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## Their Hearts in Our Hands

D3 ICU AND THE LEFT  
VENTRICULAR ASSIST  
DEVICE



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# From the Chief Nursing Officer

NANCY J. LEE, RN, MSN, CHIEF NURSING OFFICER, VICE PRESIDENT, PATIENT CARE SERVICES



This issue of *Stanford Nurse* outlines journeys: the journeys our patients take to wellness, the journeys our nurses make while caring for patients, and the journeys of our patients' families.

In this issue we focus on the journeys we take to give our patients the gift of a healthy heart.

The complexity of living and waiting for a heart transplant on a left ventricular assist device (LVAD) presents incredible challenges to patients, family members, and nursing staff. This story brings into sharp focus the patient experience and the nursing expertise required to make a successful heart transplant a reality. An end-stage cardiac patient travels a long journey from diagnosis to complete support for a failing heart on the LVAD, until a donor can be found, a heart is transplanted, and the patient can live a normal life again. You will also find some interesting facts about the history of the LVAD at Stanford.

In keeping with our heart theme for this issue, you will read about the Hearts for Caring Program on E3, which acknowledges the unsung heroes that make our patients' recovery possible and recognizes the remarkable efforts of family members.

Stanford nurses continue to reach out to our community near and far. In January an extraordinary group of Stanford nurses and physicians volunteered to travel to earthquake-devastated Haiti. I am so proud of their work and dedication to our international neighbors.

This issue also highlights some of the incredible work happening within our own walls. The article about peripheral intravenous catheters, phlebitis risks and prevention is an excellent example of a staff nurse exploring best practices in the literature and applying them on her unit.

As we move forward on our journey towards Magnet™ redesignation, this issue highlights the amazing contributions you make to the profession of nursing. I continue to be so proud of the power and accomplishments of nursing at Stanford.

A handwritten signature in black ink that reads "Nancy J. Lee". The signature is written in a cursive, flowing style.

# The Left Ventricular Assist Device Program:

## AN OVERVIEW

JULIE A. SHINN RN, MA, CCRN, FAAN

**T**he world's first successful bridge to heart transplant with an implantable left ventricular assist device (LVAD) was done at Stanford in 1984 by Dr. Philip Oyer with a first generation pulsatile pump (Novacor LVAD).<sup>1</sup> That patient was supported for two weeks until a donor heart became available and he lived over 20 years after transplantation.

The primary indication for LVAD therapy is end-stage heart failure. New knowledge and experience with patient selection, the timing of implant, and patient management have contributed to improved outcomes with decreasing adverse events. Patients who do well may now be discharged from the hospital and resume relatively normal lives while waiting for their donor hearts. By the end of the year, Stanford Hospital & Clinics, the Department of Cardiothoracic Surgery, and the Division of Cardiology in the Department of Medicine will initiate a new program that will provide patients who do not qualify for heart transplant with an alternative — destination therapy. The ultimate goal for these patients is to go home and live with their LVAD as an adjunct to their medical therapy. The device will be expected to prolong their lives beyond what medical therapy alone could offer them.

### WHEN LVAD THERAPY IS INDICATED

Considerable progress has been made in the last two decades in the treatment of congestive heart failure. Newer pharmacologic agents, bi-ventricular pacing, and implantable defibrillators have enabled cardiologists to

maintain patients in a compensated state with good quality of life for long periods of time. Surgical techniques of revascularization, valve repair or replacement, and surgical remodeling of the left ventricle have also extended the lives of many patients. Despite these advances, the mortality rate for end-stage heart failure is high without the option of transplant or bridge-to-transplant therapy. As heart failure progresses and becomes more refractory to treatment, secondary organ dysfunction develops as a result of chronic poor organ perfusion. At this point, the mortality rate becomes exceedingly high and that is usually when transplant or LVAD therapy is considered.

### CURRENT LVAD THERAPIES

At Stanford, we currently offer bridge-to-transplant therapy with two extracorporeal pumps (located outside the body) and three totally implantable, new generation axial flow pumps. The two extracorporeal pumps, the Abiomed Ventricle (Abiomed, Inc., Danvers, MA) and the Thoratec (Thoratec Corporation, Pleasanton, CA), are not ideal pumps for discharge because they each have a large drive console that the patient must tote with them. In addition, since the pumps are outside the body, living inconspicuously with this form of support is difficult. These pumps are often placed in more emergent situations as the surgery can be shorter, which is an advantage for a patient in a rapidly deteriorating situation. The preference is to electively implant a device that is more suitable for long-term support at home.

Patients who have LVADs will require a set of hardware to run their pumps. The Heartware pump comes with a bedside monitor that is used in the hospital until the patient's hemodynamics stabilizes. The monitor is shown in the back of this picture. The patient goes home with a controller (the brain that runs the pump), a battery charger, at least 4 batteries, and an AC and DC adapter power cord. A controller (on the right) and battery are seen in the foreground of the picture.



We currently use two second generation axial flow pump devices that are implanted directly into the left ventricle. They are small and quiet, unlike their predecessor, the Novacor. Although the Novacor was a reliable pump which allowed us to send patients home, it was noisy and called attention to the fact that there was something unusual about the individual who had one implanted. Patients were often reluctant to dine out, go to movies or to church, or participate in other social activities because of the sound the pumps emitted. The two axial flow pumps are the Jarvik Heart 2000 (Jarvik Heart Inc., New York, NY) and the HeartWare pump (HeartWare Inc., Miami Lakes, FL), both of which are governed by clinical research protocols. We are in the process of adding a third pump, the HeartMate II, (Thoratec Corp., Pleasanton, CA) into our therapy options. This pump is FDA-approved for both bridge-to-transplant and destination therapy.

#### AXIAL FLOW TECHNOLOGY

Axial flow technology applied to LVADs is relatively new and is currently being evaluated in clinical trials. One of the issues with the previously implanted LVADs was the body size requirement. Because of their size, those LVADs were not an option for smaller male patients, the majority of female patients and children. The smaller, axial-flow pumps are an option for many of these patient groups. In addition to their smaller size, axial flow pumps provide continuous, non-pulsatile blood flow. They have the advantage of smaller size, less power consumption, minimal moving parts, and no need for valves as the blood flow is non-pulsatile.<sup>2</sup> The pumps create axial flow by rotation of

one or more impellers or rotating blades that are contained in the pump housing. They receive blood from inflow cannulas implanted in the left ventricle or the pump itself is placed directly in the ventricle. The return cannulas are anastomosed to the ascending aorta.

#### MONITORING FOR COMPLICATIONS

All of these circulatory assist devices have complications in common, so after patients are discharged from the ICU, monitoring focuses on neurological complications such as thromboembolism or cerebral bleeding from suboptimal levels of anticoagulation, infection at the drive line site, and mechanical problems.

#### THROMBOEMBOLISM

The artificial blood interface in all pump designs has the potential for thrombus formation and subsequent thromboembolism. All patients will require some level of anticoagulation with warfarin and antiplatelet agents. INRs are usually maintained between 2.0 to 2.5. Neurologic impairment following a thromboembolic event may be transient with no residual effect or be associated with permanent impairment. Nurses routinely assess patients for neurologic deficits, which may be as subtle as transient weakness in one extremity.

#### INFECTION

Unfortunately, infection is an all too-frequent complication in the circulatory assist device patient. These patients are prone to infection associated with the presence of the assist device itself and the presence of a drive line that

connects the device to an external source of power and its control mechanism. These device-related infections most often occur in the percutaneous drive line track, in the pump itself in the form of a pump endocarditis, or in the bloodstream. Patients may require chronic antibiotic support. Infection can be controlled but often reoccurs and is the cause of late mortality and morbidity in long term assist device patients.<sup>3</sup> Aside from antibiotics, the ultimate treatment of a device related infection is the removal of the device that is seeding the infection. Transplantation is not contraindicated as long as the organism has been identified and can be treated following the transplant. Teaching the patient's caregiver meticulous technique when doing exit site care is a critical nursing function.

#### DEVICE MALFUNCTION

Like any machines, these devices are subject to wear over time so it is not unexpected that there is some degree of device malfunction. Failure of motors, wear on moving parts, and the breakage of external components by patient wear and tear have all contributed to device malfunction and failure. While it is unusual to see these problems while the patients are still in the hospital, nurses need to be vigilant about daily inspections of all electrical cables that connect the patient to their implanted devices.

#### LEARNING TO LIVE WITH AN LVAD

Following transfer to D3 from North ICU, patients and caregivers begin training for eventual discharge from the hospital. Outpatient care requires reliable compliance by the patient and caregiver, continued education with constant reinforcement, and vigilant anticoagulation monitoring. These issues are critical because a lack of understanding or an inability to demonstrate proper device management could lead to morbidity and possibly endanger a patient's life. Patients receive written information in the form of patient handbooks from the various companies. Competency assessment is done by direct observation, skills checklists, and written quizzes. Teaching the patient to become independent occurs on a daily basis with instruction by the LVAD coordinator and continual reinforcement by the D3 staff. In preparation for eventual discharge, patients are gradually introduced to experiences outside the hospital. Initially, they are accompanied outside the hospital for various excursions by professional staff.



North ICU nurse Coleen Salsbery is teaching a Heartware patient how to determine the amount of power that remains in his batteries.

As they become more confident and competent, they are encouraged to make independent excursions. With dedicated, daily teaching and reinforcement, patients who do well from a medical point of view and have adequate caregiver support can be discharged as early as 20 days post implant. The patient and caregiver are usually required to reside locally for two weeks, demonstrate competence and have no outstanding medical issues before being allowed to return home. It is important that the medical center personnel advise the patient's local physician and emergency medical personnel of an LVAD patient's presence in the community. Training support for these individuals is provided in the event of possible emergencies at home. We have sent our patients as far away as Lompoc, Santa Barbara, Shingle Springs, and Paso Robles.

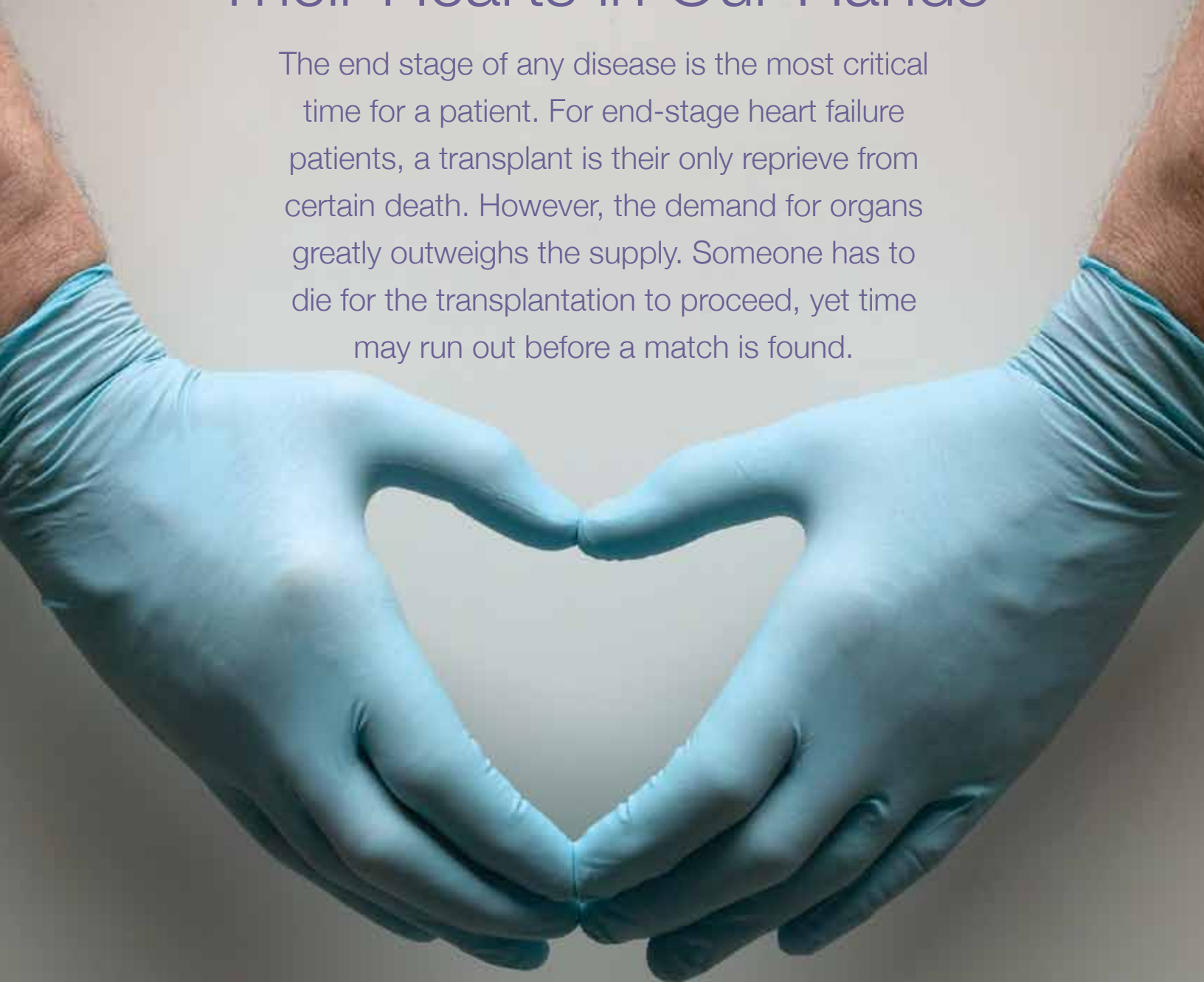
Considerable progress has been made with LVADs since our first patient over twenty five years ago. Patients are now able to go home and live relatively normal and satisfying lives while supported by LVAD technology and through the incredible expertise, knowledge and caring of Stanford nurses. **SN**

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# Their Hearts in Our Hands

The end stage of any disease is the most critical time for a patient. For end-stage heart failure patients, a transplant is their only reprieve from certain death. However, the demand for organs greatly outweighs the supply. Someone has to die for the transplantation to proceed, yet time may run out before a match is found.



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D3 ICU STAFF NURSES



Fortunately for some patients, a circulatory ventricular assist device (VAD) can be surgically implanted to provide mechanical support for a failing heart and prolong life until a donor can be found. After surgery and once patients are stable in the ICU, they are transferred to D3 for rehabilitation before a heart transplant.

Currently, the VADs seen on D3 are the Jarvik, Thoratec, Abiomed, and Heartware. The device that is implanted depends on the patient's condition at the time of implantation. Though the machines differ, their functions are all very similar, and physical assessment and care are the same. They offer patients who once would have died awaiting a new heart a life-saving second chance, yet they require extremely skilled care by nurses trained both in their use and in the complex care these patients require.

The Jarvik and Heartware are continuous pumps providing uninterrupted flow. These machines are impeller flow by nature because the centrifugal pump chamber is implanted directly onto the heart. The Thoratec and Abiomed are pulsatile and dependent on a patient's intrinsic rhythm and cardiac output and their discernible feature is that the pump is paracorporeal. To see a person's blood being pumped from the outside of the body is supernatural no matter how many times we see it. The Jarvik requires especially meticulous checks to assure it is functioning correctly. Every shift, the RN assigned to a Jarvik patient documents the speed, watt, rate, battery type, battery serial number, controller serial number and any alarms along with the battery changes into a log that is kept at the bedside. With the other VADs, we perform a less formal check of the settings every four hours. Once the pumps are checked, a critical set of daily assessments is then completed.

### CARDIAC ASSESSMENT

Long before patients are in complete heart failure, they are implanted with an automatic implantable cardioverter-defibrillator (AICD) to help the heart contract. By the time they are on a VAD, their rhythm is typically paced with a very large bundle branch block. With vigorous electrolyte replacement, very little ectopy will be noted except with the Thoratec and Abiomed. These are pulsatile machines and must fill to empty; the longer to fill, the slower the rate and the lower the output, so the heart will attempt to beat while the pump is still filling. Another typical rhythm with this population is ventricular tachycardia (VT), a rhythm that is non-life-sustaining for most individuals. Even on D3, if the staff is not made aware that the VT is a VAD patient, doctors and nurses will run to the patient's room to make sure the patient is okay. In the VAD patient, blood is circulated past the ventricle and pumped out to the descending aorta, thus perfusion is uninterrupted regardless of what the heart does. For this reason, it is not uncommon for a VAD patient to have no discernible blood pressure or palpable pulse. The machine partially or totally supports systemic blood pressure by decreasing the ventricular workload and providing a continuous linear blood flow, thereby eliminating systole or diastole. In this situation, a physical assessment of the patient's skin color, temperature, turgor, edema, capillary refill, oxygenation, urine output, weight loss or gain, VAD settings and the patient's own report of how he or she feels will take place of the typical vital signs.

### NEUROLOGICAL ASSESSMENT

Patients are assessed neurologically for signs and symptoms of a stroke. All VAD patients are anticoagulated to prevent thrombi from forming in the pump and causing



Julie Shinn, Clinical Nurse Specialist and Ventricular Assist Device Coordinator, does all of the discharge training of LVAD patients and their families. Some of the VAD patients are in research clinical trials and have rigid protocols that must be adhered to prior to discharge. It is Julie's job to make sure those criteria are met. She is shown here reviewing the functions of the Heartware pump with a patient who is being trained for discharge.



“ I never feared I wouldn't make it, knowing I was under the best possible care at a hospital that had several teams of doctors and nurses looking after my best interests.”



## patient perspective steve navarro

In May 2002 I was transferred to Stanford Medical Center with end-stage heart failure due to cardiomyopathy. After a few days of tests and monitoring, a team of cardiac surgeons and nurses entered my room. I was made well aware of my current condition and where I needed to be physically before I would be considered for transplantation.

At that point I felt that every breath I took was a struggle not knowing how long I would last. I was considered a good candidate for a heart assist device known as an LVAD. It was explained to me in detail what this modified device would do from a health standpoint as well as the criteria for moving to a priority status for receiving a heart.

After accepting the offer to be implanted with this device, I immediately felt the confidence I was lacking until that point.

Post surgery care was remarkable with trained nurses that all had extensive careers at Stanford. My family and I were all trained and prepared for the tasks expected of us to reach the next stage that eventually would lead to the heart transplant. After being discharged with my new LVAD I was able to live

a normal active life again, enjoying the freedom and mobility back at home. I was able to occasionally dine out, attend sporting events and musical concerts, and even enjoy taking my boat out on the lake.

Although there were some limitations such as an annoying ticking noise that came with this device, the results were phenomenal. In a very short time I was gaining strength. I knew at any time I could receive a call that there was a donor for me. By early September that call came. I was transplanted on September 12, 2002 after living with the LVAD for 4 months. Unfortunately, the transplant was followed by a series of complications, causing multiple postop surgeries.

Yet I never feared I wouldn't make it, knowing I was under the best possible care at a hospital that had several teams of doctors and nurses looking after my best interests. Several weeks later I finally returned home.

To this day I thank everybody involved in my recovery and the whole experience with this medical phenomenon that allows me to share this story today.

a stroke. The margin for error is extremely narrow. Over-anticoagulate, and the patient will be at risk of bleeding, if you under-anticoagulate the vessels may develop a clot. Unfortunately, strokes have been known to occur in VAD patients despite precautions. To decrease the risk of thrombus, the external chamber is checked with a flash test every four hours, using a flashlight to look for any clots on the mechanical valves in the chamber. In some instances, fibrin sheaths are detected in the pump chamber and the patient has to return to the OR to have it changed.

### ORAL ASSESSMENT

Oral health is essential for patients on VAD therapy for bridge-to-transplant care. Bacterial infections in the mouth, teeth, gums and mucosa can lead to endocarditis, a bacterial or viral infection affecting heart valves. An infection will automatically disqualify a patient for a heart transplant. Last year, a patient was informed at 4pm that a new heart was on the way; by 7pm, the periodontal consult assessed a mouthful of decayed teeth and he was no longer a candidate for that heart. By 9pm, the heart was given to another patient. Two days later, that VAD patient had most of his teeth removed and was started on prophylactic antibiotics. Soon after, he received a new heart. To watch a heart be taken away from a patient is as devastating for the nurse as it is for the individual and family.

### SKIN ASSESSMENT

The implantation of the VAD pump is usually achieved through a lateral thoracotomy. Skin assessments will include that incision and the drive-line exit site. After checking the settings, the percutaneous drive line, the part of the abdominal cable that exits the body and attaches to the power source or pump, is also checked. Two weeks post implantation, the body grows endothelial cells on the flocking that coats the drive line. The nurse has to be vigilant to ensure that there are no signs of infection,

any disruption to the flocking, or any exposed wires that attach to the drive line from the cable. The dressing at the exit site is also assessed and changed if soiled. In addition, educating patients about the devices they are attached to is critical. From the minute the patient wakes up post-op, education continues until discharge and beyond. We show the patients and their caregivers how to perform dressing changes immediately so that they become experts. Patient and family education also ensures that the same eyes see the exit site every day, always vigilant to spot any changes.



Jodie Kim RN, BSN with patient in the hospital atrium, assisting him with his first walking experience off the patient care unit.

### DAILY WALKS AND OTHER ACTIVITIES

Throughout the day and between medications, eating and resting, we remind our patients of the importance of remaining active. Prior to being supported by a VAD, many of these patients were bedridden due to their inability to support anything but a very low activity level. Regular rehabilitation is thus critical. A walk is generally the first activity each day. Aside from an abdominal binder that stabilizes the line drive, cable, or chamber, the patient needs little to get ready. The Jarvik and Heartware pumps are portable so we attach them to batteries, place them on an IV pole and let the patient ambulate the halls independently. The Thoratecs are big, bulky and

clumsy, reminiscent of a computer from the 1960s and requires two people just to push the machine behind the patients. (For these reasons, this machine is rarely used at Stanford.) The Abiomed is more streamlined and compact. If a patient is strong enough, he can push this device and use it as a walker. If, for any reason, patients have to leave the unit, they are transported on a monitor and a backup VAD.

### RETURNING TO THE ACTIVITIES OF DAILY LIVING

Our outstanding nursing care facilitates the independence of our VAD patients. Barring any physical limitations, we encourage patients to resume the activities of daily living.

Bathing, shaving, and brushing teeth in the morning facilitate a routine that prevents these patients from getting any type of infection. These activities can also be therapeutic because, psychologically, waiting for a heart can weigh down a patient's spirits. Patients often have feelings of hopelessness and find the hospital tiresome. Any normal activity encourages positive mental health, which adds to their physical strength.

### THE ROLE OF GOOD NUTRITION

Good nutrition is essential for this patient population. For this reason, the transplant service has its own nutritionist who follows every VAD patient. Taste preferences are taken into account and, if the patient has no appetite, protein powders and supplements are used in conjunction with their regular meals. Muscle wasting can affect the outcome of the patient post transplant, so weight loss is not desirable. It is the nurse's responsibility to see that her VAD patients eat a decent percent of their trays. The nurse will also call for more food or different foods to ensure the patients' weight remains stable and that they regain strength.

### INFECTION CONTROL

Nurses as well as physicians monitor daily complete blood counts (CBC). A patient in an infectious state will not be transplanted as readily as one who is infection-free. Post heart transplant, the patient is made immune-deficient to allow the body to accept the transplanted heart. To prevent any type of infection, central access line dressings and IV tubings are changed per protocol, and often more frequently as necessary. In addition, compromised skin areas are kept clean and the pumps themselves, including the vent screens, are kept free of dust. Any significant rise in the patient's white blood count (WBC) warrants antibiotics, sometimes as therapy, other times as prophylaxis. Often, the nurse is administering multiple antibiotics.

A drop in hematocrit is often noted with VAD patients because the blood pumped through the valves can be damaged as a consequence of the machine's design. Epogen

and iron are administered more often than transfusions to decrease the likelihood of patients developing any antigens prior to their heart transplant.

### TROUBLESHOOTING

The VAD has an alarm for every function; however, the only alarm heard on D3 is when the pneumatic hose that provides the airflow to the pump is kinked. This typically happens when the patient is lying or sitting on the hose accidentally. The D3 contingency plans prevent low battery life by requiring the change of batteries every shift, or keep the units plugged in at all times. In case of power failure, the Thoratec and Heartware have hand pumps that allow manual pumping. At all times, a backup VAD

is on standby on the unit. Other resources are also available 24/7. Educating the patient is usually done by the clinical nurse specialist during her regular visits and reinforced by the bedside nurse. In the ICU, the patient and family are educated about the VAD, the battery changes, physical assessments, sternal precautions and the pump settings. This education continues until discharge. Their proficiency in the hospital ensures

continued optimal VAD use when they are home awaiting their heart transplant.

### MANY ROLES, MANY REWARDS

On D3, a routine day of nursing care with a VAD patient is always very exciting and rewarding. It includes a constant vigil against infection, preventing depression, and encouraging the patient's activity and exercise. We teach our patients about their dressing changes and help them with their diets and menu planning. We replace electrolytes, observe for clots, respond to abnormal lab values and pay close attention to details when we assess our patients. The D3 nurse wears many hats for the VAD patients — personal cheerleader, phlebotomist, physical and occupational therapist, dietitian, security guard, and teacher — but most importantly, an expert nurse and a friend to the patient whose heart is literally in our hands. **SN**



Erica Scott, RN (left) and Debby Copeland, RN, BSN, consult about a patient's heart rhythm displayed on computer monitors at a D3 nursing desk.



# Did You Know?

MERRIAM YOUNG, RN, MS, ASSISTANT PATIENT CARE MANAGER, D3

DENISE RODRIGUEZ, RN, MS, ASSISTANT PATIENT CARE MANAGER, D3

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D3 nurses are trained to care for 5 different types of left ventricular assist devices: Abiomed, Thoratec, Jarvik Heart, Heartware and Heartmate II.

D3 nurses are involved in two clinical research trials for these devices.

The Stanford patient who was sustained on an LVAD for the longest period of time had his LVAD for 12 months.

The record for the patient sustained on an LVAD with no need for pump repair or replacement is 7 ½ years (Jarvik Heart).

Currently there is only one second generation LVAD approved by the FDA for destination therapy, to treat the patient who has heart failure but

is not a transplant candidate (Heartmate II).

Patients with Heartware LVADs can use the power ports in their cars to run their pumps.

It is possible to shower with implanted pumps.

In Europe, the Jarvik Heart power lead is tunneled under the skin, up the neck and exits behind the ear, allowing one patient in

France to enjoy regular swims with a family member carrying his controller and battery alongside him outside the pool.

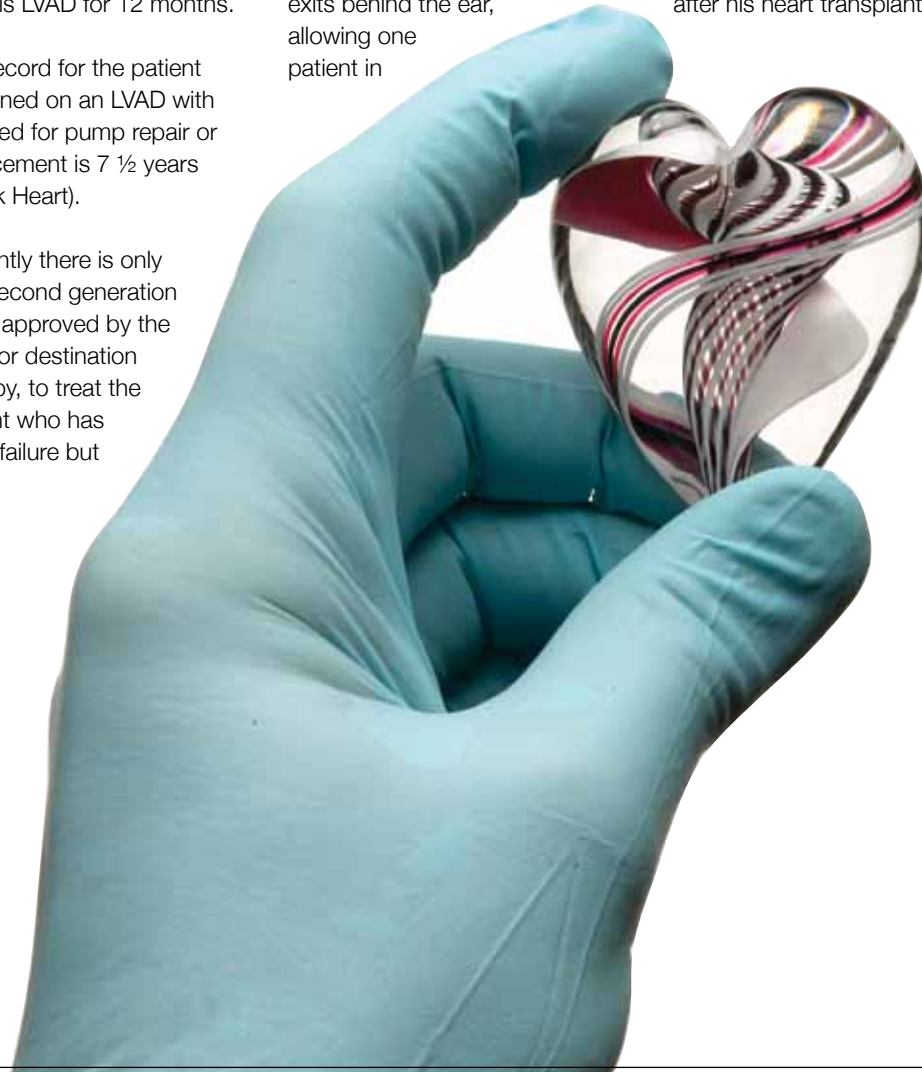
The first successful bridge-to-transplant in the world was performed at Stanford by Philip Oyer, MD. The patient was cared for in the North ICU (NICU) until he received his donor heart. He lived for over twenty years after his heart transplant.

Unlike earlier LVADs, the Jarvik Heart, Heartware and Heartmate II are silent to the naked ear.

There is no need to perform chest compressions in cardiac arrest with the Abiomed and Thoratec LVADs because they each have a hand pump that will support blood pressure. A patient in NICU had a two-sided console failure and was hand pumped for approximately 45 minutes before a replacement pump was acquired from the Palo Alto Veterans' Hospital without any ill effects.

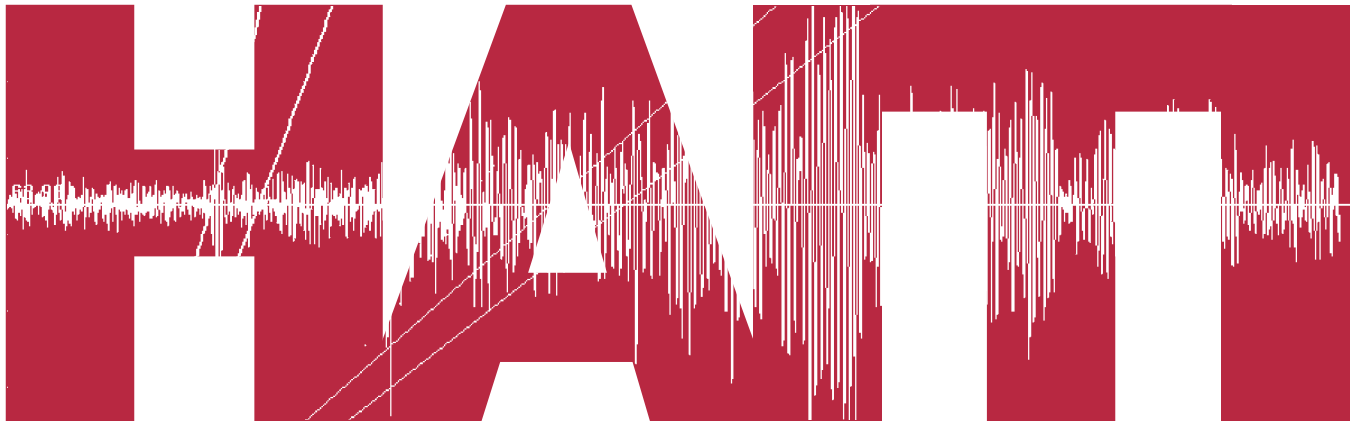
The Jarvik Heart is the smallest LVAD. It is the size of a C cell flashlight battery and is implanted directly within the left ventricle.

The Jarvik Heart, Heartware and Heartmate II LVADs are continuous flow pumps that produce no systole or diastole. Unless there are strong contractions and ejections from the patient's own heart, you often can not hear a blood pressure. Imagine that...you have a patient sitting there talking to you or walking with you who has no audible blood pressure! **SN**



TRAUMA CARE AMIDST DEVASTATION:

## two weeks in



JULIE RACIOPPI, RN, MSN  
STAFF NURSE, EMERGENCY DEPARTMENT

Just 24 hours after the 7.0 earthquake struck Haiti on January 12, 2010, Stanford's Chief of the Division of Emergency Medicine, Dr. Robert Norris, responded to a request for a medical team to aid disaster relief efforts by volunteering a team of four doctors and four nurses.

The need was urgent. Dr. Norris' goal was for those of us who responded to his call to depart as soon as possible, which translated to having one day to gather gear and prepare for departure.

**O**ur team, which included ED doctors Robert Norris, Paul Auerbach, Ian Brown, and Anil Menon, and ED nurses Heather Tilson, Gaby McAdoo, Jonathan Gardner and myself, became part of the volunteer effort of International Medical Corps (IMC), an established nonprofit organization that works worldwide in disaster relief and recovery and healthcare system support.

### **A TRUE TEAM EFFORT**

Our commitment to IMC was to span several weeks. To allow for this to happen, our ED nursing management agreed to cover the nurses' scheduled shifts. An incredible number of ED nursing staff volunteered to pick up our shifts. Meanwhile, hearing of the plans to respond, Kate Surman, Administrative Director, Patient Care Services, approached Stanford Hospital & Clinics administration for support for the team in terms of drugs and supplies. Hospital administration rapidly responded with approval for nearly \$20,000 of critical materials. Each team member was given key personal medications, such as anti-malarial drugs and drugs for prophylaxis against HIV should we suffer a needle stick or other significant body fluid exposure. A large group of ED and central supply staff worked well into the night before our departure preparing eight large duffel bags and three field bags filled with emergency supplies for our mission to Haiti. These supplies proved invaluable, because without them we would not have been able to provide the care we did for so many during our first few days.

### **THE FIRST LEG OF OUR JOURNEY**

IMC coordinated our travel and we departed SFO on Friday morning. Flying across the country by day and to the Dominican Republic at night allowed us to arrive in Santo Domingo on Saturday morning. After meeting up with IMC logistics personnel, we then spent most of that day at a military base awaiting transport into Haiti. Because the priority for flights into Haiti changed from people to food and water for the greater population, we were informed that our earliest opportunity for a flight in would be the next day, and that was not guaranteed. Not wishing to face further delays, we decided to travel by ground transport. We filled two vans with our team of eight, along with three doctors from Columbia University, two independent doctors and one nurse, a retired Special Forces Command Sergeant Major, our IMC team leader, and all of our gear. We were allowed to convoy behind a large Polish search and rescue team that had also decided to travel by

land. There were abundant travel warnings reported and having an impressive group of muscular men and women leading our contingent seemed like a good choice.

Driving nearly ten hours over rough roads, we made it near Haiti's border before sunrise. It was there that we got a glimpse of what was to come. There was a small hospital near the border that was over-filled with earthquake victims. Although the hospital was small and cramped and the nurse on duty was overworked and tired, the victims had already been provided basic care such as dressings covering their wounds, splints, and IV's. At dawn, we crossed the border and continued into Haiti.

When we crossed into Haiti, we encountered a third world country devoid of glitz and glamour. At first, we saw villages with people attending to everyday needs, looking untouched by the wrath of the earthquake. Most structures were rudimentary but still standing, and villagers looked happy and healthy as they went about their business. But as we drove into Port-au-Prince, the picture drastically changed to one of vast destruction. Nothing could have prepared us for what we would witness as we arrived in this city four and a half days after the earthquake. People were milling around in the streets, some looking lost and without purpose while others appeared to be in mobs in pursuit of food and water. We split from the Polish team to head toward the University Hospital (Hospital de l'Universite d'Etat d'Haiti [HUEH]). As we stared out the windows while driving through the city, we saw collapsed buildings, one after another, and were witness to apparent looting activity. We heard not too distant gunfire and saw an agitated crowd a block away from our vans. Then, as if on cue, a crew of four armed Haitian policemen in a pick-up truck pulled alongside to ask our destination. They led us on a winding route that took us to within a few blocks of the hospital.

### **FACING THE DEVASTATION**

On our first entry through the gates of HUEH, the largest hospital in Haiti, we were met with a sobering reality. There was a sea of people on every inch of soil or cement within the hospital grounds. Some were on bare metal beds, while others lay on the ground on a dirty mattress or just a blanket or sheet. Their bodies had been severely mutilated by the earthquake's destructive force. Many had amputations, large gaping wounds, and contorted, misaligned and swollen extremities. Many looked malnourished and dehydrated. We continued through the





Julie Racioppi, RN, MSN sutures a hand laceration while working in the Emergency/Triage tent.

narrow open streets within the HUEH compound. Several buildings were still standing, but most were damaged, including a flattened building we learned had been the nursing school. There were 50-plus students and instructors inside the building when it collapsed, entombing their bodies. There were no survivors. This was the harsh reality of Haiti. When we walked off the vans, the smell of death was overpowering. The tiny morgue was overflowing with bodies, so much so that many were strewn on the pavement. As horrific a sight as this was, we needed to begin the task at hand — providing medical care to the injured.

#### **TURNING CHAOS INTO ORDER**

Only a handful of medical personnel preceded us at HUEH, including four IMC volunteer doctors, several key IMC administrative personnel, and a few other doctors, including a couple of surgeons. As there was no organized medical care being provided by the Haitians, who were still reeling from their own personal losses, we became integral to the core group that would initiate the provision of care at this site. Our group of eight from Stanford divided into four doctor and nurse teams. We organized to the key areas of the complex, namely the pre-op area, the “ward,” and the “woods.” The pre-op area was in a building with several rooms crammed with severely injured patients needing

surgery. It was next to a building that came to serve as the make-shift operating room. The “ward” was a four-room internal medicine building that was equally crowded with similar patients. It had an existing dialysis unit within its walls that was functioning by the second day after our arrival, which was a key component in our ability to treat crush injury victims. The “woods” gained its name from the tree-covered courtyard centered between the building structures. In this area, additional severely injured victims were lying on beds, mattresses or the ground, seeking refuge from the sun’s heat underneath the shade of trees or suspended bed sheets.

Our non-Stanford teammates worked alongside us, and one team began the task of organizing supplies. That first day, we attempted to triage and treat as many patients as possible before nightfall. We were told that as darkness approached, we would have no choice but to leave the hospital, because there was no security and it was not yet possible to secure our safety at night. The triage plan was simple. We placed three random numbers written in sharpie pen on each patient’s upper arm if the patient required priority surgery, two numbers and a letter on an arm if surgery could be delayed, and only letters if surgery was unlikely to be needed. This gave us a clear-cut way of initially sorting and prioritizing our patients.

On that first day, it made no difference where you were assigned because all of the patients had horrific injuries. We began cleaning maggot-infested gangrenous wounds, splinting shattered extremities, placing traction on suspected fractured femurs, giving antibiotics to everyone with an open wound, and dosing our limited pain medications to as many as we could. Without the ability to speak the native language of Creole, and often without translators, we worked with little explanation of what we were doing. A few members of our team spoke French and occasionally a patient or family member spoke English, but when neither of those existed, we used hand gestures to show what we were about to do. The patients allowed us to freely work on their bodies and provide the treatment they so desperately needed. At each treatment's end, it was clear that the patients and their families were grateful for our care. We worked quickly and efficiently, doing as much as we could for as many people as possible, but darkness closed in and we had not yet completed our hoped-for treatment of everyone. We were exhausted and thirsty, because we had not stopped to eat or rest since our arrival at the hospital early that morning, yet we felt our needs were trivial compared to the pain and suffering of our Haitian patients.

For our quarters, IMC secured a conference room in a relatively unscathed hotel a short drive from the hospital. We were offered food in the form of military ready-to-eat (MRE) meals and bottled water, and we slept for the first time in over two days. The next morning, we got up early and returned to the hospital to do it all again, establishing a pattern for the first few days. A few more groups of medical personnel arrived each day and were merged into our teams to assist in the care of the many hundreds of patients we encountered. Each pair of hands made it easier to get the countless tasks completed. A surgical team made up of a French orthopedic surgeon; her father, a retired orthopedic surgeon; and her husband, who was an ED physician and

served as the team's anesthesiologist, fired on all cylinders in the OR, completing many of the most serious surgical cases, mostly amputations and emergency wound and fracture care. Because of the number of patients, we conjured efficiencies in every way possible. For example, we reconstituted scores of vials of antibiotics during our morning briefing, so we could be prepared to administer the medications quickly when we got to each bedside. We stuffed our pockets, fanny packs, backpacks or field kits with routine supplies so we wouldn't waste time in their retrieval. Our supplies were limited, so we could not change our gloves and "gel in/gel out" with each patient contact, but instead wore two pairs of gloves and changed the outside pair when they became terribly contaminated or torn.



Emergency Department nurses (left to right): Julie Racioppi, Gaby McAdoo and Heather Tilson with Monley, a little boy rescued from the rubble eight days after the earthquake, which took the life of his parents.

#### **ANOTHER JOLT**

At approximately 6 am on the morning of January 20, we were jolted from sleep by a 5.9 earthquake with an epicenter once again close to Port-au-Prince. When the ground ceased to shake, we were called to aid a man who had jumped from a second story balcony. He had an obviously fractured ankle and severe head laceration, so we splinted and bandaged his injuries and brought

him to the hospital with us in our van. As we entered the hospital grounds, we were greeted by new chaos. The effects of this second strong earthquake caused the families of all the patients to pull their loved ones out of the buildings on their beds or mattresses and place them along the streets and sidewalks. The Haitian patients refused to re-enter the buildings, so we had no choice but to care for them outside, where temperatures rose well into the 90s. We were fortunate that the U.S. military arrived in force that day to support us at the hospital and by the end of the day was able to erect a few large canvas tents to provide protection for some of the patients from the sun's harsh heat. Without enough tents to cover all of the areas, we persuaded patients to re-enter the "ward." This aided in re-organizing the patients within that building, creating a critical care room, a dialysis room, and two large orthopedic rooms.

# The Dream Team

This team of eight was the first organized medical group to arrive in Port-au-Prince after the 7.0 earthquake. With one bag of supplies each, this amazing team began treating thousands of patients in Haiti.

Front row: Dr. Anil Menon, Dr. Paul Auerbach, Dr. Bob Norris, Jonathan Gardner, RN. Second Row: Dr. Ian Brown. Third Row: Julie Racioppi, RN, Heather Tilson RN, Gaby McAdoo, RN



## TAKING THE LEAD

From that point forward, increasing numbers of non-governmental organizations arrived on site. Americans, Swiss, Norwegians, Germans, and others from around the globe came to offer their assistance. It became clear that HUEH needed an organized plan and leadership as the number of care providers and complexity increased. Our Stanford doctors stepped up to provide this key leadership. The doctors took on lead roles in providing supervision and coordination of the entire complex, and the lead decision-making for transport of patients to the U.S. Navy Hospital ship, the Comfort, which was now docked in port. They also took the lead roles in the pre-op area to prioritize patients for surgeries, and the lead role in the “ward” to oversee care of each of the critical patients, dialysis patients, and all others. The Stanford nurses equally rose to become leaders, and were instrumental in setting up and staffing a newly formed triage/ED area so that patients could be placed in an appropriate tent or building following triage, or be treated and released. We took charge in the “ward” and in the pre-op area to organize and oversee the patient care provided by groups of people now assisting in these areas. In little more than a week, HUEH had become a functioning medical facility.

## FULL DAYS AT FULL SPEED

Life for us in Haiti continued in a bustle of activity each day at the hospital, and focusing on refueling and re-energizing each night. No matter how careful we were with our oral intake, many in our group became plagued with GI symptoms that sometimes caused severe discomfort

and dehydration. Nonetheless, this didn't deter anyone from working full days at full speed. For some of us, the roles remained the same until our departure after nearly two weeks in Haiti. For others, the torch of leadership was passed sooner into capable hands, and other roles were explored. Each of the nurses worked at some point in the ER/triage area and learned skills beyond the traditional RN role, because the need arose and the physicians were eager and willing to teach us new skills. Another role that several of us explored was working in the outreach clinics set up by IMC at various locations throughout Haiti. These clinics were among the “tent cities” where groups as large as tens of thousands of people relocated after the earthquake. Work at these clinics involved evaluating and treating many patients, often with less acute symptoms than we saw at the hospital site, but still in need of care. We also worked with nurses from these communities to teach them how they could continue after we left.

## MEMORIES FORGED UNDER FIRE

We met many people during this experience who touched us in ways that are not easily expressed. We saw unbelievable courage, strength and gratitude from the Haitian people. So many of those we cared for will remain etched in our hearts and minds forever. What will also remain is a very strong bond of mutual respect and trust for our Stanford team, collectively and as individuals, forged by working together in such an intense and demanding situation. We formed a team like no other and prevailed when tragedy tested us. **SN**



# PERIPHERAL INTRAVENOUS CATHETER: Phlebitic Risks and Prevention

NORA D. YAN, BSN, MSN(c), RN, PCCN

**D**uring one of my MSN classes, an assignment I particularly enjoyed completing was an evidenced-based nursing project. By evidenced-based nursing, I'm referring to "The conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients or groups... (which) requires integration of individual clinical expertise and patient preferences with the best available external clinical evidence from systematic research, and consideration of available resources"<sup>1</sup>. I decided to focus my research on the incidence of phlebitis as it relates to peripheral intravenous catheters or PICs. I chose this particular topic because of my own experience with patients who had complications with their peripheral IV sites.

Placement of a PIC can be one of the most invasive and painful procedures patients encounter during their hospitalization. Studies have revealed that 20-80 percent of patients receiving IV infusions develop phlebitis, and more than 40% of these patients develop post-infusion phlebitis more than 24 hours after the PIC has been removed<sup>2</sup>. It is thus very important that nurses become familiar with the complications that can occur with PICs in order to prevent numerous IV sticks, keep the patient safe, and increase the nurse workload. In this article, I summarize what is found in the literature regarding the risk factors that can lead to phlebitis as it relates to PICs and the preventative measures that can help reduce the incidence of phlebitis.

Phlebitis is an inflammation of the vein with signs and symptoms that include pain, erythema, edema, streak formation and/or palpable cord. In my research, which covered the last ten years, I found conflicting results from various studies researching the contributing factors for phlebitis. Therefore, I took the consensus of the results from these studies and list the common risk factors for phlebitis below<sup>1-10</sup>:

**PIC:** lack of skill in peripheral IV starts, location of IV sites, loose dressings, two or more PICs (especially if on the same extremity), unit or location where IV was inserted (e.g. ER, OR, Med-Surg; emergent situations have a higher frequency)

**INDWELL TIME:** if phlebitis occurs, highest frequency is usually after 72 hours<sup>3</sup> from insertion

**PATIENT CONDITION:** age (>60), females, diagnosis (e.g. diabetics, infection, circulatory problems)

**VESICANT IV MEDICATIONS:** pH, osmolarity, fast rate (varies depending on solution), frequency

Problems in placing PICs can cause thrombophlebitis to occur. If the vein is punctured completely through both walls, it is important to apply pressure so that blood does not leak in the surrounding tissues. Loose dressings can cause phlebitis by allowing movement of the PIC, which causes trauma to the vein. Studies have found the highest risks of phlebitis occur on the hands and antecubital fossa<sup>4</sup>.

**TABLE 1. VESICANT MEDICATIONS<sup>7,8</sup>**

ANTIBIOTICS	ANTINEOPLASTIC (CHEMO)	ELECTROLYTES	CARDIAC/ VASO-ACTIVE	MISCELLANEOUS
doxycycline nafcillin piperacillin vancomycin	dactinomycin daunorubicin doxorubicin epirubicin idarubicin mechlorethamine mitomycin C paclitaxel vinblastine vincristine vinorelbine	calcium chloride calcium gluconate potassium chloride sodium bicarbonate	amiodarone dobutamine dopamine epinephrine metaraminol norepinephrine	radiocontrast media doxapram lorazepam phenytoin dextrose >10% promethazine

## NINE STEPS TO PREVENTING PHLEBITIS

Based on the research, the following steps are recommended to prevent phlebitis:

**educate/review** IV start techniques and risks for phlebitis with new and experienced nurses

**educate patients** on the risks for phlebitis and encourage them to report any pain, discomfort, leaking, edema, or pinkish tinge at the IV site immediately

**closely monitor/assess** IV sites especially before an infusion is started

**decrease the rate** of and/or dilute vesicant medications during administration

**change PIC sites** every 96 hours as needed (with physician order, may be extended for 1-2 days)

advise physicians to **place a central access** if vesicant infusions are necessary and continuous

**flush IV lines** before and after starting an IV infusion

**be aware** that an IV placed during an emergent situation may need to be replaced earlier than 96 hours

**use the chlorhexidine gluconate solution**

prior to each IV start and allow it to dry for at least 30 seconds (This should be standard practice. It also helps to prevent infections and decrease the incidence of phlebitis due to possible antibiotics administration if an infection occurs).

It is the nurse's responsibility to insert and assess peripheral intravenous catheters to prevent phlebitis and other IV complications from occurring. Understanding the risk factors, being aware of potential problems, and following recommended guidelines will foster both patient well-being and nurse work satisfaction.

If more than one PIC is necessary, it is best to place one on each arm since having two or more on the same extremity can increase the incidence of phlebitis<sup>4</sup>. Also, PICs placed during emergent situations have higher risks for phlebitis because having an IV inserted usually takes precedence over careful infection prevention.<sup>5</sup>

Patient conditions can also be contributing factors for phlebitis. Patients with a high risk of developing phlebitis include<sup>4,5</sup>:

> 60 years of age	Females
Diabetics	IV drug abusers
Immunocompromised	Septic
Receiving chemotherapy	Peripheral vascular disease
Blood abnormalities	Other circulatory problems
Raynaud's phenomenon	

(arterial spasm may occur compromising peripheral circulation and reducing venous blood flow)

Vesicants or IV infusions that are irritating to veins have also shown to be a big factor for phlebitis. The pH of blood is between 7.35-7.40, while the osmolarity is between 280-290mOsm/kg.<sup>4,5</sup> The pH and osmolarity are similar to isotonic fluids which do not cause phlebitis. Infused solutions should have a pH between 5-9 and osmolarity of 281-290 mOsm/L.<sup>4,6</sup> Anything outside of these ranges can irritate and damage the venous endothelial wall, possibly leading to rupture. Vasoactive medications (e.g. dobutamine, dopamine, epinephrine) reduce blood flow from severe constriction of smooth muscles around capillaries and can result in

ischemic necrosis.<sup>4,6</sup> Other vesicants include antibiotics and chemotherapy IV infusions.<sup>4,6</sup> If these drugs must be administered, it's best to use a central line. According to Infusion Nurses Society Standards of Practice, a central line should be used when the IV solution's final concentration contains >5% protein, >10% dextrose, or has a final total osmolarity of >500mEq/liter.<sup>7</sup>

Table 1 (at left) shows a list of some common vesicants.<sup>4,7</sup>

An interesting new theory is that a high hematocrit decreases the dilution of vesicants, thereby predisposing patients to phlebitis.<sup>10</sup> However, further study needs to be done in this area. **SN**

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# HEARTS FOR Caring

PINKY WOYTOWITZ, RN  
STEPHANIE DAVID, RN, MSN

It takes ten minutes for Margaret to get from a lying to a sitting position and another five minutes to stand up before she can support herself with a walker and attempt to walk after her liver transplant. It will take weeks, not days, before she can go home.

The surgery was a success yet there is still a long road ahead to a full recovery. Margaret was very lucky to have Leila, her niece, at her side every step of the way to recovery. The emotional and physical support that Leila provided kept her aunt from giving up when there were times quitting was all she wanted to do.

In our everyday practice as nurses, we encounter extraordinary family members who help us surpass the challenges of any given shift. Like Leila above, these unsung heroes make our patients' recovery possible with their complete dedication and support. They are the extra eyes, ears and hands who unselfishly give a healing touch and help us see the person, not just the disease. They quickly become our partners in care. Their patience, commitment and hard work inspire nurses to improve their delivery of care and maintain one of the many things we do best: caring with a heart.

Every nurse caring for four to five patients knows it is challenging to meet the special needs of every patient. Many of our patients are still recovering from baseline

encephalopathy and their mental status requires vigilant observation to prevent an injury from falling. Our patients' post-operative recovery is complicated and they need someone who has the time to give encouraging words to take another bite, even if it takes 5-10 minutes between bites. Our patients need someone to ease the pain with comforting words when the pain killers are not enough; a person willing to help the nurse in whatever way he or she can; someone who will always be there even when the patient falls asleep. This is where our patients' families are at their best.



As a meaningful way to acknowledge these individuals, the E3 General Surgery/Multi-organ Transplant Unit developed the Heart Pin Program. This award, which is designed to recognize the remarkable efforts of family members, is an expression of the staff's heartfelt appreciation to outstanding family members who relentlessly give so much of themselves and become the "cheerleaders"

for their loved ones. The heart pin is placed in a lovely Compassion and Caring Thank You Card, as a symbol of the connection between the staff and family members as we work hand in hand to optimize the patient's well-being.

An outburst of tears, joy and appreciation is often expressed when the heart pin card is presented to family members. This program is truly a manifestation of the culture of caring at Stanford Hospital & Clinics as it is a constant reminder of connection, hope, courage and love that is shared between patients, families and staff. **SN**



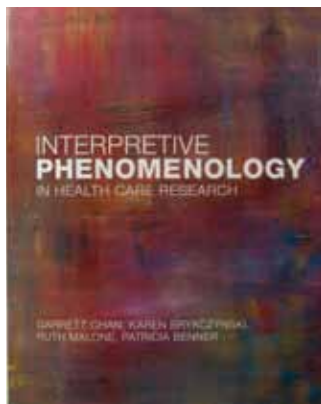
# Interpretive Phenomenology in Health Care Research

Understanding and Coping with Complex Nursing Practice and Patient/Family Situations

GARRETT K. CHAN, PHD, APRN, FPCN, FAEN  
LEAD ADVANCED PRACTICE NURSE  
EMERGENCY DEPARTMENT OBSERVATION UNIT

Have you ever wondered how patients and families cope with illness or handle difficult situations? Or have you asked yourself why certain situations in practice make us feel uncomfortable? Or perhaps you have noticed one particular nurse whose practice seems to be especially skillful and expert.

These research questions focus on trying to uncover and articulate complex nursing practice and patient/family situations. Understanding the context of such situations allows nurses to recognize quality nursing care in difficult situations and to identify concerns of patients and families. One research methodology that can be used to understand these issues is interpretive phenomenology, which brings the researcher and the reader in more direct contact with the experience and concerns of the research participants – health care teams, patients, and their families.



Interpretive Phenomenology in Health Care Research can be found on the Sigma Theta Tau International website at [www.nursingknowledge.org](http://www.nursingknowledge.org).

The research participants provide interpretation by telling their stories in a way that brings situations of concern to the forefront through interviews and observation of actions. The research team also provides interpretation through analyzing the data.

Drs. Karen Bryckzynski, Ruth Malone, and I decided to bring together a group of experts to create a Festschrift in honor of Dr. Patricia Benner titled *Interpretive Phenomenology in Health Care Research*, which was published by Sigma Theta Tau International. Dr. Benner has been a pioneer in developing interpretive phenomenology as a philosophy and research methodology and in articulating the development and practice of nurses. In the foreword, Dr. Angela Barron McBride writes, “A Festschrift has long been the highest honor that one’s students and colleagues can pay a pioneering thinker, because it is a book-length tribute to the person’s work.”

This book examines interpretive phenomenology from two standpoints. The first section looks at theory, methodology, and philosophical discourses to help the reader with recent advances in the philosophy and methodology. Chapters in the first section address questions such as why study caring practices (Chapter 1), how nursing students develop a sense of becoming a nurse (Chapter 2), and how nurses preserve their caring relationships in a highly technological environment (Chapter 3). The second section is a collection of studies intended to showcase strong interpretive phenomenological studies and to demonstrate “family resemblances” in the method across a range of investigations. Studies in this section investigate issues such as weaving caring and self-care in nursing (Chapter 9), teen motherhood (Chapter 11), living with spina bifida (Chapter 12), aging and loss (Chapter 14), and maintaining a lifeworld during a terminal illness (Chapter 16). **SN**

A BALANCE OF

# Work and Play

## Best in Show

**DAPHNEE RUSSO, RN**

Surgery Admission Unit

Daphnee Russo, a Unit Educator on the Surgery Admission Unit, has raised and acquired championships for two Portuguese Water Dogs: Astro and Chloë. She is shown here with Chloë, who was Best in Group in a competition. Because of their championship lineage, Astro and Chloë's puppies were sold to buyers as far away as Australia and China.



## Ice, Ice Baby

**JAMIE HELLMAN, RN**

Unit C2

Jamie Hellman is a staff nurse on C2 who has a passion for ice hockey... it's in her genes. As a Canadian, she says she has been skating since she could walk. You can find her "on the ice" in Redwood City, Belmont, and Fremont playing Left Wing for the Springfield Isotopes.

## Into the Deep

**CHRISTINE HARTLEY, RN, MS, NP**

Nurse Manager, Heart Transplant Services

Christine Hartley is an avid SCUBA diver and amateur underwater photographer. She earned her Master Scuba Diver certification this past year. Some of her most memorable dives are the Manta Ray night dive on the Big Island of Hawaii and the Shark Dive at the Maui Ocean Center. Christine became a Nurse Coordinator in Heart and Lung Transplant in 2003. She transitioned her role into that of a Nurse Practitioner on the Heart Transplant Service in 2007 and became the Nurse Manager earlier this year.



# In Recognition of...

## CERTIFICATIONS AND RE-CERTIFICATIONS

**AANP – American Academy of  
Nurse Practitioners**  
Michael Sheehan – November 2009

**APRN – BC – Advanced Practice  
Registered Nurse – Board  
Certified**  
Carol Bell – January 2010

**CCRN – Critical Care Registered  
Nurse**  
Darvin Antonio – December 2009  
Nancy Clark – October 2009  
Melody Honrade – December 2009  
Edelwisa Macapanpan – September  
2009  
Pao-Hsia Yeh – October 2009

**CCRN-CSC – Critical Care  
Registered Nurse – Cardiac  
Surgery Certified**  
Pao-Hsia Yeh – December 2009

**CIC – Certified Infection Control**  
Debra Johnson – December 2009

**CMSRN – Certified Medical-  
Surgical Nurse**  
Marites Velasco – October 2009

**CNOR – Certified Nurse Operating  
Room**  
Moly Shaji – December 2009  
Candy Zeitman – October 2009

**CWOCN – Certified Wound,  
Ostomy and Continence Nurse**  
Jean McCormack – November 2009

**FNP – Family Nurse Practitioner**  
Sutida Majarone – November 2009

**FNP BC – Family Nurse  
Practitioner – Board Certified**  
Carol Bell – January 2010

**OCN – Oncology Certified Nurse**  
Stephanie Radcliffe – November  
2009

**ONC – Orthopedic Nurse Certified**  
Miriam Nasol – November 2009

**RN-BC (PSY) – Certified  
Psychiatric and Mental Health  
Nurse**  
Marika O'Baire-Kark – December  
2009

## DEGREES

**MASTER/GRADUATE DEGREE**  
Maureen E. Fay, RN, MS, CCRN,  
Master of Science, Nursing and  
Health Systems Leadership,

University of California, San  
Francisco, December 2009

Tami Sell, RN, MSN, CPAN, Master  
of Science in Nursing, University of  
Phoenix, December 2009

## APPOINTMENTS/AWARDS

Kiana Bayani, San Francisco City  
Impact Board of Directors, October  
2009

Mary Lough, Clinical Scholarship  
Award, Sigma Theta Tau  
International, November 2009

Sheryl Michelson, Education  
Chairperson – PeriAnesthesia Nurses  
Association of California, October  
2009

Taylor Santo, Certificate of Special  
Congressional Recognition, Anna  
Eshoo, September 2009

Laura Zitella, 2010 Excellence in  
Medical Oncology, Oncology Nursing  
Society, January 2010

## ARTICLES AND PUBLICATIONS

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Interruption" Zones for Checking  
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Transplant Recipient, Principles of  
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Memory in Metastatic Breast Cancer,  
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Pham, Julie, Bowles, K.H.,  
O'Connor, M. & Horowitz, D.A.:  
Information Deficits in Home Care: A  
Barrier to Evidence-based Disease  
Management, Home Health Care  
Management & Practice, (in press),  
November 2009.

Stotts, Jim, Harder, K. Osborn, K.:  
Medical Surgical Nursing: Preparation  
for Practice; Caring for the Patient  
with Coronary Artery Disease, Vol.  
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## CONFERENCE PRESENTATIONS

Judith Alderman: "Medication  
Administration Safety", Integrated  
Nurse Leadership Program, San  
Francisco, CA, October 2009.

Carol Barch: "Cerebrovascular  
Disease" Advanced Critical and  
Trauma Contemporary Forums, San  
Francisco, CA, October 2009.

Jeanette Baumann: "Chilling Out:  
Hypothermia Post Cardiac Arrest",  
American Medical Transport  
Conference, San Jose, CA, October  
2009.

Sheryl Blankers: "Advanced  
Ventilation Management", Medi-Flight  
Educational Series, Modesto, CA,  
September 2009.

Garrett Chan: "Beyond Ouch!  
Non-pain Symptom Management –  
Lessons from the End-of-Life Nursing  
Education Curriculum for Critical Care  
(ELNEC-CC)", Emergency Nurses  
Association Annual Conference,  
Baltimore, MD, October 2009.

Lynn Ellison: "Chemotherapy Safety  
Initiative: Implementation of "No  
Interruption" Zones for Checking  
Chemotherapy", American Society  
for Bone Marrow Transplant, Orlando,  
FL, February 2010.

Lenora Fechter: "Myelodysplastic  
Syndromes", Patient Caregiver  
Forum MDS Foundation, San  
Antonio, TX, September 2009.

Joan Forté: "How Stanford Did  
It: Safe Patient Handling", PFT  
Conference, South Carolina,  
September 2009.

Patrice Koeten-Stuerenberg: "Round  
Table Session – Reducing Medication  
Errors", American Society for Bone  
Marrow Transplant, Orlando, FL,  
February 2010.

Myra Lang: "Hospital Specific  
Branding and Customizing", Skylight  
Healthcare Systems Users, San  
Diego, CA, September 2009.

Carole Kulik-Lewis: "Safe Patient  
Handling", West Coast Safe  
Patient Handling Conference, San  
Francisco, October 2009.

Theresa Mallick-Searle: "APN's and  
PA's in Pain Management", American  
Association of Pain Management  
Annual Meeting, Phoenix, AZ,  
October 2009.

Sheryl Michelson: "Fast Forward:  
Providing an Orientation That You  
and Your Employees Will Enjoy",  
AORN National Leadership and  
Educator Fall Conference, Orlando  
FL, October 2009.

Nadine Nakazawa: "Maintenance  
Care and Troubleshooting Implanted  
Ports", Oncology Seminars for  
Japanese, Tokyo and Osaka, Japan,  
October 2009.

Bonnie Pamiroyan: "Seizure  
Medications", Living with Epilepsy,  
Palo Alto, CA, October 2009.

Shelly Reynolds: "Mentoring New  
Nurses in the Operating Room",  
ASORN Conference, San Francisco,  
October 2009.

Constance Taylor: "Evidence-based  
Multidisciplinary Plans of Care, Epic  
User Group Meeting, Madison, WI,  
September 2009.

Debra Tierney: "Sexuality",  
Oncology Congress, San Francisco,  
September 2009.

Michael Sheehan: "Advanced  
Imaging Assessment", American  
Association of Critical Care  
Nurses National Teaching Institute,  
Washington DC, November 2009.

Martina Speight: "Focus on the  
Patient with Left Ventricular Heart  
Failure: Management Considerations  
and Potential Complications",  
Transcatheter Cardiovascular  
Therapeutics, San Francisco, CA,  
September 2009.

Michelle Woodfall: "Trauma in  
Pregnancy", Totally Trauma  
Conference, South Lake Tahoe, CA,  
October 2009.

Laura Zitella: "Cancer Treatment  
Related Cardiac Dysfunction",  
San Francisco Bay Area Oncology  
Nursing Society, San Francisco, CA,  
November 2009.



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