlene Rodgers or Karen Strott at the Network office (303) 831-8818.