UPPER MIDWEST FISTULA FIRST COALITION

Upper Midwest Fistula First Coalition
ESRD Workgroup
Vascular Access Coordinator Project
September 2008

Final Report

Background

The Fistula First Breakthrough Initiative (FFBI) began in 2003 with the goal to increase the likelihood that every eligible patient would receive the best form of vascular access for that patient, with the majority being arteriovenous fistulas (AVF). The FFBI expert panel convened as part of this project and recommended 11 change concepts to improve the AVF rate across the US. One of the change concepts, Routine CQI Review of Vascular Access, highlighted an evidenced-based recommendation to designate a vascular access coordinator (VAC) in each dialysis facility to perform functions related to vascular access. Dinwiddie (2003) cites best practice responsibilities for a VAC as:

- Troubleshooting and referral for appropriate care of complications, such as stenosis and thrombosis
- Assess new and established patients vascular access status and needs and organize appropriate interventions per nephrologists orders
- Oversee data collection and management
- Organize and maintain a CQI process that involves all members of the vascular access team
- Interact with dialysis staff to assure ongoing access monitoring
- Assure patient and staff teaching and support

The ESRD Workgroup of the Upper Midwest Fistula First Coalition identified with one regional group of dialysis facilities in Network 11 who had improved its AVF rate from 33% to over 60% by implementing a VAC program. The workgroup identified the VAC strategy as one that could spread improvement to other facilities in Network 11. An environmental scan was created by the workgroup to assess the needs of their five state region, which included Michigan, Minnesota, North and South Dakota, and Wisconsin, by collecting information about the use of VACs in dialysis facilities. The workgroup hoped to use this information to identify needs for education still needed for facilities that had a VAC in place, and provide technical assistance and education for those that did not have a VAC in place.

Method

Dialysis facility demographic information was retrieved from Renal Network 11 facility database. A questionnaire was developed that asked facilities about their practices of using a VAC in their facility. The questionnaire was reviewed and approved by the ESRD workgroup, the Upper Midwest Fistula First Coalition, and the Centers for Medicaid and Medicare Services. Questionnaires were sent to facilities by email and were returned to the Renal Network 11 office via facsimile, email, and mail for four weeks after distribution.

Results

1. Participation. All facilities eligible to participate in the Fistula First initiative were asked to complete the VAC questionnaire. Of these 374 facilities, a total of 253 (67.7%) completed and returned the questionnaire. Figure 1 shows a breakdown of questionnaires that were received by state and provider. All states other than Michigan had a return rate of over 70%, and just over half of facilities in Michigan participated in the questionnaire. Participation by provider had little variability, with over 60% of participation coming from large dialysis organizations (LDO), non-LDO regional chains, and independent facilities.

2. VAC Prevalence. Over half of facilities (57.3%) reported that a VAC was in place at their facility. When compared by state, Wisconsin reported the lowest prevalence of VACs, where as the other four states reported higher results. When compared by provider, one LDO reported a significantly higher prevalence of VACs over the remaining LDO, non-LDO regional chains, and independent providers. See Figures 2.

Figure 1. State and Provider Comparison of Questionnaire Participation

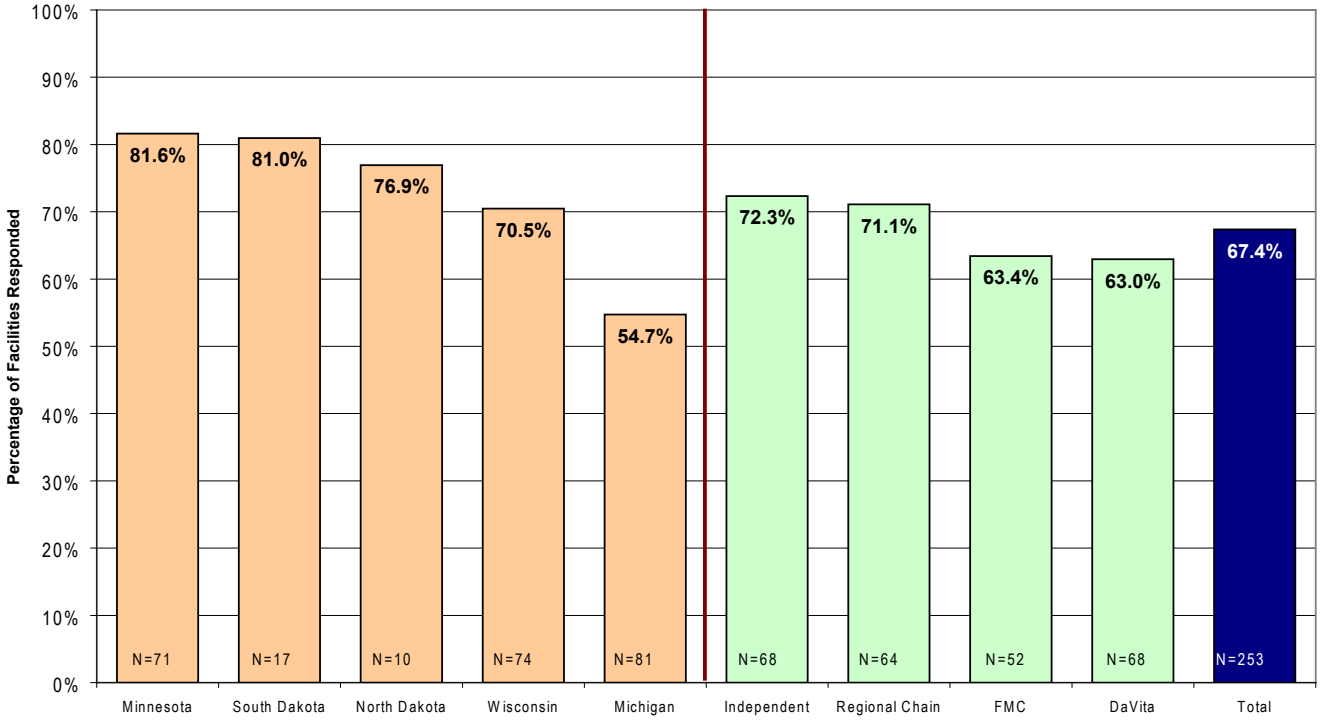
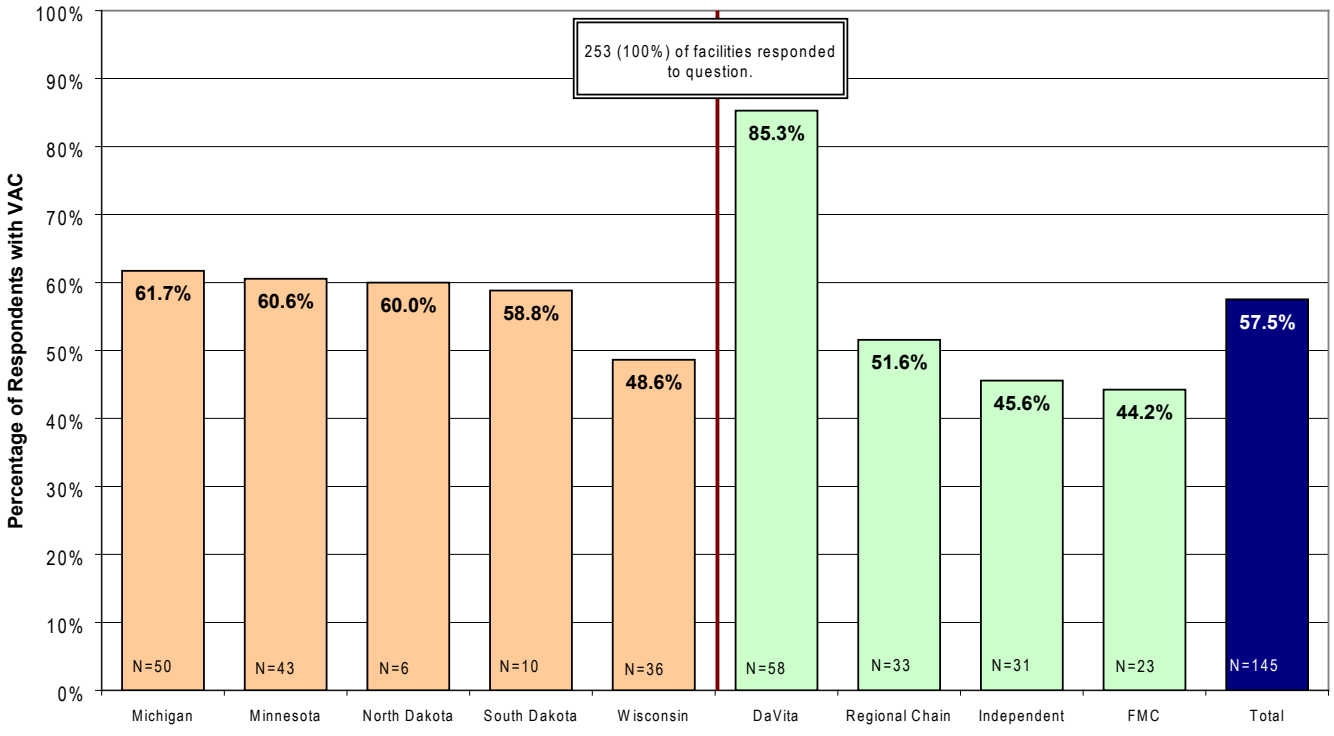
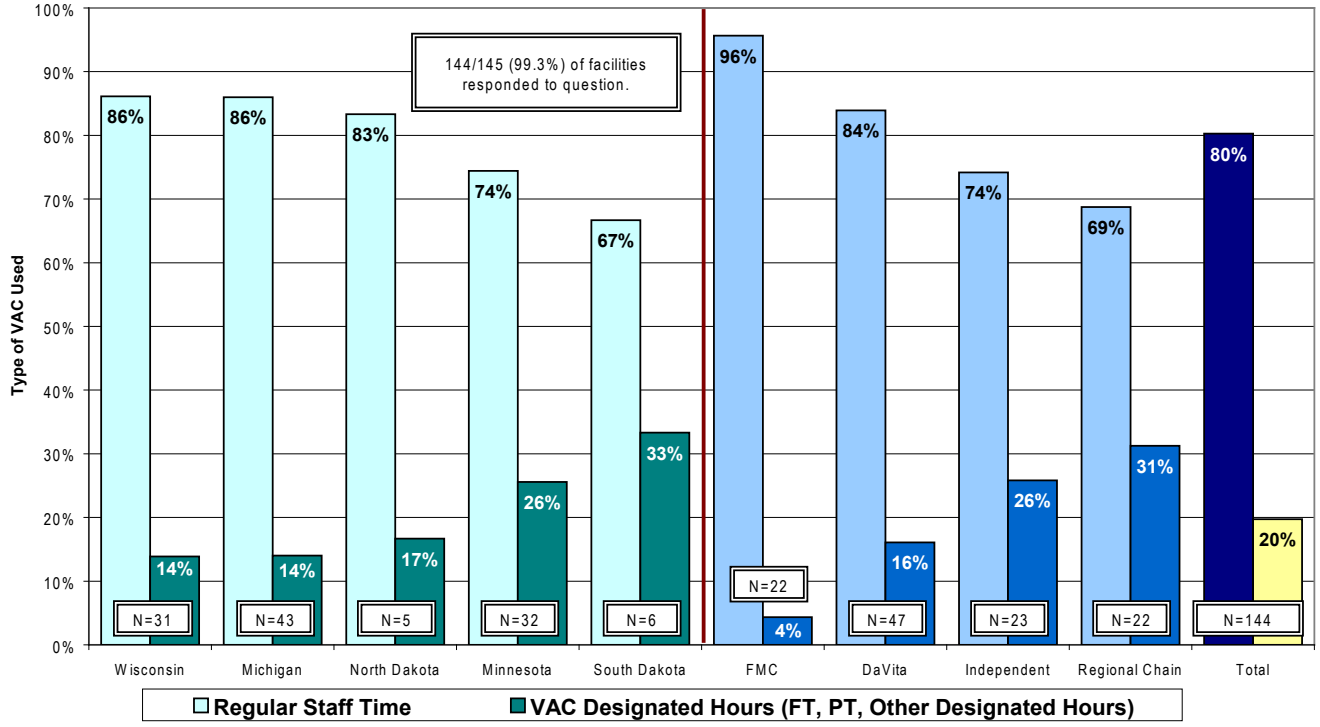


Figure 2. State and Provider Comparison of VAC Use



3. VAC Type. The questionnaire also asked facilities about the type of VAC in place at their facility. Several patterns of VAC roles emerged. Options included a full-time staff which performed 100% of duties in vascular access, a part-time staff which performed 100% of duties in vascular access, a designated staff with a specified number of hours designated toward vascular access, and a designated staff who performed vascular access roles during normal work-time (no designated hours). Figure 3 shows that over 80% of facilities reported that the VAC completed vascular access related duties during their regular staff time, so that no designated hours or positions were set aside for vascular access related tasks. This pattern persisted across all five states, though the Dakotas did show a higher rate of designated hours for VAC duties. When compared

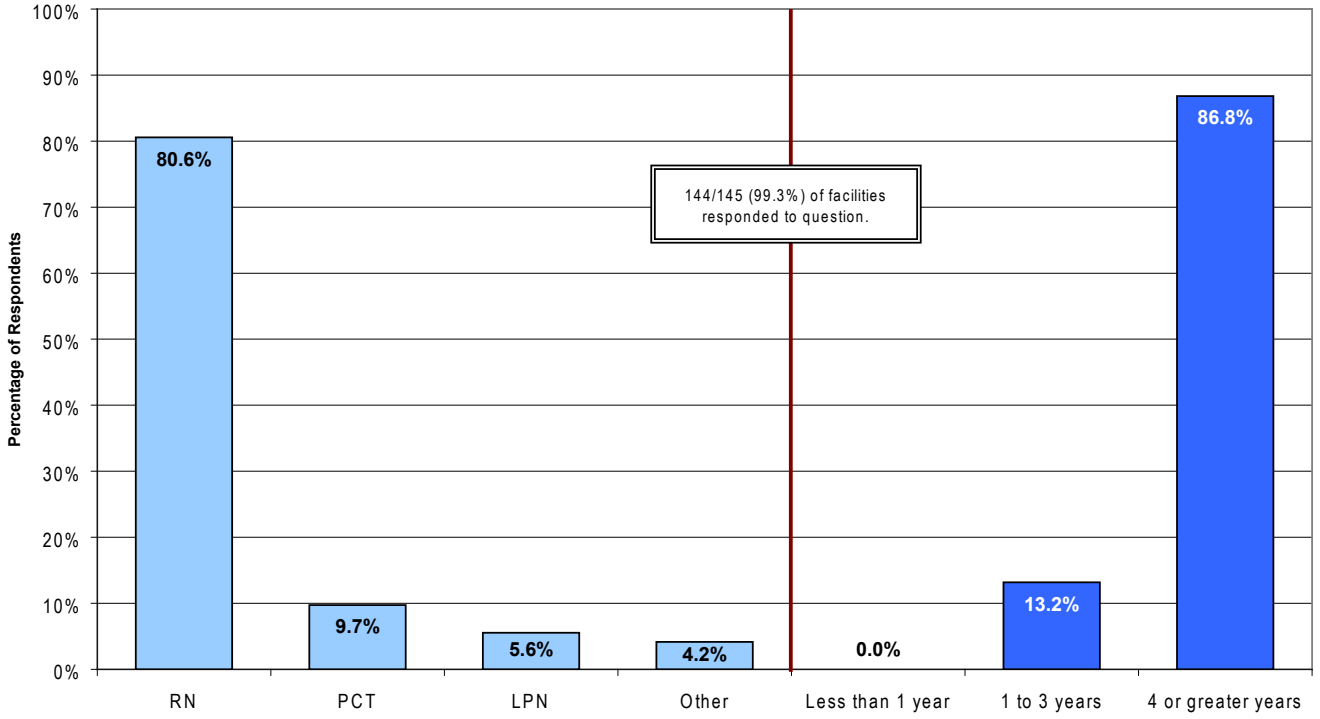
Figure 3. Provider Comparison of VAC Use



by provider, there was little change in how the VAC role was designated, though the non-LDO regional chains were more likely to have a full or part-time position designated for vascular access duties.

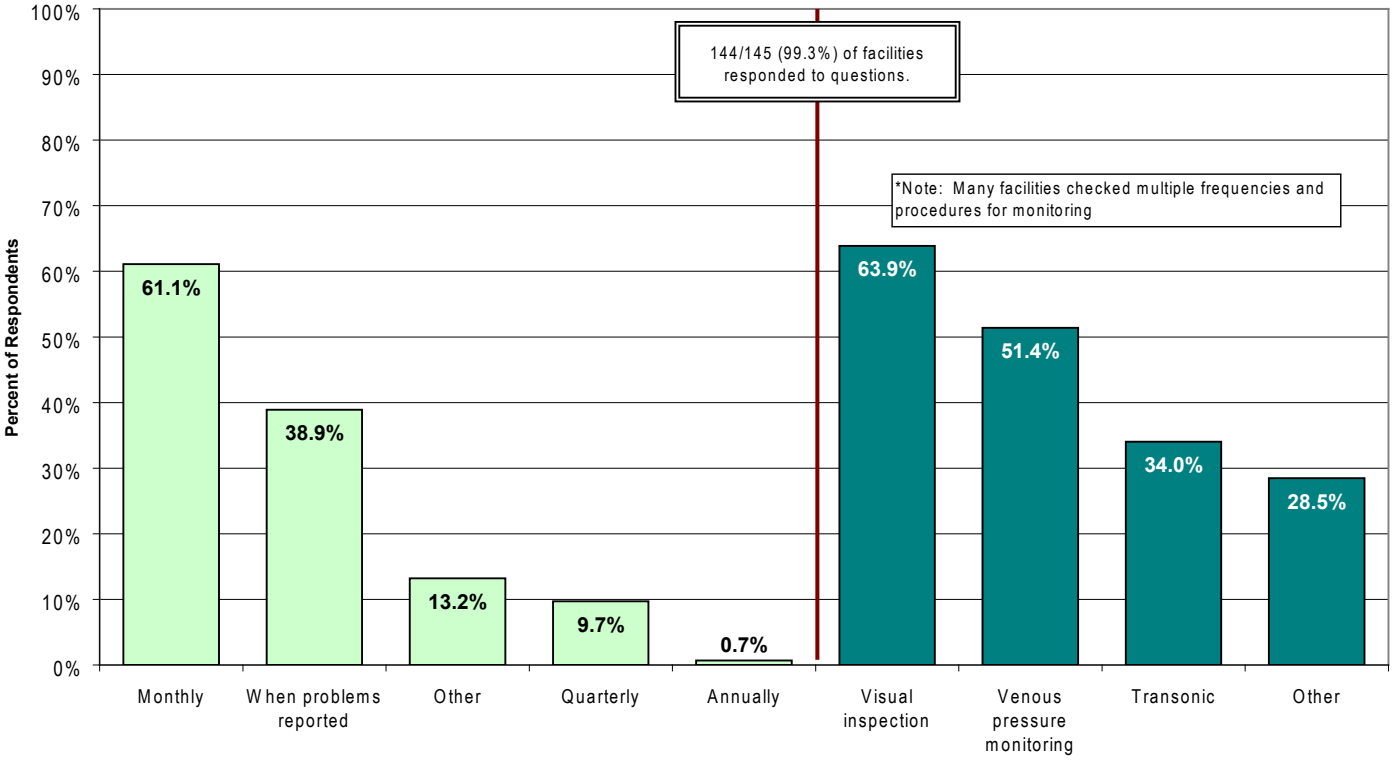
4. VAC Background: Participants were also asked about the clinical background and the number of years the VAC has been providing renal care to patients. Figure 4 shows that over 80% of facilities reported that the designated VAC had a clinical background as a registered nurse, with the majority of facilities (86%) also reporting that their designated VAC had greater than 4 years renal experience. No facilities reported using a VAC with less than 1 year renal experience. A few facilities reported the use of a licensed practical nurse or a patient care technician as the designated VAC, and a small number reported using other personnel, including a nurse practitioner, physician assistant, medical assistant, and registered dietitian.

Figure 4. Comparison of VAC Clinical Background and Renal Experience



5. VAC Roles. Facilities were asked about the duties performed in vascular access management at the facility. In nearly all facilities, the VAC was reported to be responsible for routine access monitoring, though many facilities also reported that other staff were also responsible for conducting this monitoring. Most facilities (61%) reported that access assessment was done at least monthly, but many facilities stated that it was also done at other frequencies including weekly, as needed, or every treatment. See Figure 5. Facilities reported using various types of monitoring tools including Transonic or equivalent equipment, visual inspection, venous pressure monitoring, or other procedures, such as machine access flows, blood flow rate monitoring, doppler studies, recirculation studies, and fistulograms.

Figure 5. Vascular Access Assessment Trends



6. VAC's Role in Surgeon Communication. Over three-quarters of facilities report their VAC having responsibility in communicating with surgeons regarding patient vascular access placement. Facilities report some variability in how often and in what format facilities are communicating with surgeons, as shown in Figure 6. Many facilities reported the development of vascular access meetings and task forces, in which the surgeon has become part of the interdisciplinary team responsible for improving vascular access at the facility level.

7. VAC's Role in Patient Education. The majority of facilities (83.2%) that responded report that the VAC is responsible for patient education, though they cite various intervals for when patient education occurs. Nearly all facilities educate patients during vascular access problems or upon admission, but ongoing patient education takes place less frequently. See Figure 7.

8. Patient Resistance. Facilities were also asked about the prevalence of patient resistance to AVF placement in their facilities. The ESRD workgroup had identified resistance as a potential barrier to a more rapid improvement in the placement of AVFs. Surprisingly, only slightly more than half (59.7%) of responding facilities reported that patient resistance is a concern at their facility. Workgroup members had initially thought that close to 100% of facilities would site resistance as a concern. Figure 8 shows that for facilities that do report resistance as a concern, various obstacles contribute to the resistance including fear of needles, fear of surgery, time to allow cannulation sites to clot, and geographic distance to a surgeon. Reasons in the other category include body image concerns, ease of using catheter, failed AVF in past, fear that AVF will fail, patient perception that AVF is not necessary, patient perception that transplant will occur soon, and patient perception that their kidney disease would resolve.

Figure 6. VAC's Role in Surgeon Communication

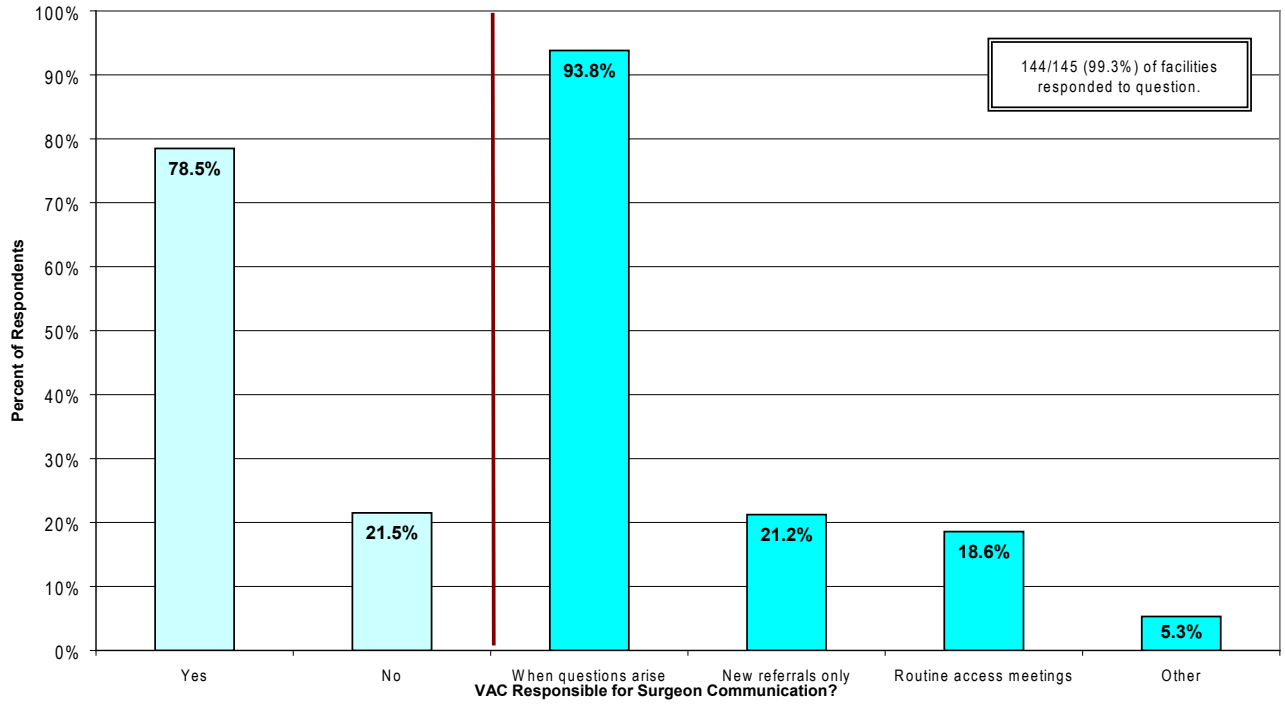
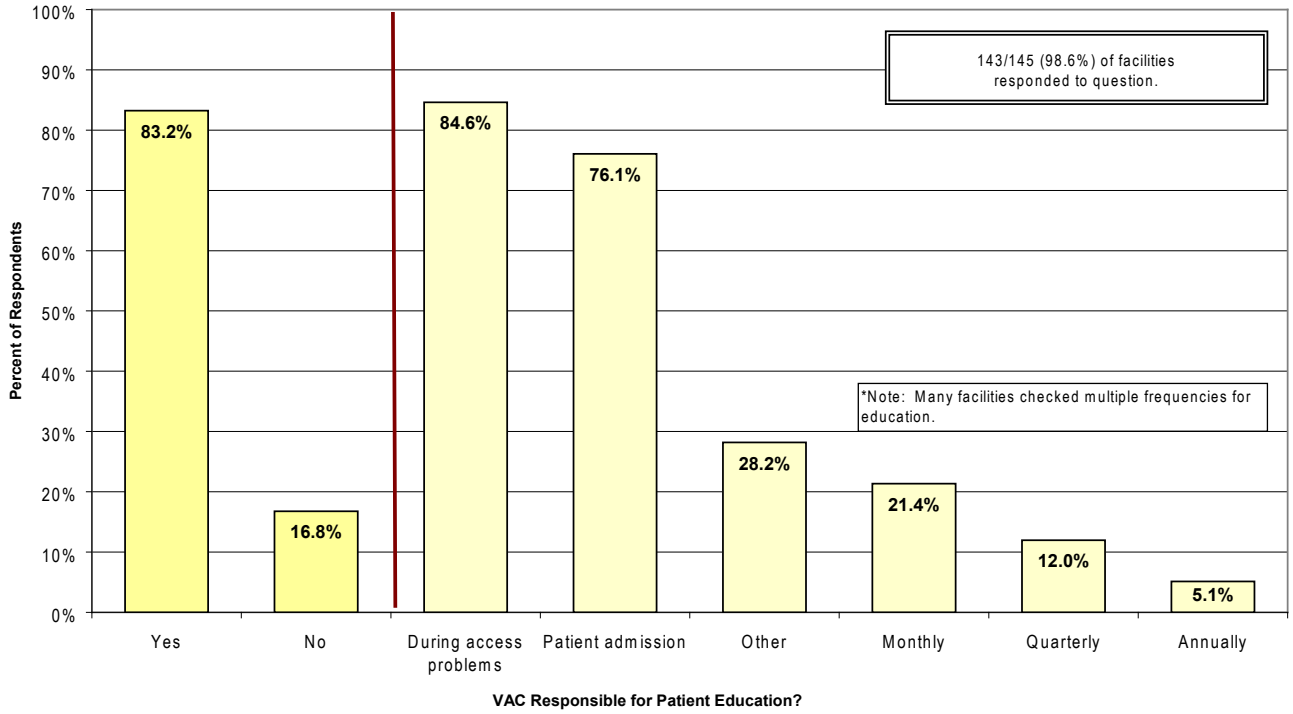
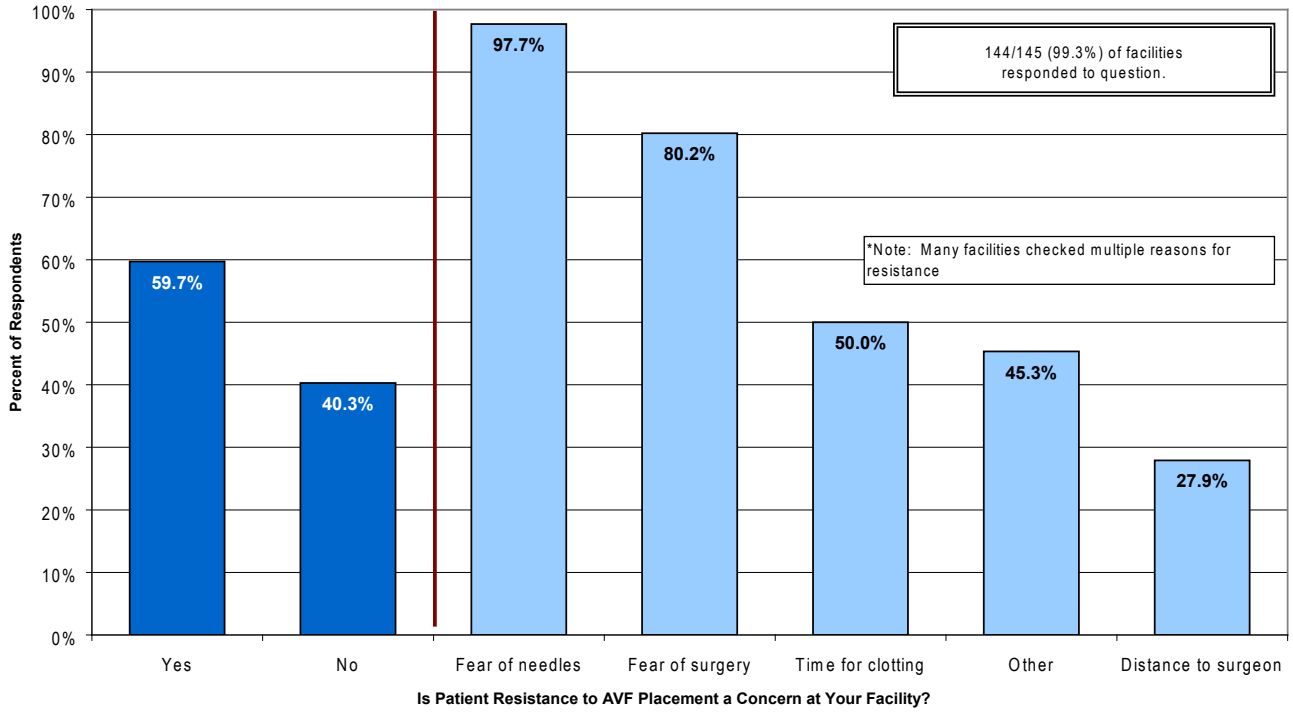


Figure 7. VAC's Role in Patient Education



9. VAC Educational Support: Facilities that report having a VAC in place stated that they receive ongoing support and education through various resources. Two-thirds of facilities (66.0%) report having regularly scheduled vascular access meetings within their organization, nearly one-third (30.6%) report getting support and education through regional and national conferences, and about 17% report taking part in VAC meetings external to their organization. Even with this education, facilities cite that ongoing education and support for VACs is still needed. Many themes were identified as areas needing further education for the VAC role. These themes include working with surgeons, training direct care staff to both conduct patient education and improving cannulation skills. Several additional VAC education needs were identified in the other category including convincing patients to have AVF placed, how to detect access problems, how to manage

Figure 8. Facility Prevalence of Patient Resistance to AVF Placement



time more effectively, learn about new vascular access techniques, and learn how to effectively monitoring vascular access. See Figure 9. With these education needs identified, nearly 80% of facilities stated they would have interest in participating in vascular access education programs. Facilities who were interested in further educational and support opportunities were asked about their interest in Webex seminars, routine conference calls with other VACs, and an email list serve. Facilities gave varying responses for their interest in these types of programs, but Webex seminars was the most popular venue with over 80% of facilities showing interest in that option. See Figure 10.

Figure 9. VAC Education and Support Needs Identified

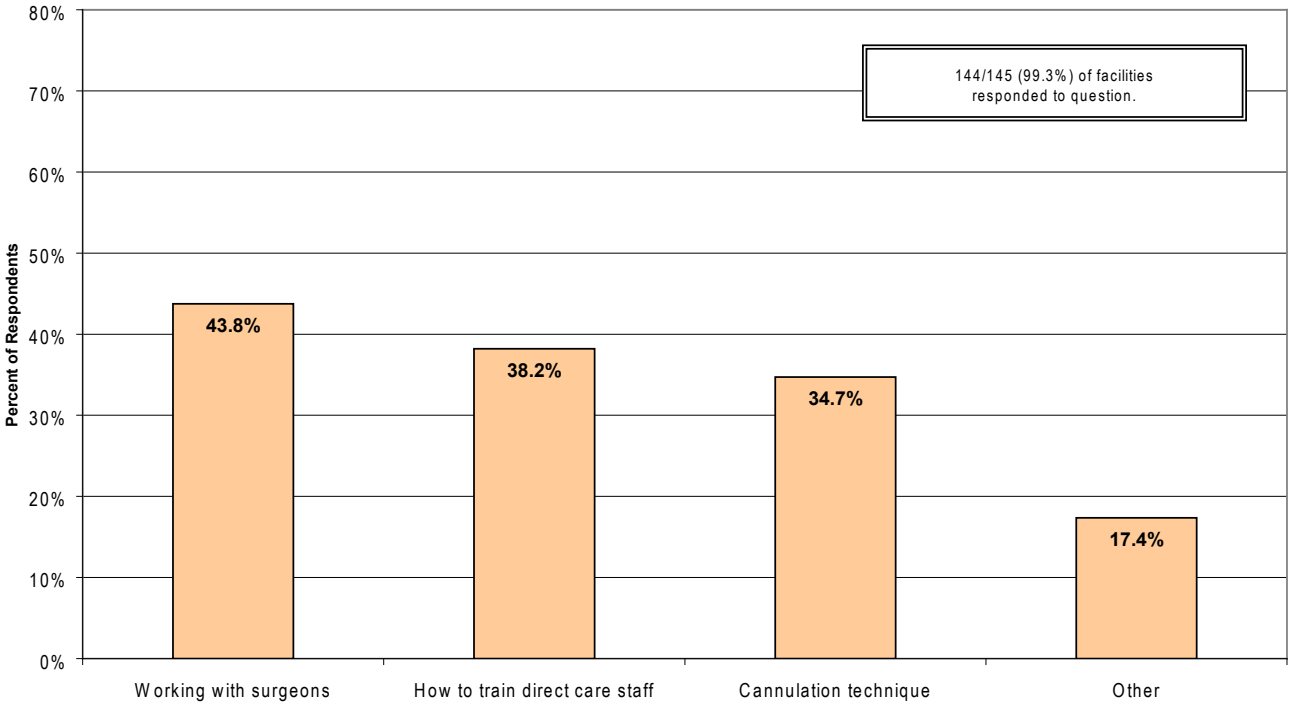
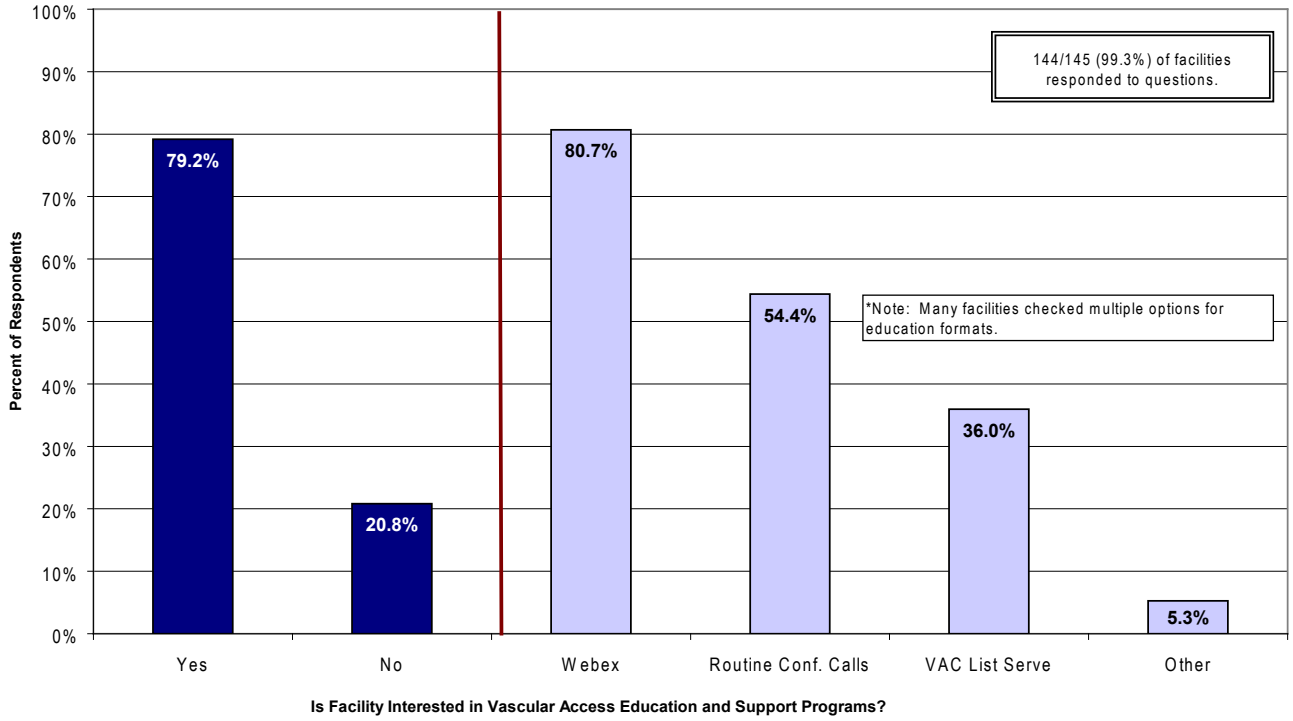
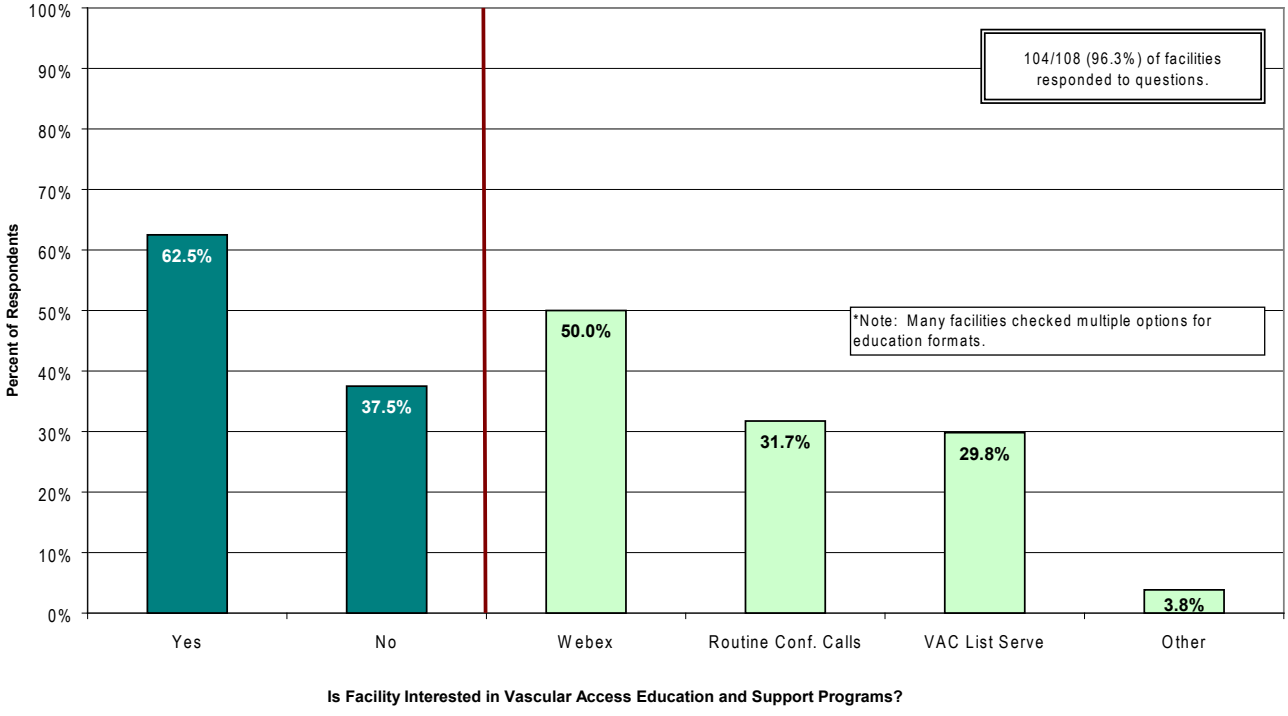


Figure 10. VAC Education Interest



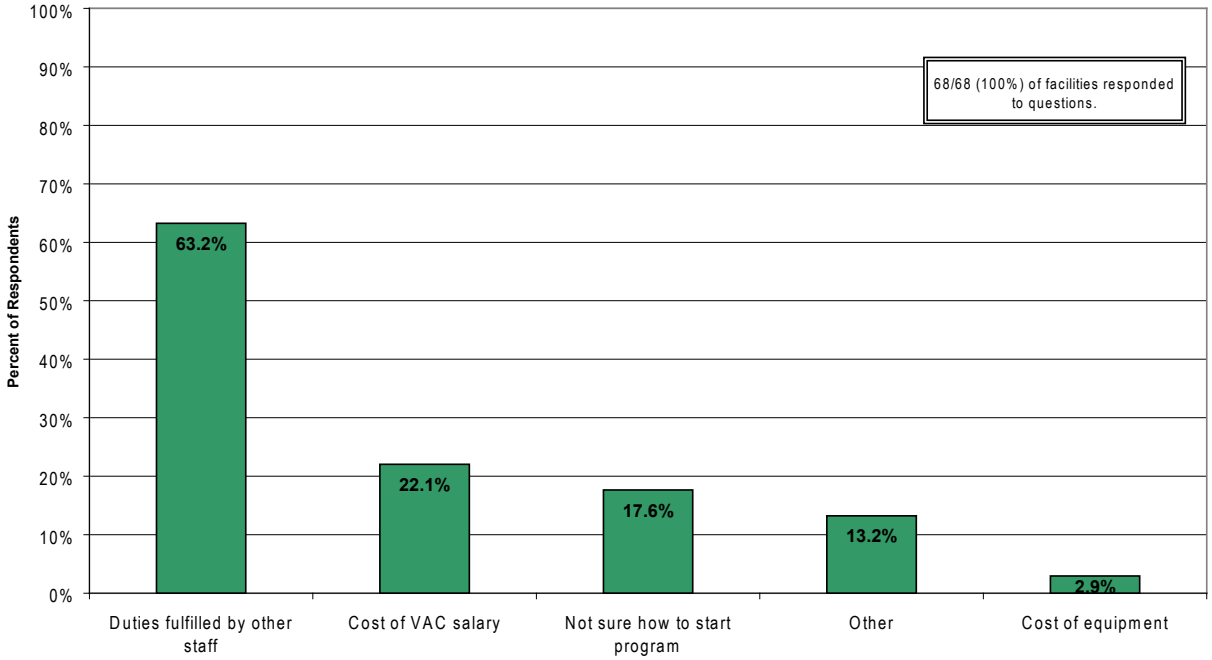
10. Education for Facilities with No VAC in Place: Overall, 108 facilities responded to the questionnaire stating that no VAC was in place at their facility. We asked these facilities about their education needs in the area of vascular access and if they had plans in the future to have a VAC in place at the facility. Almost 70% of facilities stated they had no plans to have a VAC in place at their facility. The remaining 30% stated that they either had plans to have a VAC in place within the next 12 months (20.4%), or they planned to have a VAC in place sometime in the future, but not in the next 12 months (10.2%). Despite the number that did not plan to place a VAC in the facility, nearly two-thirds of facilities stated that they would be interested in further vascular access educational opportunities (62.5%). Figure 11 shows the breakdown of education interests for facilities with no VAC in place. Facilities that have no plans to place a VAC were asked about the reasons. Figure

Figure 11. Non-VAC Facility Education Interest



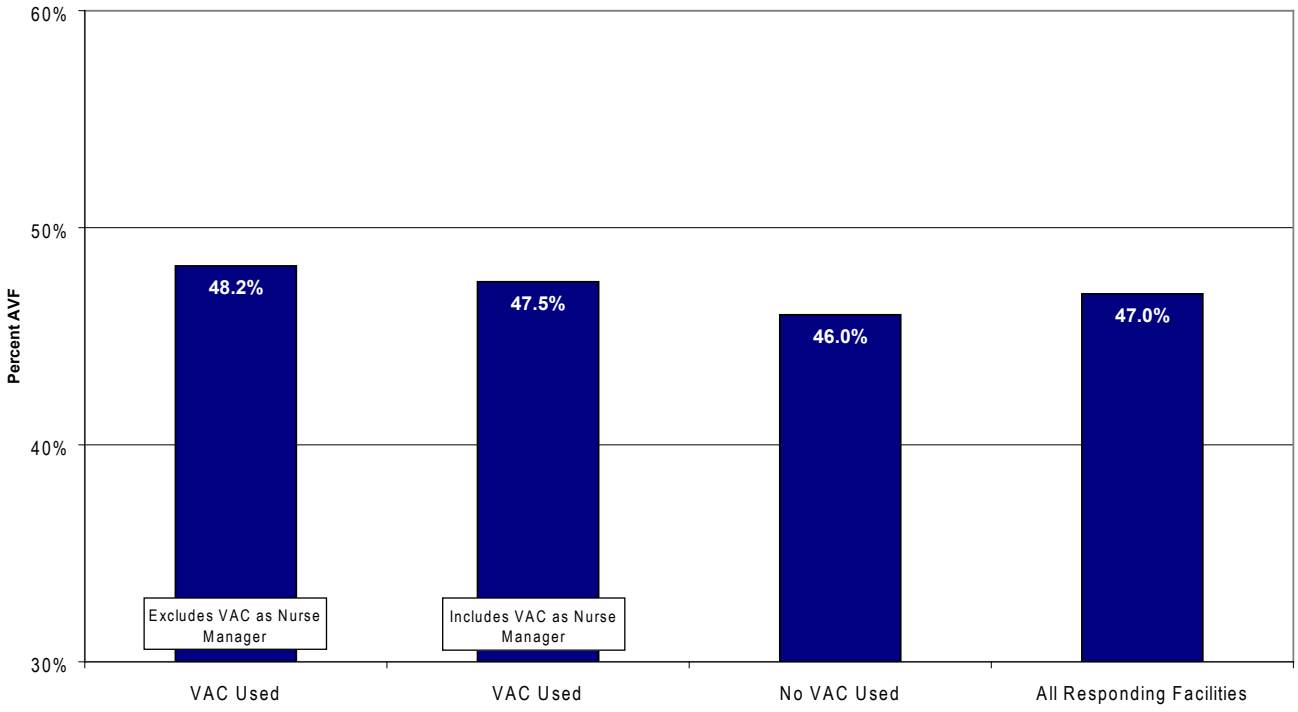
12 shows the breakdown of the reasons offered, but nearly all facilities stated that the primary reason for no VAC plans was because the duties were already being performed by another staff member not formally in a VAC role. There were also other reasons cited including the cost of VAC salary, cost of equipment, and unsure how to begin VAC program. There were also a number of reasons stated in the other category including physician issues, pediatric population, facility with very small census, and staff unwilling to fill VAC role.

Figure 12. Barriers to VAC Placement



11. VAC Impact on AVF Improvement: Overall, facilities that have a VAC in place did show a higher rate of AVF prevalence, as shown in Figure 13. Nurse managers functioning in a VAC role show higher rates of AVF prevalence over those who have no VAC in place, but slightly lower rates than those facilities with a dedicated staff performing the VAC function. The questionnaire did not ask facilities the start date of VAC placement, and so it is difficult to measure the impact of VAC placement on overall AVF improvement.

Figure 13. Comparison of AVF Prevalence by VAC Placement, May 2008



Conclusions

The ESRD workgroup developed the VAC questionnaire to learn more from facilities how the strategy of VAC placement can impact AVF improvement, and if the strategy can be spread to other facilities in Network 11. Through the questionnaire, the workgroup made several conclusions about the impact of VAC placement in Network 11, and from these conclusions developed new strategies to further support Network 11's goal to provide education to facilities that will facilitate further improvement in AVF prevalence.

Nearly 60% of facilities in Network 11 utilize a VAC in their facility to be the spokesperson for vascular access. Most VACs are trained clinicians with significant experience in giving renal care to patients. VACs have roles in the assessment and monitoring of vascular access, surgeon communication, patient education, and support of direct care staff caring for the patient's access. Facilities had great variation in how often and in what format these roles were performed. Facilities also shared a variety of internal and external resources for how the VAC received education and support. However, nearly all facilities agreed that ongoing support and education was needed and desired with the most popular format of education being Webex.

The remaining third of facilities that do not have a VAC in place equally share the desire for ongoing support and education in the area of vascular access, even though the majority of them have no plans to implement a VAC program. The group also agreed that Webex presentations would be the desired format for continued education and support.

Fistula First outcomes data shows that facilities with a VAC program in place do show higher percentages of AVF prevalence, with facilities with a dedicated full-time or part-time VAC showing the greatest percentages of AVF prevalence. Barriers exist for facilities that do not have a VAC in place, and the data shows that overcoming these barriers would likely bring AVF improvement to these facilities as well. Barriers, such as patient resistance, also plays a role for facilities with a VAC in place, and reducing these barriers will also bring improvement to facilities with a VAC program.

With these conclusions, the ESRD workgroup has identified two strategies to help facilities improve:

1. Facility and VAC Education: A series of Webex presentations will be offered to all Network 11 facilities. Presentations will include a 30 minute presentation, and an additional 30 minutes for questions, feedback, and sharing between VACs. Each presentation will be recorded and distributed to all facilities, including those not able to attend. Themes for the presentations include surgeon communication, cannulation, patient resistance, and staff education.

2. Addressing Barriers--Patient Resistance: The ESRD workgroup formed a subgroup to begin addressing the barrier of patient resistance. A number of patient focus groups were conducted to learn from their experiences. From this strategy, several barriers were identified as slowing or preventing AVF placement. Next, a patient/staff resource guide will be developed to help facilities overcome these barriers.

Dinwiddie, L. (2003). *Investing in the Lifeline: The Value of a Vascular Access Coordinator.* Nephrology News & Issues: May, 2003.

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