



Vasc-Alert as a Tool for Case Management of Vascular Access Sites in Hemodialysis Patients

For any organization that is concerned with improving long term outcomes while reducing overall costs, Case Management has been shown to be an effective tool. For CKD Stage 5 patients, quality of care is often measured by the efficacy of the dialysis treatment, the morbidity and mortality rates within this patient population, and by the perception of the patient in the coordination of their care.

The top two clinical areas that impact morbidity and mortality rates in the CKD Stage 5 patient and carry the largest burden of costs are related to Cardiovascular and Vascular Access. A number of recent journal articles have found that when the patient's vascular access is well documented, followed clinically, monitored consistently, and trended frequently through the use of a surveillance program, with all data being coordinated in a multi-disciplinary approach that leads to early referrals for possible intervention, the patient outcomes are far more positive and the cost of overall care is decreased. Many of the current Vascular Access Case Management and/or Physician Extenders/Vascular Access Coordinator Models of Care offer some of the best solutions to improving patient outcomes, thus reducing spending in one of the costliest areas of dialysis care-The Vascular Access.

Vascular access should be a key focus for all caregivers of the CKD Stage 5 patient as it is the patient's lifeline. The need to address and push for this focus on vascular access was apparent last year when the National Kidney Foundation published in the July 2006 *American Journal of Kidney Disease* with the release of the newly updated K/DOQI Clinical Practice Guidelines and Recommendations related to vascular access. This evidence-based update took the committee 2 years to complete with the recommendations and Clinical Practice Guidelines being the first update on vascular access since 1997. The Guidelines emphasize a number of key components for obtaining better outcomes while reducing overall costs associated with vascular access. Guideline 4- recommends including the use of a proactive surveillance program, along with the clinic's existing clinical monitoring program (which CMS considers as being in use in all dialysis clinics and paid for by CMS as part of the patient's composite rate). The underlying message of monitoring combined with surveillance was the need for proactive and timely intervention with a multi-disciplinary approach which may lead to better outcomes for the patient's vascular access site. "The Work Group recommends an organized monitoring and surveillance approach with regular assessment of clinical parameters of the AV access and HD adequacy." Additionally, the Fistula First initiative recommends that, "Facilities adopt standard procedures for monitoring, surveillance, and timely referral for the failing AVF."

The goals of the Vasc-Alert Surveillance Program are to provide timely reports that can show trend-over-time for each patient in a means so as not to overburden staff with the process and for the results to be easily accessible to the entire clinical team. The Vasc-Alert Surveillance Program can easily be adapted and integrated into to the day-to-day duties of a Hemodialysis Case Manager, a Nephrology Physician Extender, or a Vascular

Access Coordinator. With the advent of Vasc-Alert, a fully computerized surveillance tool, the opportunity exists to provide case managers with data that is available on individual patient trend analysis, based on each dialysis treatment and reflects the changing state of the patient's access. By 'testing' the access with each treatment, access problems can be spotted very early in the process. This allows for proactive referrals and timely intervention. Using the Vasc-Alert Model has been shown to reduce the thrombosis rate at a number of our client sites as well as add the benefits of better patient outcomes and increased revenue through containing costs by decreasing hospitalizations, emergent referrals and missed treatments. This is evident in a published article from one large center that started with a clotting rate of 0.6 events/patient/year and reduced the rate to 0.2 events/patient/year within 18 months after the introduction of Vasc-Alert as part of their vascular access management program.

Benefits of Vasc-Alert:

- Vasc-Alert 'tests' the access with every treatment. This results in multiple readings each week, with trending available much early than when compared to other surveillance programs that are invasive, staff dependent, and provided on a monthly basis. Vasc-Alert reports are available online weekly.
- Vasc-Alert has shown to be a very effective marker for identifying the growth of stenosis (arterial and venous) relatively early in the lesion development process for both fistula and grafts. True positive rates in excess of 90% are not uncommon.
- The Patient Detail report provides an overview of relevant information about the operational parameters of dialysis sessions, i.e. average blood flow rate, venous, and arterial pressures, thus bringing key clinical data together into one easily understood report.
- The reports for patients who are identified as 'at risk' for clotting are sent weekly. This allows a Case Manager to be proactive at the clinic level for the patient, bringing the most relevant cases to the attention of the Case Manager and the staff. This same information can be viewed online at any time, easily identifying patients to advocate for a referral for possible intervention. Coordinating with the intervention center is smoother since they and the patient can PLAN the scheduled intervention.
- Vasc-Alert provides information on grafts and fistulas, and on both the venous and arterial side of the access with equal results. All of this information is shown within one report including the trending of each element.

Besides our basic surveillance program, it is possible to incorporate resulting intervention data to be displayed as background information on the patient report. This could be provided either in graphic or statistical format. Data can be included that could assist in developing a CQI Vascular Access Program and measuring the outcomes at a number of clinical levels and from a wide range of providers. This could lead to identifying those practitioners who provide outstanding healthcare services to your patients.