Peripheral Vascular Care: Should You Have a "Vascular Center"?

By Barbara Sallo, RN, MBA

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Cardiovascular care is big business for hospitals. While a lot of attention and resources are directed to care and treatment of the coronary arteries, peripheral vascular (PV) care has gained momentum. Even though the dollars spent on PV care are significantly less than for cardiac, the patients are the same and PV care is an essential component of full service cardiovascular care.

Hospitals are researching the needs of their communities and determining whether they should have a PV care focus and what should that look like. Due diligence and business model planning will lead to the most appropriate answers. The outlook for potential patients is promising.

Today attention is becoming increasingly focused on vascular care, in light of dwindling open heart surgery volumes, reimbursements and increasing costs of supplies for cardiac catheterizations and interventions. Hospitals around the country are getting serious about capturing market share and centralizing services for peripheral vascular disease (PVD) care.

In the past, fleeting attention has been given to PV disease with some facilities providing PV services, but seldom was an entire program focused specifically on PVD. A number of factors have influenced the development−−or lack of development−−of these programs, with the greatest being PVD's "big sister," coronary artery disease, claiming most of the healthcare attention, to say nothing about its appetite for resources.

Should your hospital or health system focus on and commit resources to enhance PVD services? What is the market opportunity? What is the revenue potential? What does a "best" program look like? Spending time completing research and working through these questions will take the guesswork out of identifying the emerging opportunity for peripheral vascular disease care for your organization.

What is PVD?

PVD is a condition in which the arteries that carry blood throughout the body become narrowed or clogged. This interferes with the normal flow of blood and can cause pain, physical limitations and reduced quality of life.

The most significant risk factors for PVD is age. The older population is projected to double over the next 30 years, reaching 70 million by 2030, escalating the demand for PVD care. A national study: PAD Awareness, Risk and Treatment−−New Resources for Survival (PARTNERS published in the

Journal of the American Medical Association, JAMA September 19, 2001) found that PVD is seriously under−diagnosed and under−treated. The American Heart Association and Harvard Health estimate:

ØPVD cases are diagnosed each year.
ØEight to 10 million Americans are affected.
ØPVD is two to five times more common in men.
ØPVD patients have a six−fold higher death rate from cardiovascular disease.
ØPVD patients have a 15 percent chance of dying within five years when symptomatic.
ØPVD patients have a 50 percent chance of dying within 10 years from PVD.

What is the PVD Market Opportunity?

The patients at risk for coronary artery disease are the same patients that will be at risk for PVD. The arguments for concentrating efforts on care specific to this patient population makes good business sense−−the patient populations are synergistic and currently interventional radiologist, vascular surgeons, primarily care physicians and most recently cardiologists can diagnose and treat the conditions. The increase of patients presenting with symptoms and needing access to care for PVD conditions is anticipated to grow significantly over the next twenty years as shown in Exhibit 1.

Often times, hospital business development and planning departments are charged with defining the market for services and estimating the demand and revenue opportunity. The feasibility models start with identifying the population at risk and applying utilization rates to determine procedure and admission volumes. PVD care has been tracked and measured but estimates are considered to be low because it is believed that older adults have, in the past, lived with their "disability", accepted limitations and pain with ambulation, and attributed nocturnal leg pain and cramps to "old age". The demanding "baby boomers" are expected to be less accepting of these disabilities as they become octogenarians.

A reasonable approach to estimating demand:

ØReview national prevalence and utilization rates that are available from the Vascular Disease Foundation or The Agency for Healthcare Research and Quality
ØReview state utilization rates, if available, as they will provide a more realistic representation of specific geographic areas
ØApply these rates to the population served by the facility, by age group, to obtain the available market estimates as shown in Exhibit 2

Who Treats PVD?

Treatment for PVD can follow three main pathways:

ØNoninvasive disease management that includes risk−factor reduction, medications to relieve symptoms while increasing exercise tolerance, including gene−based therapy.
ØSurgical intervention that is safe and effective for many patients in whom less invasive procedures are not adequate.
ØCatheter−based treatments that have an important and increasing role in the treatment of PVD and are being substituted for surgery.

Primary Care Physicians are often the first provider to identify the problem. Cardiologists may identify PVD during cardiac catheterization procedures. The more complicated issue related to PVD is which specialist should provide treatment once the disease has been diagnosed. Traditionally, interventional radiologists and vascular surgeons have treated patients with advanced stage PVD. With the advancement of catheter−based interventions, cardiologists are increasingly diagnosing and treating PVD in the catheterization lab setting. This shift has set the stage for cultural and political "turf wars"

that need to be addressed and resolved if a hospital is to have a full service, integrated program.

What are the Components and Design of a Vascular Center?

The "Vascular Center" can have a distinct physical plant location or can be developed as a "virtual" care model. It is certainly recommended that some or most of the "front door" areas are designed to be patient friendly and centralized with good signage and convenient parking. The majority of the PVD care is outpatient and the population is challenged to walk long distances.

The designated Vascular Center can be the main geographic location for admissions and screening functions providing the referral and coordination for additional diagnostic studies and treatment. Additionally, prevention, education and outreach staff can be housed in this area and can support a "cross functioning" staff model. A sample design for a Vascular Center is shown in Exhibit 3.

In addition to the patient entrance and medical staff/exam location there are a number of additional components located in areas throughout the hospital that provide services for the PVD patient:

1.The Noninvasive Lab: ideally located in or close to the Vascular Center, performs a comprehensive range of testing to diagnosis PVD, and should provide same day testing with rapid report turnaround, utilizing a dedicated staff. It is advisable for the Noninvasive Lab to be accredited by Intersocietal Commission for Accreditation of Vascular Lab and/or American College of Radiology Accreditation.

2.Magnetic Resonance Angiography: a diagnostic tool for PVD that has the patient benefit of not requiring contrast use and few procedural side effects. The equipment requires specialized software and personnel education. A new type of contrast (MS−325) to be released next year will offer additional imaging potential.

3.Radiology Suite: provides diagnostic and intervention procedures and advanced imaging quality. It is still considered the "Gold Standard" for diagnostic testing, invasive procedures using both radiation and iodine based contrast. Procedures are performed typically by interventional radiologists.

4.Cardiac Catheterization Lab: typically used for cardiac procedures, however, underutilized labs may provide accommodation of advanced imaging for PV catheter based procedures. Labs with high cardiac volumes may prohibit PVD procedures and non cardiology practitioners are not always made welcome.

5.Operating Room: can be equipped to provide advanced imaging for catheter based minimally invasive procedures, should involve vascular surgeon in imaging choices, fixed equipment may limit the room flexibility, sterile environment offers advantages for PVD procedures, supplies of stents and catheters should be controlled/coordinated with radiology and cath lab

6.Wound Healing Center: PVD is a common diagnosis for patients with non healing wounds. These patients may utilize the services of the wound center resulting in the need for good coordination between the Vascular Center and Wound Center if they not located within the same department.

What are the Staffing Considerations of a Vascular Center?

A number of physician disciplines have experience and involvement with vascular care. Today, we are seeing the emergence of the Vascular Medicine Specialist. This physician often has a background in family practice and/or internal medicine. They can serve as the Medical Director of the Vascular Center. This individual determines the appropriate referral of patients to the most appropriate sub specialist and maintains the continuum of care process with daily rounding on all inpatients. The Vascular Medicine Specialist which is most common at academic medical centers can serve as attending physician for Interventional Radiologists. They also can be responsible for reading and reporting on vascular tests.

While this physician staff model is growing in popularity, historically many different types of physicians

have been in charge of patients' PV care as shown in Exhibit 4.

The nursing and technical staff has had a "home grown" tendency as it has only been of late that the rationale for dedicated, trained and focused staff has taken off. The role and function of the personnel vary from hospital to hospital but some distinct models are developing as shown in Exhibit 5.

What is the Revenue Associated with PVD Care?

If PVD services are provided in existing surgery and interventional radiology suites, no additional capital costs can be expected. The expansion of catheter−based care in the cath lab to include peripheral vascular interventions will give rise to additional expenses. Imaging requirements for the PVD patient may require new equipment purchases but many hospitals have been able to use existing coronary cameras. Specialized supplies are also required. Staff education and training must be expanded to include peripheral procedure techniques and potential PV complications.

Revenue from PVD care provides the opportunity for healthy margins for hospitals. Medicare contribution margins for vascular DRGs compare favorably with cardiac DRG margins. Across all vascular DRGs the average contribution margin (revenue less direct costs) is more than 30 percent (Source: Market Insights, Inc., San Francisco; Cardiovascular Roundtable analysis 1999).

While there are no statistics on the revenue generating figures for interventional radiologists and cardiologists treating PVD, a recent survey provides that information on vascular surgeons. Results from a survey of 1,200 hospital CFOs reveals that vascular surgeons generate an average of $2.2 million in revenue−−derived from referrals and associated treatments−−for their affiliate hospitals each year as show in Exhibit 6.

Where to Go to from Here?

Cardiovascular care is big business. This year alone, the American Heart Association anticipates that $329 billion will be spent on this patient population. While the PVD portion of the total is significantly

smaller than the cardiac portion, the patients are the same. Peripheral vascular care is an essential component of full service cardiovascular care.

There is no question that the number of PVD patients is growing and these patients are underserved today. Hospitals must decide how to best care for this population. One of the first steps is compiling a PVD dedicated business plan that covers:

ØMarket size/opportunity
ØCompetitive environment/issues
ØScope of service
ØPhysician specialties/medical coverage
ØClinical operations model
ØMarketing and outreach initiatives
ØFinancial requirements/assumptions
ØStructure/governance/ownership
ØConditions for success
ØImplementation recommendations and timeline

With the growing trend toward healthcare self−education supported through the press and the Internet, the public is becoming increasingly aware of the potential dangers of untreated vascular disease. Quality of life has taken on new meaning and the older population will continue to seek healthcare resources that will enable them to maintain active lifestyles. Be prepared for the baby boomers to seek out and demand assessment and treatment of peripheral vascular problems.

Barbara Sallo, RN, MBA is the President of Health Care Visions, Ltd. a cardiovascular consulting firm based in Pittsburgh, Pennsylvania. The firm brings extensive knowledge and expertise in this area of clinical care. Health Care Visions, Ltd. has assisted a multitude of hospitals in all phases of cardiovascular programs from market assessments, program assessments and feasibility studies to business planning and implementation.

Natural Headache Relief

By Andrew C. Povel

Many prefer natural headache relief because of the side effects of drugs. Natural treatments are generally harmless and it often makes sense to combine different solutions.

Headaches or migraines can have different reasons. Some natural treatments work therefore better for certain headaches than others. Assuming that your headache is not the result of a disease then you have either tension−type headaches or vascular headaches.

Tension−type headaches are simply caused by overstraining of muscles. That can be strain of the eyes, face, teeth or muscles in the neck for instance. Relaxation and massage of these muscles can bring immediate relief. Vascular headaches are caused by a dysfunction of the blood flow in the head. For still unknown reasons the blood vessels in the head take too much blood, dilate too much and causes the pain. Narrowing the arteries brings relief.

Natural headache remedies which can influence these causes can bring pain relief. Here is an overview of what you can do. Many of the following tips are also useful in preventing headaches or migraines. Some are good to fight the pain when the headache has started already:

1. Affect the blood circulation by taking a hot/cold bath or shower, making a cold compress to your forehead, a hot or cold compress to your neck or/and put your feet in hot/cold water.

2. Feverfew tee has been a well known migraine treatment since centuries.

3. Drink a cup of strong coffee. The caffeine narrows the arteries.

4. Lavender and peppermint can relax. You can drink a tea or apply the oils to your temples, neck and hairline.

5. It's reported that many foods can trigger headaches. Avoid refined sugar, sweeties, gums. Avoid cold stuff like ice cubes and ice cream as the sudden cold can cause headache. Avoid too much salt.

6. Relaxation in a darkened room brings relief. Lie down and take slow deep breathes.

7. Avoid skipping a meal. If you haven't eaten since a while and the headache starts, it can be because of the low blood sugar. Eat or drink something that gives you energy quickly, like fresh fruits or fresh juice but...

8. ...Avoid refined sugar at any case. Refined sugar will increase the blood sugar quickly and then it will drop quickly again. This can be a cause for migraines.

9. Avoid bright or flashing lights.

10. Reduce stress.

11. Take supplements like magnesium, vitamin C, B vitamins (choline, niacin), tryptophan.

12. Use Biofeedback and learn to control your body functions better.

13. Acupuncture has helped many people with headaches and migraines.

14. Aromatherapy can bring relief. Sniffing essential oils like lavender, peppermint or marjoram or applying them to the temples can help.

Andrew C. Povel is an expert in headaches and migraines and provides detailed information on symptoms, treatments and remedies at his web site