



**TEAMWORK!**

Primary core value for  
Professional Service  
Nursing Areas



## Magnet Forces

1. Quality of Nursing Leadership
2. Organizational Structure
3. Management Style
4. Personnel Policies and Procedures
5. Professional Models of Care
6. Quality of Care
7. Quality Improvement
8. Consultation and Resources
9. Autonomy
10. Community and Hospital
11. Nurses as Teachers
12. Image of Nursing
13. Interdisciplinary Relationships
14. Professional Development

*From the Nursing Shared Governance Council*

Magnet committee membership is a great way to become personally involved in the Magnet journey and to help shape the future of nursing at UCSD. For more information go to our nursing website at <http://medinfo.ucsd.edu/nursing/committees/> to learn about committee membership opportunities.



## Message from the The Chief Nursing Officer

Happy Nurses Week! I hope you will join me in celebrating Nurses Week this year during one of the many activities we have planned during the week of May 6-14th. This year's theme for Nurses Week is "Nurses: Trusted to Care" and that statement goes very well with the articles published in our 6th UCSD Journal of Nursing. The Professional Service areas are highlighted in this issue and you will be able to discover more about several of their services including, Apheresis, Interventional Pulmonology,

LifeSharing, Gastroenterology, the Cystic Fibrosis Program and Special Procedures. These are just a handful of the units that make up this extensive Service Line. These articles cover the many changes we have seen over the last 40 years and how the evolution of nursing seems to be shifting to High Tech with an emphasis on High Touch. You can read more about this method in the article "Integrative Care-a New Frontier". Reading the articles about Nephrology nursing, Apheresis, and Organ Procurement I am also proud to see so many nurses pursue their specialty certifications and are considered experts in their field.

As many of you know we recently partnered with the DAISY Foundation which honors the compassionate caring of the bed side nurse. One of our recent DAISY Award winners comes from the Lifesharing department, Christine Brenner, RN CPTC and what a perfect person to receive this honor. Christine was able to turn a family who had shied away from organ donation to reconsider and in the process of sharing this story in the Union Tribune 5 lives were saved! What a great way for the public to learn more about the different fields of nursing and how important it is to be a nurse!

People often say it takes a village to raise a child, well in a hospital it takes a community to heal a patient. That community is consisted of many levels of staff that treat and care for the patient. In the article "The Art of Collaboration", it speaks to how our staff is truly multidisciplinary and that all levels want to work together for the same goals, increasing patient satisfaction along with job fulfillment.

You will also notice a few common threads woven throughout many of the articles in this journal, the demonstration of our nurses' commitment to team work and the UCSD Nursing Professional Practice Model of Care. I am always thrilled to hear how each unit is implementing our vision. I applaud each and every one of you for dedication to the nursing profession and to UC San Diego Health Systems. Happy Nurses Week!

Sincerely,

**Margarita Baggett RN MSN**  
CHIEF NURSING OFFICER



# JOURNAL OF NURSING

# Inside

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**On the front cover:**

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## Message from the Nursing Director Professional Services



It is my sincere pleasure and honor to represent UC San Diego nursing services that report through me as the Nursing Director of Professional Services. I have been at this medical center for 11 years and have been very proud to witness the positive growth and development of nursing and patient care services that are provided within my reporting areas. Although we primarily support outpatient services, in our procedural areas we provide inpatients with diagnostic and therapeutic procedures. Our service

areas are unique and diverse. They include: Dialysis (Acute and Chronic), Lifesharing, Pharmacy Home Infusion, Interventional Pulmonology, Radiology Nursing and Interventional Radiology, Gastroenterology procedures and clinics at two sites, the Solid Organ Transplant Program, Apheresis, Hepatology, Vascular Access, and the Cystic Fibrosis Program. Nurses in these areas are often recognized experts in their field. Our certification rate is approximately 40% which is both higher than MAGNET and UC San Diego benchmarks. Our nursing preparation, when assessing level of education, is over 65% BSN or MSN prepared. Patient satisfaction ratings in all procedural areas have exceeded the institution set maximum goal. Clinic satisfaction, in the majority of our areas, is also above the Ambulatory Care benchmarks.

Over the past six years our nurses have been recognized twice with the honor of Nurse of the Year. In 2009 this honor was given to Stephanie Osborne BSN RN CCRN, CCTC, Lung and Heart Transplant Coordinator. Additionally in 2009, Lisa Richards, MSN, RN FNP-C, Hepatology Nurse Practitioner, was chosen as our first ever Advance Practice Nurse of the Year. In 2010 Eileen Lischer MA RN CNN, Nurse Manager Acute Dialysis, was given the Nurse Manager of the Year award and Cathie Tiernan BHA RN, Nurse Manager Interventional Pulmonology and Radiology, was chosen as our Nurse Leader of the Year. Jessica Goggin BSN RN, Nurse Manager Cystic Fibrosis Program, received the honor of being selected as the California Nurseweek's 2010 Clinical Excellence award winner. These are a just few of the many achievements our nursing staff has reached. (Please review the 'We Proudly Recognize' page)

In closing, I often hear from our patients during rounding that the nursing staff here is 'the best'. Each and every day I witness acts of compassion and kindness given by our nurses. Our nurses are dedicated to delivering high quality care to our patients and endeavor to keep their families engaged and informed. As you read the following stories I think you will find that you agree that our nursing staff are stars!!

Sincerely,

**Jill Deetz, BSN, RN**  
**NURSING DIRECTOR**

# The UCSD GI Motility Department

By Debbie den Boer BSN, RN, CGRN

**T**he phone rings, I answer; “UCSD GI Motility. This is Debbie. How can I help you?” The person on the line said: “Maternity? Oh, I think I have the wrong department!”

I realized how uncommon the phrase “motility” is and that patients as well as employees don’t really know what is done in a motility department. The best phrase to describe what the focus is of a motility lab, is gastrointestinal (GI) functional testing. According to the Rome III classification, functional gastrointestinal disorders (FGID’s) are: “...disorders of function associated with abnormal motility, visceral hypersensitivity and deregulation of the brain-gut function.”

## Who refers patients to the GI Motility Department?

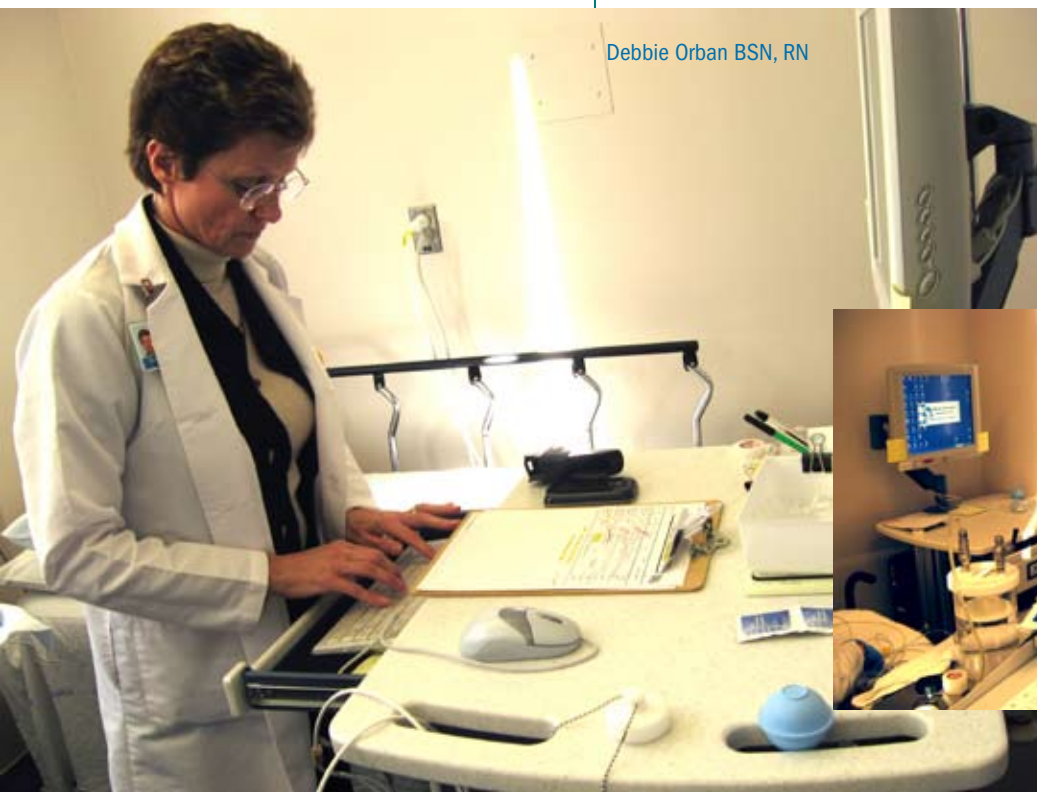
Our referrals are generated mainly from gastroenterologists, surgeons, ear nose

and throat specialists, pulmonologists, lung transplant surgeons and prime-care physicians. Although many referrals are generated from “in-house UCSD Medical Center” the largest number of referrals comes from the greater San Diego and North County community and as far as Palm Springs and Arizona. Not many hospitals or health care facilities are offering these tests, partly because of the expensive specialized equipment and low reimbursement value. The main reason is actually that many facilities do not have a dedicated gastroenterologist who specializes in GI functional testing.

Dr Ravinder Mittal, MD. Is the Medical Director of the Gastrointestinal Motility and Physiology Center at UCSD Medical Center and has been Professor of Medicine at the University of California, San Diego for the last twelve years. He has been studying



**Debbie den Boer BSN, RN, CGRN 2003** UCSD Nurse of the Year award recipient has been a GI Endoscopy and Motility nurse for over 40 years. She has filled the role of staff nurse and manager in various hospitals in Southern California and South Africa. Serving as editor of the SIGNEA (Society for International Gastrointestinal Nurses and Associates) for the last 8 years, she also served as president of SCSGNA in 1996-1997. Professionally she is very involved in the gastroenterology field and is an international and national speaker at GI nurses conferences and was GI research coordinator for Dr R Mittal in 2005-2006.





Dr. Ravi Mittal, D. Orban RN, D. den Boer RN

the esophagus for the last 25 years and authored more than 100 original papers, book chapters and review articles and for the last 10 years investigated the role of the longitudinal muscles of the esophagus. Dr Mittal also has a keen interest in the pelvic floor muscles and function and many hours of research are spent on unraveling the mysteries of the pelvic floor muscles.

### What kind of symptoms and complaints do our patients have?

Gastroesophageal reflux disease (GERD) with its common symptoms of heartburn, regurgitation and chest pain makes out a large percentage of our patient population. But numerous symptoms other than heartburn are associated with GERD. These may include frequent belching, difficult or painful swallowing, chronic cough, severe dental erosion, globus sensation in the throat, constant clearing of the throat, sore throat and/or hoarseness. Chronic asthma, wheezing and non-cardiac chest pain may be due to GERD. Dysphagia and the sensation of food getting stuck in the esophagus or solid and liquids “not going down when swallowing” is a more serious condition. Non-cardiac chest pain may present as angina, causing severe chest pain and pressure and may be caused by

esophageal spasms.

### The Motility staff

Our nursing staff consists of two part time RN's trained specifically in GI manometry, motility and pH monitoring. Debbie Orban RN started 3 years ago and was trained to perform all the procedures that our unit offers. Debbie den Boer BSN, RN, CGRN has been a GI Endoscopy nurse for nearly 40 years and been involved in manometry/ motility procedures for more than 18 years. What makes the motility unit so interesting and fascinating is the

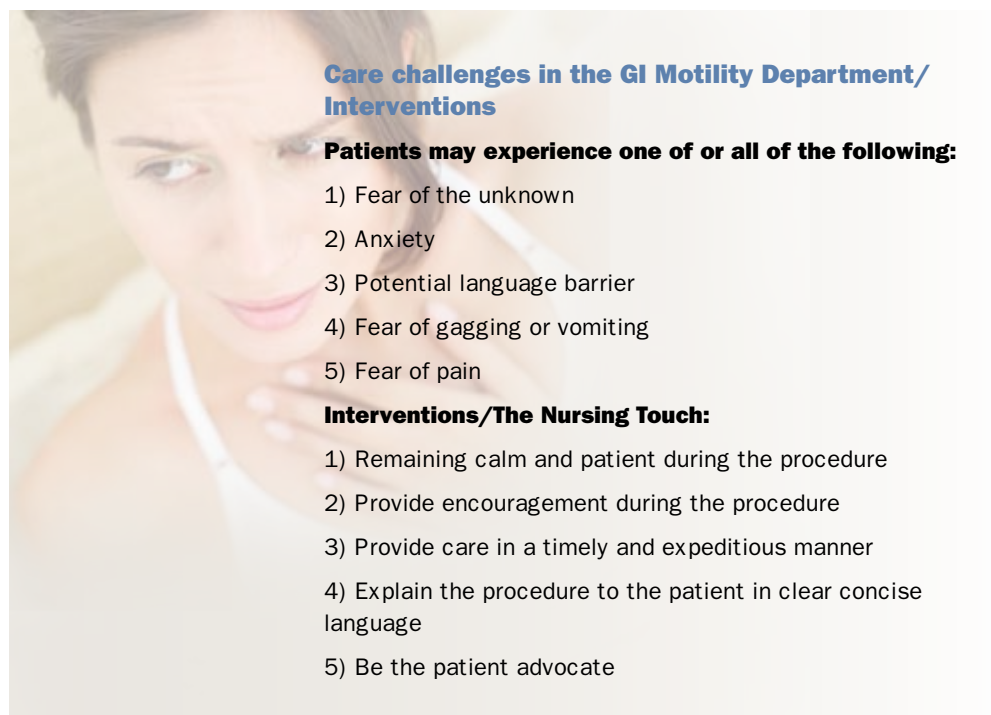
constant development in technology and the very close relationship with the patient. The procedures in the motility unit are not performed by physicians but by the nursing staff.

### Patient teaching and education

We as nurses believe that a well informed patient is one of the most important aspects of a smooth running and successful GI motility department. We developed our own GI motility website as a resource for patients and employees. When our patients are scheduled, a package with instructions, preparation guidelines and a questionnaire are mailed to them as well as directions to the unit. Since certain medications affect the very muscles that we measure and monitor, patients get instructions to be off those medications, if possible. The 24 hour pH monitoring studies are usually performed while a patient is off antacid medication for a period of time. Following these instructions is very important to secure accurate results.

### So how do we do an esophageal manometry and motility test?

Most of our patients already had an upper endoscopy procedure or barium swallow test done. Our referring physicians fax us the results which are very important for the nurse to review as well as a short medical and surgical history. The patient fills out a specific esophageal questionnaire that is geared



### Care challenges in the GI Motility Department/ Interventions

**Patients may experience one of or all of the following:**

- 1) Fear of the unknown
- 2) Anxiety
- 3) Potential language barrier
- 4) Fear of gagging or vomiting
- 5) Fear of pain

### Interventions/The Nursing Touch:

- 1) Remaining calm and patient during the procedure
- 2) Provide encouragement during the procedure
- 3) Provide care in a timely and expeditious manner
- 4) Explain the procedure to the patient in clear concise language
- 5) Be the patient advocate

## Indications for esophageal manometry

### 1. Primary esophageal motility disorders

- Achalasia
- Nutcracker esophagus
- Diffuse esophageal spasm
- Hypertensive lower esophageal sphincter

### 2. Secondary esophageal motility disorders – associated with systemic disease:

- Scleroderma
- Diabetes
- Collagen vascular disease

### 3. Other indications for esophageal manometry:

- Preoperative evaluation prior to anti-reflux surgery to assess peristaltic function
- Preoperative evaluation prior to bariatric surgery and lung transplant
- Determination of LES location prior to pH catheter placement

towards the specific problem that the patient has. This is reviewed by the nurse to have a good understanding of what the problem is and what we are looking for. The nurse will explain the administration of the topical anesthetic, the sensations the patient may experience, the intubation process, how long the procedure will take, the water swallows and what they may feel when the catheter is removed.

The GI motility department at UCSD Medical Center has State-of-the-art-equipment to perform esophageal manometry. The high resolution catheter has 36 sensors one cm apart and each sensor has 12 circumferential transducers. This portrays a full pressure image of the esophagus, from the pharynx to the upper stomach.

After the procedure is explained to the patient, one nostril is prepped with 2% viscous Lidocaine and 2-3 ml 2% viscous Lidocaine is placed in the back of the throat for the patient to swallow. This provides an adequate anesthetic effect and keeps the gag reflex a bit under control. The high resolution catheter is inserted and while the patient swallows, it is advanced into the stomach. Our success rate with esophageal intubations is more than 99.9% and we ascribe that to our effective patient teaching, the very

relaxed atmosphere for the patient with soft background music, and our expert technique. During the recording 10-12 10ml water swallows are given to the patient and we can observe the pressures and movement in the esophagus. After removal of the catheter the patient is discharged with instructions.

### Anal manometry and ano-rectal electromyography studies

The GI Motility department is also a referral center for patients with pelvic floor discoordination, e.g. severe constipation, fecal incontinence, soiling and rectal pain. During an anal manometry data is collected from the pelvic floor muscles and internal and external anal sphincters. A catheter/probe is placed in the anal sphincter and the patient is instructed to perform certain “squeeze and push exercises”. This will indicate the pressure or relaxation generated by the muscles involved. Rectal sensation is measured by inflating a small balloon, which is on the tip of the catheter, with certain volumes of air and record the sensation the patient feels. Anal sphincter relaxation is also recorded.

The ano-rectal electromyography study records the “electrical activity” in the muscles. An anal probe is inserted in the anus and electrodes are placed on the

right lower abdomen and the patient’s back to obtain electrical impulses from the anal muscles and the abdominal muscles. The patient is again instructed to squeeze the anal sphincters and to bear down. Although this is not an uncomfortable test, it is embarrassing for the patient and we make sure during the initial interview to explain all the sensations and circumstances with the patient. Patient privacy is honored and respected at all times and this is possible by covering the patient adequately during the test, Soft music as background help relax the patient as well as making them feel comfortable.

#### RESOURCES:

1. ANMS American Neurogastroenterology and Motility Society. [www.motilitysociety.org](http://www.motilitysociety.org)
2. International Foundation for Functional Gastrointestinal Disorders. [www.iffgd.org](http://www.iffgd.org)
3. Society of Gastroenterology Nurses and Associates. [www.sgna.org](http://www.sgna.org)
4. The Rome Foundation. Rome III Functional Gastrointestinal Disorders. [www.theromefoundation.org](http://www.theromefoundation.org)
5. <http://health.ucsd.edu/specialties/gastro/motility>

## Glossary of terms

**Manometry**-a diagnostic test measuring changes in intraluminal pressure and the coordination of muscle action.

**Motility**- measures the movement or activity, e.g. wave forms, contractions and peristalsis.

**pH monitoring**- Esophageal pH (acid) monitoring measures the amount of acid in the esophagus over a 24 hour period, to tell whether acid reflux is causing symptoms.

**24 hour pH monitoring**-This test is usually ordered to determine the amount of acid reflux in the esophagus over a 24 hour period of time

# Why Organ Procurement Coordination?

By Ana Kukulj, BSN, RN, OPC

# Lifes

I think every nurse at Lifesharing has their own story on why they became an Organ Procurement Coordinator (OPC). It could have been a specific organ donation case they were a part of as an ICU nurse, a recipient they cared for, or learning more about the donation process and role of the Procurement Coordinator that sparked their interest. Our director, Lisa Stocks, started at Lifesharing as a Procurement Coordinator. Her account of what brought her to a career in donation demonstrates her passion for the industry:

“During college I volunteered in a CTICU at UMC in Tucson, Arizona. My dream was to be an ICU nurse in a unit that specialized in the care of patient status post CABG, valve replacement, heart transplants as well as the new and exciting world of ventricular assist devices and Total Artificial Hearts. The unit was high energy and patients were either in and out very quickly or, like some who had received cardiac device implants, stayed for months. Luckily, I was accepted into the New Grad program in this very unit and enjoyed the fast paced learning environment. One night after at the end of a double shift taking care of a 40 yo man on a Total Artificial heart, one of the cardiology Fellows mentioned that they needed an extra set of hands during an organ recovery - would I be interested? Of course, I was very interested because the heart was for my patient. We immediately hopped in helicopter and then a Lear jet and flew to Spokane Washington. After another

helicopter to the top of a very high hospital, I was able to scrub in and help remove the heart from the donor.

I had many questions about the donor, but there were very few answers. Why did his family donate? Would they know how sick the recipient was? Would they know anything about the four recipients? At the time, information wasn't shared between the donor and recipient as easily as it is now. After the heart was removed, we retraced our flights, the heart was transplanted and the recipient was safely taken off the Total Artificial Heart. Two days later I was able to escort his two small children to his bedside - a true miracle. Suddenly, it seemed more important to me to help this donation process happen and save more lives. I quickly pursued a career as a Procurement Coordinator. Working with the donor families and helping save lives while making a memorial to their loved one is a special and rewarding career.”

The job description of a Procurement Coordinator involves providing on-site evaluations of potential organ donors, gaining consent and supporting families during the consent and donation process, managing the donor in the ICU to assure viability of the organs, locating recipients and coordinating procuring surgeons for each transplantable organ. Since donor coordination takes place within a specialty area a Procurement Coordinator acts as a liaison with hospital personnel, ICU staff, and physicians to develop relationships



**Ana Kukulj BSN, RN, OPC** has 8 years of nursing experience with 3 of those years at UCSD as a Lifesharing Organ Procurement Coordinator. Prior to that, she was at Sharp Memorial Hospital in the SICU and PACU for 5 years.





*What do you say to a family that just selflessly acted to help others in a time that they are grieving a huge loss to their family? There was no Policy and Procedure for this, no competency to explain the “right thing to say”.*

and provide educational programs to facilitate the organ donation process.

In the State of California, the legal time of death occurs when an individual is declared brain dead by two attending physicians from the hospital. If the patient is eligible for donation and consent is obtained, the Procurement Coordinator can then manage the care for the patient until time of procurement. Many of these patients are complicated by biochemical cascades ensuing brain death, comorbidities, trauma, and acute disease processes. Once care is assumed, routine labs are ordered to monitor organ function, ventilator settings are evaluated to optimize oxygenation, and medications are started to support hemodynamic stability and catecholamine responses to brain death. Although the autonomy is rewarding, it can be challenging to coordinate the donor management, organ allocation and the overall orchestration that coincides with bringing a donor to the OR.

Two years nursing experience in the ICU is a prerequisite for the position. A new coordinator will spend the first several months in an intensive on-the-job training to develop proficiency in the unique skills needed, much like a residency

program in medical school. Our shifts are 24 hours, and a new coordinator must have enough flexibility to be available for cases that arises during their training period and the ability to accommodate the long work weeks. After several years as a Procurement Coordinator, we are encouraged to study and test with the American Board of Transplant Certification to become a Certified Procurement Transplant Coordinator (CPTC).

Lifesharing must meet regulatory guidelines set by the United Network for Organ Sharing (UNOS), the Association of Organ Procurement Organizations (AOPO), and Centers for Medicare and Medicaid Services (CMS). Policies and Procedures for managing donors and family interactions are created by Lifesharing based on what these regulatory organizations set for standards. Our office has a quality assurance administration that helps keep us compliant with regulations and prepared for visits from our accreditors.

At the end of the day, I am always amazed by the strength and gratitude of the families I work with. On my first case as a Procurement Coordinator, I accompanied a family back to the lobby after they said their good-byes to their loved one at the operating

doors. Arriving at the lobby, I realized that I was not prepared for this part of the job. What do you say to a family that just selflessly acted to help others in a time that they are grieving a huge loss to their family? There was no Policy and Procedure for this, no competency to explain the “right thing to say”. I didn’t say anything, I just hugged them. They thanked me for everything we did to make donation possible. This was the first of many thanks I have received from families.

When I think of all the people that donation touches, I am honored to be a part of the process. Not only does it help donor families see a little silver lining in a black cloud, but gives life to those on the waiting list, life to spend with their families and to do the things that would not be possible without this very special gift.

# Have No Fear, the Charge Nurse is Here!

By Donna MacMillan, RN, CGRN, Nurse Manager

**H**ave you ever wished you had the strength and stamina of a superhero? How about enough arms to multi-task like an octopus? Or the ability to stay as calm as an air-traffic controller under pressure?

Enter, the Charge Nurse! Here in the Special Procedures unit at Thornton Hospital, the Charge Nurse is an integral part of the team, and wears many hats. She must hit the ground running daily, as she pulls a cell phone and keys out of the PXYS, checks voicemails, and prints out procedure schedules.

After reviewing the day's schedule to see when staff and physicians are available, assignments are posted, and as the clock strikes 7:30, here they come-Team GI! After a quick huddle to delegate responsibilities, they're off.

Patient safety is a high priority on the unit; one of the first duties is accompanying a technician to test the Cidex high-level disinfectant used to process endoscopes, to ensure it is at the proper working levels. This is a pivotal moment to insure patient safety.

Next may be a stop in the prep area, to help with patient teaching and assessment. As patients are added to the day's schedule, the Charge Nurse is responsible for notifying other departments, such as Anesthesia, Radiology, or a Respiratory Therapist, should they be needed to assist. She also must stay on top of the condition of in-patients, with regular calls to the unit nurse for report.

"Can you please come and waste with me?" is a phrase the Charge Nurse often heard echoing from the procedure room while on the phone. This phrase may sound a bit odd to bystanders, the standard of medication reconciliation is an extremely important task throughout the hospital. It requires two nurses to

witness the wasting of narcotics, and to document the process with signatures on the patient's chart. Adherence to Medical Center Policies and appropriate narcotic control are a high priority in GI.

Meanwhile, after politely asking the caller to hold, she pivots to assist with the waste request, only to be stopped by a Fellow, requesting an in-patient add-on, and a technician popping their head out of a procedure room requesting a piece of equipment. Taking a deep breath, the Charge Nurse instantly assesses the situation and prioritizes her next move, while maintaining a positive attitude, knowing that the next "emergency" is just around the corner.

With the phones temporarily quiet, patient rooms full, and no doctors waiting, it is time to start breaking staff for lunch- often a tricky task due to procedure delays- but it can be done. Looking at the schedule to determine who is on time and who is running behind, helps decide where to start.

In order for her to relieve someone in the middle of a procedure, the Charge Nurse must do a handoff report and sign for any narcotics.

With everyone having taken lunch, a rumbling noise rolls like a volcano about to erupt, sounds as if her stomach were saying, "Hey, what about me?" She finishes the procedure, and it's time to take a deep breath and step away for her own break. The day is half done!

She sits down to eat, the cell phone rings. It's a call from Admissions, stating that a male patient has shown up, prepped for a colonoscopy, and is not on the schedule. The search is on, as the Charge Nurse starts paging physicians to try to find someone to please take care of this poor patient, who spent all last night reading "War and Peace" on the toilet.

The afternoon continues with more



**Donna MacMillan RN CGRN** Has been a nurse for 20 years, 16 of those years at UCSD in Gastroenterology. She is currently the Nurse Manager of the Thornton Special Procedures Unit.

of the same duties, she utilizes any available free time to restock supplies, compile charts and input patient data.

The day begins to wind down, organization and planning become crucial. The Charge Nurse needs to determine if there are enough personnel to complete the remaining procedures for the day. If there are more cases than the on-call team can handle, she knows she can depend on reliable and dedicated staff to volunteer to stay and help.

As the saying goes in Special Procedures, "What's going to work? "Teamwork"!"

# UCSD Special Procedures Unit: THE ART OF COLLABORATION

By Sandra Woods, BSN , MPH, RN and Cheryl Osolio BSN, RN

Healthcare today is provided through a collective of interdisciplinary professionals. There is no one profession that is capable of offering all of the services needed to move an individual through the continuum of care. Limitations and restrictions by third party payers on spending of health care dollars necessitate a mix of cost-effective services provided by multi-disciplinary health care providers. In these circumstances, there is a great need for collaboration between multiple healthcare professionals; diverse in responsibility, but unified in purpose. The UCSD Special Procedures Unit is unique in that it encourages a positive nurse-physician relationship through its physical setting, shared knowledge, and organizational practices. The result of these efforts is a unit skilled in the art of collaboration.





## Introduction

Collaboration is defined as working jointly with others, or together, especially in an intellectual endeavor (Merriam-Webster Dictionary). A “collaborative practice” has been defined as “the interactions between nurse and physician that enable the knowledge and skills of both professions to synergistically influence the patient care provided” (Nelson, King, & Brodine, 2008).

Historically, there have been challenges to collaboration that have, for the most part, been overcome by nurses. In the past, mass media outlets pictured the nurse-physician dynamic as a relationship between authority and servitude. Physicians had the authoritative role and nurses were cast in the role of servitude. The origins of these inequalities were born from disparities in gender, education, and class. We’ve seen in the past pictures of an impeccably coiffed nurse in a starched white dress and hat, with an abundance of time, standing by the physician ready and willing to assist him in saving the lives of his patients. This nurse bears little resemblance to the nurse of the 21st century, and neither does the physician. Today’s nurse is a critical thinker, well-educated, assertive, and focused on outcome-oriented patient care. Physician demographics have also changed dramatically. But though much has changed from the time of our nurse, the

characteristics of empathy, compassion, and caring remain an integral part of being a nurse. So, how does today’s nurse find equal collaborative footing in a clinical setting dominated by physicians? And more importantly, why would it be of value to a healthcare organization?

Increased nurse-physician collaboration has been shown to improve nursing job satisfaction and reduce burnout (Arford, 2005). It provides a safer care environment thereby improving the quality of care provided and reducing negative patient outcomes (Boyle & Kochinda, 2004). There is a vested interest for the nurse and the healthcare organization to improve or maintain positive nurse-physician collaboration.

## Collaboration and Access

Many studies have been conducted investigating the nurse-physician relationship. Studies conducted in the Intensive Care Unit (ICU), Emergency Department (ED), and general medical-surgical floors found that nurses are more likely to have better working relationships with physicians if there is increased exposure between the two professions (Greenfield, 1999; King & Lee, 1994). ICUs have more exposure to the physician, than on a general medical ward. The more specialized the nursing work becomes; the more complex and numerous the communication pathways are utilized (Alford, 2007). Direct access between both professions facilitates



**Sandra Woods BSN, MPH, RN** has been a registered nurse in San Diego for 22 years. Started at UCSD Medical Center in August 1994 in clinical research. For the past 3 years, she has been working in the Division of Gastroenterology as a Clinical Nurse Coordinator.



**Cheryl Osolio, BSN, RN** has been a nurse for 11 years. Originally from northern NJ, she has been with UCSD for 2 years. She is currently participating in the Frontline Leadership Academy Cohort-III.



communication and the exchange of information. The UCSD Special Procedures Unit provides a unique setting that fosters nurse-physician interaction and collaboration in that it is physically enclosed unit, and at its hub is the shared workplace for all professions involved in the patient's care. Logistically, this is an ideal place for nurse-physician communication and collaboration as all parties must work closely together in a common environment. In addition, once the patient is in the procedure room, the physician and nurse are brought even closer together in proximity for the duration of the procedure. This increased exposure over time builds familiarity between the two professions raising the comfort level of the nurse allowing him or her to assert concerns about changes in the patient's condition, and in turn, the physician begins to trust in the nurse's judgment and concerns.

**Shared Knowledge in Collaboration** a study by Stein-Parbury and Liaschenko (2007), the authors describe how collaboration is gained by a trade-off of commodities between nurse and physician. Commodities include tangible items (equipment, resources) along with respect, goodwill, and knowledge. These authors studied the negotiation of knowledge between nurse

and physician because they felt it was the least understood of all the commodities. The authors developed a nursing model describing three classifications of knowledge used by nurses described as case knowledge, patient knowledge, and person knowledge.

**Case knowledge** is the pathophysiological understanding of the disease process. This type of knowledge is objective, measured, and science-based. It is closely associated with the medical profession because diagnosing and treatment is mostly the responsibility of the physician. Stein-Parbury and Liaschenko (2007) note that nurses gather information from their interactions with patients which results in an interpersonal relationship that provides an understanding of the patient's condition. On the other hand, physicians primarily use facts and measurable data in formulating their understanding of the patient's medical condition. Because UCSD is a medical teaching facility, the physician is accustomed to communicating case knowledge to others on a regularly basis. As the physician is teaching, the information he imparts to physicians in training is shared with all in the procedure room including nurses. The information conveyed about diagnostic findings, differential diagnoses, and treatment is invaluable to all involved in

the patient's case. Thus, case knowledge provided by the physician is one of three integral parts of collaboration between nurse and physician.

The second type of nursing knowledge is **patient knowledge** which is gained through observation of the patient's personal experience with disease and treatment. It is closely related to the work of the nurse who usually will continually assess the patient over a period of time. This familiarity allows the nurse to observe subtle changes in the patient's response to treatment or condition. The procedure nurse is tasked with the continual monitoring of the patient undergoing moderate sedation. Vital signs, pulse oximetry, and heart rhythms are assessed every 15 minutes, in addition to sedation level and patient comfort. A change to any of these critical indices from baseline values is the responsibility of the nurse to communicate to the physician. Because the physician is focused on performing the procedure, the nurse must provide patient knowledge in an assertive and timely manner to add his or her value to the collaborative care of the patient. Thus, patient knowledge provided by the procedure nurse fulfills the second type of knowledge used in collaboration.

**Person knowledge** involves a deeper sense of the patient as a person. This

is the third type of knowledge which delves into the personal history of the patient. It encompasses the patient's motivations, desires, idiosyncrasies, and all of the human characteristics that make the patient distinctly individual. The nursing work involved in this type of knowledge extends beyond one encounter or one hospitalization. UCSD Special Procedure Nurse Coordinators, whose jobs are similar to case managers, provide the person knowledge that is sometimes needed for the team to have a better understanding of the patient's health state. The UCSD Special Procedure Nurse Coordinators have multiple interactions with patients that regularly include discussions about psychosocial matters along with immediate and long-term clinical issues. The information gained from this interpersonal relationship is complex and unique to the patient. Nurse coordinators have the advantage in providing person knowledge which is the third type of knowledge conveyed to the collaborative team working to provide the best health outcome for the patient.

The UCSD Special Procedure Unit undoubtedly encompasses the three

types of nursing knowledge used to bring about collaboration between nurse and physician. In order for collaboration to be positive and effective, the three types of knowledge need to be interrelated and interdependent. "Collaboration requires recognition that knowledge and work are intimately related. A smooth, effortless flow of work gives the impression that knowledge bases are shared between nurses and physicians and that the work is mutually understood and supported (Stein-Parbury & Liaschenko, 2007)". The Care Delivery System for this unit is the 'team model'. The team model is most successful when collaboration and communication are positive and effective.

### Organizational Support

Arford (2005) describes the responsibility of the organization to provide the environment and boundaries to which nurse and physician collaborate. At UCSD, the art of collaboration is integrated in our nursing philosophy. On day one of each new hire, we are introduced and exposed to the tenets that allow our role of leadership and collaboration.

"We believe nursing leadership

in clinical practice is evident at all levels, in all care environments within the organization and the community. We believe that professional nursing within our institution includes providing education resources, career development, and advanced patient care technologies. This allows us to enhance patient care while engaging in open, collaborative communication with all healthcare professionals, patients and their families."

As we continue our journey to Magnet, we have seen the starfish story circulating our units and boards. This starfish represents our model of care and the five elements.

At UCSD, we as nurses are given the support and resources needed, that allow us to strive for excellence not only for our patients but also our careers.

### Conclusion

Caring for patient is never an isolated practice. It is well understood that the patient care team extends beyond the nurse and physician in the UCSD Special Procedure Unit. Moving the patient through the continuum of care are administrative and supervisory personnel, technicians, ancillary departments, and the organization itself. The UCSD Special Procedure Unit is just one example within the organization that fosters communication and collaboration between nurse and physician. The goal of this article was to highlight this unit's ability to take advantage of direct access between professions, comprehensive knowledge sharing, and organizational support which all comes together to cultivate an environment of positive collaboration.

## UC San Diego Nursing Professional Practice Model

The use of the starfish represents our model's five elements. A starfish communicates through its arms and coordinates movement to be successful in its environment. Like the starfish, our professional practice model uses the interaction of our five elements to achieve quality patient family-centered care.



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# What is Transtracheal Oxygen Therapy (TTOT)?

By Deborah Rice RN Interventional Pulmonology

**T**ranstracheal oxygen therapy is one of the many procedures performed in Interventional Pulmonology. It is a method of delivering oxygen directly into the lungs by means of a small, flexible catheter which passes from the lower neck into the trachea.

For many individuals transtracheal oxygen is a more efficient method of getting oxygen into the blood than nasal prongs. Oxygen is their lifeline. Typically these patients are chronically on high flow oxygen. These patients are extremely dependent on their oxygen supply and often panic easily when there is a problem with its delivery. It is very important for the nurse to teach and reassure them throughout the process.

Some of the benefits of Transtracheal Oxygen Therapy are improved comfort, convenience, lower oxygen requirements, increased mobility, and improved appearance.

The transtracheal program extends over a period of about eight weeks. The first phase includes patient instructions

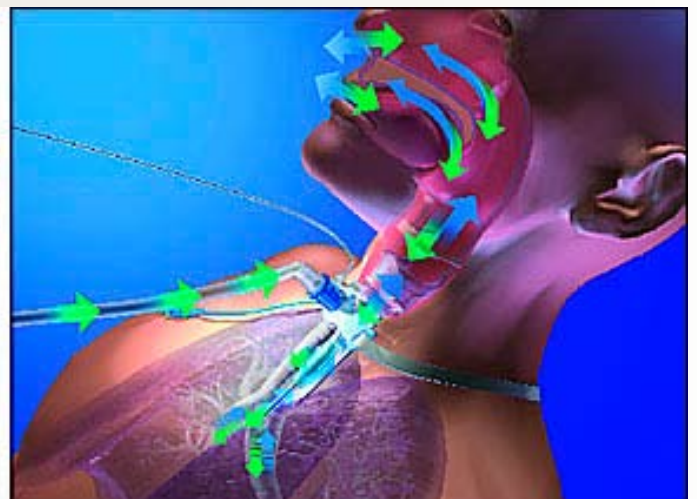
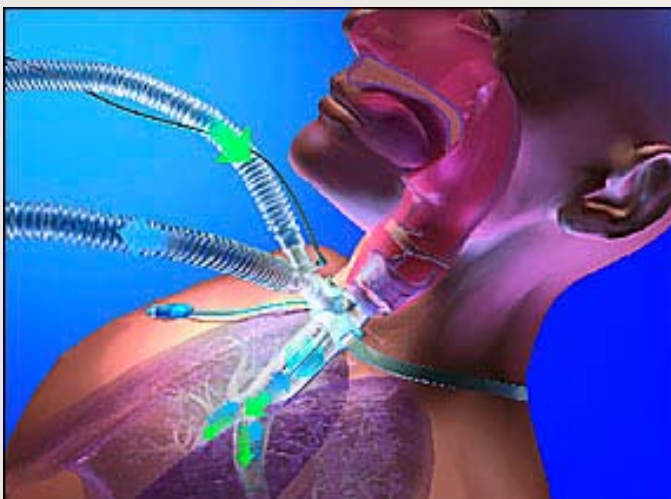


about TTOT and the care of the Transtracheal catheter. After the catheter is placed, the patient comes in weekly to have the catheter exchanged over a wire until the tract is mature. All the while, we are reinforcing their teaching to care for the catheter and to be self-sufficient at the end of the program. At graduation time, I have them do their first catheter exchange at home in the morning. I have my patients call me after they have done the exchange for questions and just to cheer them on their success.

With transtracheal oxygen, patients feel more natural without their “plastic mustache” announcing their illness. The TTOT can give them a new lease on life.



**Deborah Rice RN, CNIII** Has 29 years experience with the last 13 years at UCSD Interventional Pulmonology.



# Homeostasis Comes to the Bedside

## ACUTE HEMODIALYSIS NURSING

By Debbie Ashton BSM, RN, CNN

**W**e come to your unit, your patient, with machines: some the size of a large VCR, some the size of a small tractor (and almost as noisy). We re-arrange the furniture and hog the sink. We invade your world for several hours, and if all goes as planned, we leave you with a patient who is closer (sometimes only by a tiny bit) to metabolic and cardio/pulmonary/vascular stability than when we arrived.

### We are the Acute Hemodialysis Staff.

Our staff includes 14 career and 7 per diem Registered Nurses. We are a 'seasoned' staff. The minimum years of Nephrology Nursing experience in our staff is 5 years, the maximum – 40 (!). Eight of our nurses are certified in Nephrology Nursing. Our services include all forms of dialytic therapies: Intermittant Hemodialysis, Continuous Renal Replacement Therapies, Peritoneal Dialysis, and Plasmapheresis (not a dialytic therapy). We can travel to just about any patient care area in the house, including OR and ER. Further, we are a mobile group, providing dialytic therapies at Hillcrest, Thornton, Central Jail (yep), and of course, Sulpizio! Our assignments can change from minute to minute depending on patient acuity.

The hemodialysis nurse serves in a variety of roles. Well beyond being merely a treatment provider, they teach patients and staff at the bedside about the therapy, access care, medications and diet considerations.

The work of a Nephrology Nurse includes some unique features. Autonomy and accountability are paramount, as we work independently without nephrology peer support

on-hand. As we are on-call 24/7, there are times we are the only hemodialysis nurse available. Critical thinking/problem-solving skills are our mainstays. And, you would be surprised to know how much we understand about water pressure and plumbing!!

We are highly specialized, experts in 'all things kidney'. Unlike the bedside RN's, our jobs are generally less physically taxing. Finally, we have the privilege of spending long periods of uninterrupted time with the patient and family. This time is sometimes used as an opportunity to teach the family and patient. We often get to know details about the patient's lives that other team members don't just because we are in the room for prolonged times, available to lend an ear.

Which brings me to my next point....

Nephrology Nurses, particularly those who provide Acute Hemodialysis treatments, run the risk of being misjudged by their peers.

Does it appear that the Acute Hemodialysis Nurses do an inordinate amount of sitting at the patient's bedside? You may be tempted to think we have too much time on our hands, but consider this analogy.

A Hemodialysis Nurse at work has been compared with a swimming duck....effortless on the surface, but paddling like h\*\*\* under the water!

As with all nurses, the vast majority of the work we do is in our BRAINS.

Hemodialysis Nurses endeavor to ANTICIPATE and PREVENT complications associated with dialysis therapies. Our patients can move from stable to shock in seconds. We are constantly monitoring the patient's response to the treatment plan; consulting/collaborating with the



**Debbie Ashton, BSN, RN, CNN**, has been a Registered Nurse for 34 years. She has 31 years in Nephrology Nursing, working in Chronic & Acute Hemodialysis and Home Dialysis training with adult and pediatric patients and 3 years in Intensive Care. Debbie has done extensive teaching at the local and national levels. Beginning with an ADN at El Camino College in Torrance, CA, she finished her BSN at CSU Dominguez Hills. Now working in the Acute Hemodialysis unit, Debbie's passion is to render excellent evidence-based nursing care.



Several of our nurses serve on committees.



**Mona Jaime RN, New Graduate-Magnet Champion**



**Noel Oabel RN, EPIC and Research Committees**



**Debbie Ashton RN, Research Committee**

bedside RN, Nephrologists, and Primary Team as necessary to adjust the plan to achieve optimal patient outcomes.

Our manager, Eileen Lischer BSN, MA, RN CNN, is a great mentor and leader. She sets the performance bar high and ensures we have the education and support necessary to meet the expectations. If you have attended the International CRRT conference here in San Diego in the last few years, you might have heard her speak. She also was awarded the Nurse Manager of the Year last spring.

Our unit participates in many research projects and studies. Several include the use of different types of membranes (i.e. dialyzers) to treat non-renal diseases. For example, there are two studies looking at dialytic-

type membranes and their use in sepsis, and one for multiple myeloma. We are right there at the forefront of innovation, just where we oughtta be!

**Combine all the following:**

- Accountability
- Autonomy
- Applying Critical Thinking Skills
- Flexibility
- Experienced/Expert Staff
- Mentorship
- Leadership
- Ongoing Educational Program
- Variety of therapies performed
- Participation in ongoing research and this is what you get . . .

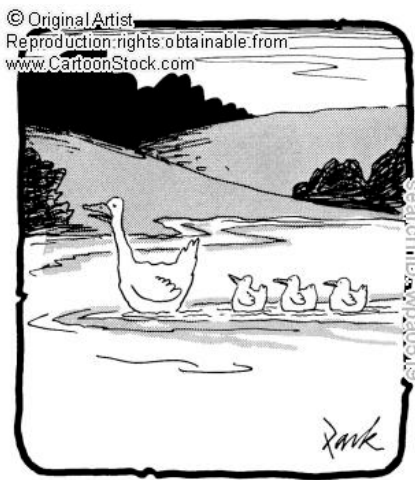
UCSD is a great place to practice Acute Hemodialysis Nursing!

were submerged into baths in hope that the affected skin would slough off. Conversely today, early, aggressive surgical intervention is the treatment of choice. As mentioned, patients are scheduled repeatedly for surgical excision procedures and multiple applications of allograft cadaver skin or porcine until the site is considered clean enough and prepared for autografting.

Bleeding is always a grave concern for all burn patients. Blood and fluid loss must be managed accurately in order to maintain the patient's temperature and hemodynamic stability. As noted by Trudy while little was done in the past to counteract these complications, there are several avenues

of treatment available to us today. Tumescence is one option, involving the injection of fluid combined with a small dose of vasoconstrictor at either the burn site or the split thickness skin graft site. This provides a synergistic affect that reduces bleeding by physical and chemical means. In combination with, or as an alternative to this therapy, the use of topical Thrombin, a powerful coagulant, may be used. This medication is applied as a fine mist spray directly to the bleeding area, and then covered with a moistened Telfa dressing. The Telfa dressing prevents disruption of the clot that is intended to form, in order to control the bleeding. For larger areas requiring debridement, lap pads soaked in a saline/vasoconstrictor solution work to slow down the bleeding in preparation for the Telfa Treatment.

Anesthesia plays a critical role in assessing the patient blood volume replacement needs. The best practice is now considered to be to replace lost volume with actual blood constituents in lieu of the formerly common crystalloid, Albumin and Hetastarch treatments. Tumescence, combined with replacement therapy poses the risk of placing a patient into fluid overload leading to possible renal complications, hence the required monitoring of the patient's electrolytes, acid base balance, oxygen saturation levels and core temperatures. In spite of the fact that the O.R. temperature is raised to 80 degrees, the patients are



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"The trick is to make it look as possible while, underneath, you're paddling like hell."

always at great risk for hypothermia. To diminish this complication we supplement body warmth, utilizing measures such as Baer huggers, a warm air blanket, and the traditional fluid warming blankets, in addition to keeping the patient covered and limiting exposure whenever possible.

Dressing care has become an art form. There are multiple choices available to surgeons depending on the severity of the burn and their personal preferences. The majority of them contain antibiotic properties. Some of the relatively common treatments include Sulfamylon soaked dressings, Xeroform with Polysporin Ointment, and Acticoat.

Treating these patients is not only physically, but emotionally challenging. We will be seeing these patients enter the OR for months, never making contact or getting to know them. Then the day arrives and the patient is no longer sedated or intubated. Their eyes are open and they track us. The beginning of our psycho-social relationship begins. Sometimes we have the opportunity to meet their family.

Trudy makes a point not to ask them what happened. Her belief is that the family has already gone over the burn incident several times, explaining to loved ones, friends, and the doctors and wondering what other steps or measures should have been taken to prevent this tragic accident. Trudy tries to offer a calm reassuring environment providing the patient and family with a nurse who makes them feel comfortable and safe, knowing their loved one will be cared for. Trudy enjoys offering “distraction” games for the children that will include all members of the surgical team, and family while they are waiting to be transported into the operating room. The diversion offers a simple moment of escape. Trudy and team manage to find ways to involve the family with the care of their loved ones and comfort them in their stressful time of need. Our operating room nurses deal with their own emotions as well as they contemplate some of the circumstances that bring our patients to us: small children who have been intentionally (as a form of punishment) or inadvertently scalded, patients with burned limbs

resulting from falls into a fire ring, and innocent victims suffering at the expense of freak accidents or fires. Every scenario has a story behind it, and we care for each of our patients regardless of their circumstances. We function as teachers and resource specialists for them and their families as we encourage, listen, and offer support during this critical part of their experience.

On occasion a patient, discharge to rehabilitation and home, returns to visit Trudy and the nursing staff. Trudy vividly remembers the little two-year old, burned from her feet to waist, stopping by one day. Trudy was fearful the child would never be able to walk after her burn injury. Much to her delight she saw the little girl go from a “cocoon” to a bright butterfly of a little girl, dancing and running around the hallways. She demonstrated no fear as she offered hugs and kisses to Trudy and her OR nursing staff. A surge of happiness and faith in humanity spurs the team with the emotional support to carry on, to realize they do make a difference in life. And offer the promise of hope for the future.

As the clinical expert in the OR, Trudy pulls from her vast wealth of experience to mentor others in the latest and best practice in burn care, as well as the preferred techniques of our physicians. She has attended specialty seminars and shares that information with the staff. She works in tandem with the nurses on the Burn Unit to ensure continuity of care. Trudy, in conjunction with the other nursing members of our surgical team, exemplifies the qualities we embrace as an organization to care for our patients.



Acute Dialysis Nursing Team!

# Integrative Care at UCSD

## A NEW FRONTIER

By Sandra Leyden RN, MSNc, MA, CPTC- Kidney Transplant Coordinator

Healthcare in the 21st Century sounds more like science fiction than patient care. Nanotechnology, DNA mapping and face transplant; the future is escalating with seemingly limitless boundaries. It's hard to believe that antibiotics are less than 100 years old. Robotic surgery today may be the technological equivalent of leech therapy tomorrow. As we race toward the future at break neck speed, some are concerned we are becoming blinded by this technology and losing focus on the patient.

In recent years, there has been a movement about in nursing to return to our roots. The pendulum may be moving a bit away from the "high-tech" and back to the "high-touch". Healing Touch, massage, aromatherapy, guided imagery, Mindfulness Based Stress Reduction (MBSR), Chinese Herbs, yoga and music therapy... the list of

alternative modalities requested by the general public seems to be endless. At UCSD Medical Center there have been staff members who have offered certain alternative therapies to their patients for several years. Healing Touch at Thornton, guided imagery in the Burn ICU/Floor, and supplements at Moore's are just a sampling of the integrative treatments being offered by nurses and other hospital staff members.

Florence Nightingale, who believed in care focused on unity, wellness, and the interrelationship of human beings and their environment, is considered by many as the first holistic nurse. Her theory of environment provides basic fundamentals for nursing practice, and has achieved universality. She believed that optimizing environmental factors would improve patient comfort and facilitate health and healing. Those environmental factors include air quality, water quality, noise, light, diet and nutrition. All are environmental factors of concern in society today.

"We are the change agents who can create the cultural change needed to achieve a healthcare system driven by the needs of the patients/clients and their families." (Dossey, 2007) Dr Dossey's theory of integral nursing describes the territory of our awareness that is always present within us. It helps us connect the dots of the actual process to more deeply understand who we are and how we are related to others and all things and assists us in everything we do in our personal self-care and development as well as in our nursing practice, education, research and policies.



**Sandra Leyden RN, MSNc, MA CPTC**

ADN from Southeastern Iowa Community College, BA in Business from Iowa Wesleyan College, MA in Health Management from Webster University and I will be finishing my MSN this May. Came to UCSD BICU in '94 as a traveler/staff in 94 also, Lifesharing in '99 and kidney transplant in 07

Dr Jean Watson's Caring Theory not only allows the nurse to practice the art of caring, to provide compassion to ease patients' and families suffering, and to promote their healing and dignity but it can also contribute to expand the nurse's own actualization. She believed in order for a nurse to truly care for the patient the nurse had to first care for themselves. If the caregiver is an empty vessel there is nothing available for them to give to the patient. She also believed in the caring occasion/caring moment. The nurse must be truly present with the patient. There is a relationship between the nurse and the patient that needs to be nurtured and cared for.

The three above mentioned



nursing theories can be seen in the UCSD Nursing Professional Practice Model of Care as follows; “Nursing staff have meaningful input into policy development affecting clinical outcomes, and nursing staff assume responsibility and accountability for their own nursing practice.”

In June, 2010, I attended the 30th Annual American Holistic Nurse’s Association (AHNA) Conference in Colorado Springs, CO. It was a profound and life changing experience for me on both a personal and professional level. I’ve been interested in massage and Healing Touch for several years as a practitioner of both. I’m a level 2 healing touch practitioner and was a massage therapist for many years before an injury made that impossible for me. This conference was a gathering of like-minded nurses who’s vision is “...a world in which nursing nurtures wholeness and inspires peace and healing.”

AHNA recognizes the totality of the human being – the interconnectedness of the body, mind, emotion, spirit, social/cultural, relationship, context and environment. The organization defines holistic nursing as “all nursing practice that has healing the whole person as its goal.”

In August, 2010, I gave a presentation to the Nursing Leadership Meeting about integrative nursing and highlights from the conference with regards to bringing our UCSD “towers of power” together in an effort to standardize and provide integrative nursing modalities to all UCSD patients.

At the conference there was a heavy emphasis on self care. Every morning was started with a plethora of self care classes ranging from yoga and chi gong to sharing circles and drumming. There was a temporary labyrinth set up in one of the courtyards that was available for participants. A meditation room was also set up for our use. Learning sessions were offered on topics ranging from writing for research to healing touch and crystal therapy. Two of the most interesting sessions that I attended were presented by nurses from hospitals that had recently developed an integrative health care department in the hospital.

Each hospital had their own blueprint for getting through the process, but there were many similarities.

- They started small; both hospitals introduced the changes into a handful of nursing units, one started in the Women care department, the other started in the Surgery and PACU units.

- The integrative modalities that were introduced were Healing Touch (or another energy work), aromatherapy, guided imagery, and massage therapy. The reasons for a consultation to this new department included anxiety, agitation, pain, nausea and insomnia. A physician’s order was not required for this consultation.

- Buy in from the staff is mandatory. If the nursing staff are not onboard with the changes it will be very difficult to change the mindset. Both hospitals had weekend retreats for the nurses. The reasons for the retreats were multifaceted. The policies were shared with the staff. At the same time the nurses got to experience the modalities as recipients.

- Sacred Spaces were created for the nurses. These were areas in the unit where the nurses could go to and relax, meditate or just rest. The Sacred Space was separate from the staff lounge. Patient handoff was not allowed in this setting. This is a dedicated space for the staff to regroup, relax and, perhaps, reflect. There are meditative tapes, soft lights, and small tabletop water falls in this room. Each unit eventually customized the space to reflect their unique culture. One unit started having tea time mid-afternoons. All were welcome but this was not a time to discuss patients or other hospital issues.

- Touchstones were placed outside of each patient’s room. The nurses would read the brief positive message on the small magnet prior to entering the room. This gave them a moment to center themselves and become focused on the patient in the room, leaving the rest of his/her concerns at the door, at least for a moment.

- There were inspirational saying posted over each of the sinks in the units. These were used as positive reinforcement for the nurses.

The logistics of launching a program like this could be daunting. Several steps that would need to be taken in a hospital setting to make integrative care officially available to all patients would include:

- Staff buy in
- Having a definition of what integrative healthcare is,
- Assessing public demand
- Identifying champions (Internal and External)
- Creating Experts
- Education (Staff and patients/clients)
- Marketing.

There was a Survey Monkey sent out through Centerpoint in the fall of 2010 to assess the interest and gain insight to the thoughts and feelings of the staff. The returned surveys showed a high interest in bringing integrative care at UCSD. There was also an outpouring of offers from staff who have experience/training in different integrative modalities and are willing to work toward the goal of having integrative care available at UCSD.

Thanks to the support of our administration, the Center for Transplantation has made progress in introducing integrative healthcare to a small number of our patients. There has been exceptionally positive feedback from the patients who have experienced this limited introduction to massage, aromatherapy, guided imagery, and energy work. Because of their initial success a multidisciplinary group has begun to develop a small research project to implement and assess efficacy of the use of integrative healthcare techniques in the transplant population.

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# Interventional Radiology

## THE ORIGINAL MINIMALLY-INVASIVE SERVICE

By Rhonda Martin MLT (ASCP) MS, RN , CCRN, CNS/ACNP-C

Over the last few years, there has been much discussion in the healthcare literature on the advantages of minimally invasive surgery and procedures. Techniques in which the body is entered and manipulated through tiny incisions or needle punctures results in less inflammation, infection, pain, scarring, faster recovery times, and quicker return to normal activities. The service that has been on the forefront of this concept for decades is Interventional Radiology (IR). Over 40 years ago, Dr. Charles Dotter, a radiologist, used a catheter to open the blocked arteries in the leg of an 82-year old woman, saving her leg, and creating a new medical specialty. Angioplasty and vascular stenting were developed by Interventional Radiologists, and their use has revolutionized the practice of medicine.(1) Interventional Radiologists are physicians who use imaging techniques, such as fluoroscopy, computed tomography (CT), and ultrasound, to perform delicate, precise, targeted procedures throughout the human body. There are two separate IR teams at the University of California San Diego (UCSD), Vascular Interventional Radiology (VIR) and Neuro Interventional Radiology (NIR).

The IR suites are on the first floors of both Hillcrest and Thornton UCSD Hospitals, where a multidisciplinary team provides this specialized service. Patients are brought to the Holding Area and prepared for the procedures by specially trained registered nurses. Unless you have accompanied a patient there, or have been one yourself, chances are you have never been in the Procedure Rooms. These areas are specially equipped with the latest fluoroscopic and ultrasound

technology, enhancing the physician's ability to diagnose and treat diseases. By using two fluoro cameras, biplane fluoroscopy can create near-holographic images of vessels and anomalies. Dyna CT rotates the camera around the patient, creating a rotating 360 degree view of a body area, allowing for precise diagnosis and placement of instruments for intervention.

IR nurses and technicians position and secure the patient for each procedure. Radiologic Technologists (RT) "scrub" in on procedures and operate the imaging equipment. IR nurses administer oxygen, sedation, medications, blood products, and carefully monitor the patient throughout the procedure. Nurse Practitioners (NP) perform specific procedures within the suites, the Emergency Departments, or the inpatient units. NPs also attend patients in clinic, provide patient follow-up, and triage inquiries by phone and pager. After joining the staff of IR and understanding the complexity of the practice and myriad procedures they perform, I came to the conclusion that they are "The Smartest Team You'll Never (or Seldom) See". Common IR procedures are listed in Table 1.

Interventional Radiology is vital in supporting the Trauma, Transplant, Dialysis, Hepato-Biliary, Oncology, and Stroke Programs at UCSD. The team of IR nurses, radiologic technicians and physicians is on call to perform procedures 24 hours a day, 7 days a week. Approximately 2,000 individual pieces of specialty equipment are kept stocked and available at all times for use. At Hillcrest alone last year, the IR teams performed approximately 2,500 procedures. Both hospitals conduct IR Clinics for the evaluation and monitoring of



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patients undergoing procedures.

Interventional Oncology is a rapidly growing subspecialty of IR practice. Tumors can be treated by accessing the femoral artery, and by delivering chemotherapy or radiation beads directly to the site then embolizing the vessels feeding the tumor. Percutaneous, or "through the skin" treatments are performed using ultrasound or CT guidance. Microwave or cryotherapy probes are guided into lesions, and then activated to generate heat or cold to destroy the lesion. The VIR Service also supports clinical trials

of new cancer treatment with the Moores Cancer Center. Some of the promising therapies on the horizon include vascular delivery of oncolytic viruses, which are programmed to seek and destroy tumor cells, and arterial chemo-infusion of medications.

In addition, UCSD Medical Center is one of only eleven Centers of Excellence in the U.S. for the diagnosis and treatment of Hereditary Hemorrhagic Telangiectasia (HHT). Also known as Osler-Weber-Rendu Syndrome, HHT is an autosomal dominant genetic disorder that affects approximately 1 in 5000 people in North America. It is characterized by the tendency to form vessels that have no capillaries between an artery and vein, resulting in small, fragile skin and mucous membrane sites called telangiectasias, or larger arterio-venous malformations (AVMs) that occur within vital organs. These malformations can result in spontaneous, sometimes life threatening bleeding, or shunts that can cause strokes. The HHT Center is based with Vascular IR, which has a specialized clinic, and collaborates with the pulmonary, cardiac, head and neck surgery, gastroenterology, and Neuro IR teams for the interdisciplinary diagnosis and treatment of these patients. Pulmonary AVMs are routinely embolized by inserting coils under



**Rhonda Martin with patient Denise McNelty**

fluoroscopic guidance to prevent stroke and improve the patient's oxygenation and overall function. It is truly gratifying to see these patients return to clinic, free of epistaxis and anemia, with normal oxygen levels and return to a normal lifestyle.

Collaboration is essential for the smooth functioning of the service and a seamless patient experience. Clinical nurses, nurse coordinators, radiologic technicians, schedulers, storekeepers, unit nurses, nuclear medicine technicians, anesthesia teams, unit and ICU nurses, and specialty medical services all must coordinate efforts to make these complex procedures a success. But the greatest satisfaction we get is from the patients themselves. Our team is often complemented on their

caring, friendly, and confident approach. We regularly hear from our long-term patients' that coming to IR is "like coming to see family".

The Third Annual UCSD IR Conference will be held on April 2, and is open to all nurses and technicians who care for radiology patients. This conference is coordinated by IR nurses, Babette Ortiz and Patty McGill, and is one of the few conferences that focus on this area of practice. The Association for Radiologic and Imaging Nurses (ARIN) is the nursing organization for this specialty. For additional information, please visit the IR website, at <http://www.ucsd.ir.org>.

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- COMMON VASCULAR INTERVENTIONAL RADIOLOGY PROCEDURES** Arteriography • Venography • Vascular Interventions • Thrombolysis/Angioplasty of Dialysis Fistulas and Grafts • Fenestration of Dissecting Aortic Aneurysms • Percutaneous or Transvenous Biopsy • Fluid or Abscess Drainage/Drain Placement • Percutaneous Nephrostomy Tube Placement/Removal • Nephro-Ureteral Stent Placement/Removal • Gastrostomy/Jejunostomy Feeding/Decompression Tubes • Biliary decompression, plasty, stenting, and drain placement • Cholecystostomy • Needle Localization of Lesions for Video-Assisted Thoracic Surgery (VATS) • Acute Stroke Thrombolysis • Arterio-Venous Malformation and Aneurysm Embolization • Discograms • Kyphoplasty • Nerve Root and Epidural Injections for Pain • Uterine Artery Embolization for Fibroids • Balloon Artery Occlusion for Placenta Acreta • Transvenous Intrahepatic Portosystemic Shunt (TIPS) Placement and Revision • Percutaneous Bland or Alcohol Ablation of Tumors • Transarterial Chemoembolization (TACE) • Transarterial Radioembolization (TARE) • Microwave Ablation of Tumors (MWA) • Cryotherapy of Tumors

# Apheresis-Specialty Therapies

## *Caring for People*

By Isagani Marquez BSN, RN

UC San Diego Medical Center is the only therapeutic apheresis out patient unit in San Diego and has been providing cutting-edge therapies for over 25 years. These therapies are extracorporeal treatments. Utilizing advanced technology the program also participates in research through the collection and analyses of cellular components.

Among the first treatments that we provided was plasmapheresis; a process in which plasma components are removed from blood by a centrifuge, such as antibodies, that can cause autoimmune diseases. Diagnoses in which plasmapheresis is commonly used are Myasthenia Gravis, Chronic Idiopathic Polyradiculopathy, Waldenstroms Macroglobulinemia, Gullian-Barre Syndrome, and Thrombotic Thrombocytopenia Purpura. New indications for use of plasmapheresis continually arise and seem to be growing rapidly.

We also provide therapeutic cytapheresis: the process of removing the targeted cellular components from blood and returning plasma and the other cellular components. This involves white blood cell depletion, platelet depletion, or a red blood cell exchange. These therapies are not common, but when needed, our nurses are skilled and ready. We have evolved providing for other modalities as well. Such therapies that are provided are Photopheresis, which modulates cellular immunity towards tolerance in which the plasma, containing the leukocytes

or white blood cells, is removed from the body and treated with ultraviolet light. The result of this treatment is that lung transplant patients experiencing rejection or bone marrow transplant patients experiencing graft versus host disease (GVHD), who have been resistant to the usual therapies for these conditions, may have a better outcome as a result of this treatment. Another therapy is Stem Cell Leukapheresis, a procedure that selectively harvests hematopoietic stem cells for subsequent Blood-Marrow Transplant.

In providing the community with these therapies, we have made a difference in helping to improve the quality of life for many of our patients. It is a satisfying environment knowing that we are involved with a team that is experienced, cares about patient care, and is so supportive of one another. Our team consists of registered nurses, physicians, and administrative staff. We collaborate with inpatient and Moore's Cancer Center nurses/physicians/nurse practitioners on a frequent basis. Knowing that a team member is always available and willing to help trouble shoot a problem makes what we do less stressful. The team functions as one unit despite the fact that our treatment areas are scattered in three different working areas within the UCSD system. We strive to make our space comfortable to the nurses and to our patients. Quality care is our top priority and is consistently reflected through our high scores on the Press Ganey survey. From patients that the



**Isagani I. Marquez, Jr. BSN, RN** has been involved with Dialysis and Apheresis for over 10 years. Doing therapies from neonates to geriatrics. Has been involved with ASFA and ANA abstract submissions. He joined the UCSD Apheresis team in November 2009.

unit has been treating for over fifteen years to a patient that is just starting a treatment with us, they are all treated with comfort and care. We strive for excellence and appreciate our patients.

Treating and being exposed to a vast amount of modalities is very interesting. I've been involved with Apheresis for over five years and still have the enthusiasm and eagerness to grow and be involved with the therapies that we do. Seeing the progression of our patients from their health status prior to receiving our treatments to after receiving the treatments is very rewarding. Even with those patients that did not benefit from our procedures; hearing the statement that our team cares and provided comfort during the treatments is satisfying to hear.

Lifelong learning is a priority to our team members. When dealing with cutting edge technology, unanticipated events may occur and are appropriately reported, analyzed and used as learning experiences to continually improve quality of care provided. Team members regularly attend Apheresis related classes to keep up with skills and the latest in current practice. It is truly a pleasant working environment. It is not the disease, but it is truly the **people** that we treat.



Apheresis Team!

# The Cystic Fibrosis Patient- A Nursing Challenge Met!

By Jessica Goggin BSN, RN

## What is cystic fibrosis?

UC San Diego Medical Center has a long history of caring for persons affected by cystic fibrosis. CF is an autosomal recessive genetic disease affecting approximately 30,000 adults and children in the United States. This disease results in excessively thick mucus production, which in turn affects multiple organ systems and leads to life threatening lung infections and severe gastrointestinal problems. Cystic fibrosis is progressive and eventually terminal. Millions of Americans carry a single CF gene, but are asymptomatic and typically not aware. A person with CF must inherit two CF genes, one from each parent, to produce the disease. Including an estimated 1 in 29 Caucasian Americans, CF is the most common, deadly, inherited disorder affecting Caucasians in the United States.

## Diagnosis of CF

Most children with CF are diagnosed by age 2. Some persons, however, are not diagnosed until age 18 or older. These patients usually have a milder form of the disease. Genetic (blood) testing is now available to identify the genes resulting in CF.

## Challenges in CF

Persons with CF face many challenges. Efforts to minimize flare ups must be performed throughout the day and include oral and nebulized medications. Airway clearance therapies may include the use of devices such as The Vest<sup>®</sup>, Acapella<sup>®</sup>, and exercise to loosen and expel accumulated mucus in the lungs. Routine therapies for adults usually require 4-6 hours daily when well and average 12-16 hours when ill.

In addition to the many complications faced by people with CF and the time intensive therapies involved, the financial burden is tremendous. Persons with CF are

frequently unable to work due to decreased pulmonary function and the time commitment necessary to complete the daily treatment regimen. Often cystic fibrosis is considered a preexisting condition, making insurance difficult to obtain. Recent health care reforms may alleviate some concern but are yet to materialize.

## UC San Diego Adult CF Program

First established in the 1970's, the UC San Diego Cystic Fibrosis program cared for a small number of both children and adults with cystic fibrosis. Historically, CF had been considered a pediatric disease, primarily due to the fact that in years past individuals with CF rarely survived into adulthood. Improvements in technology, treatment, and medications have resulted in significant increases in median life expectancy. In the 1950's a child born with CF rarely survived through elementary school, in the 1980's this improved to an average of 25 years and today persons with cystic fibrosis have a median life expectancy of over 37 years (Cystic Fibrosis Foundation). In fact, within the last two years, adults affected by CF now total 47% of the disease population and will soon surpass children for the first time in history.

Much of the success in treatment and life expectancy for CF can be attributed not only to individual dedicated professionals but to the Cystic Fibrosis Foundation (CFF). Originally founded by a group of parents and families seeking to raise funds and seek a cure, the CFF has now grown to a large network of patients, families, and professionals. The CFF is now the accrediting body for the CF community and our accredited center which consists of both Rady Children's and UC San Diego.

As people with CF began to live



**Jessica Goggin BSN, RN** winner of the 2010 California Nurse Week Excellence Award in the category of Clinical Care. Jessica is the nurse coordinator for the Adult Cystic Fibrosis Program at UC San Diego Medical Center. Nominated by her peers, Jessica was recognized for her many accomplishments and specifically for her practice of assessing a need, great or small, personal or institutional, and utilizing every resource at her disposal to meet that need, whether for her patients, her colleagues, or the CF program.

longer, the UC San Diego CF Program quickly recognized that adults living with CF had unique healthcare needs and would be best served by establishing a separate Adult CF Program. The pediatric program moved to Rady Children's Hospital in the late 1990's and although now located in a different physical location, the two programs work closely together. The Adult Cystic Fibrosis Program was established in 1995 with the a patient population increasing to about 80 by 2005. Within the last 5 years the program has experienced tremendous growth, resulting in a current population of



Mucus blocks air sacs (alveoli) in the lungs



Mucus blocks pancreatic ducts



greater than 180 adults with CF that are cared for at UC San Diego.

### Multidisciplinary Care

Long before it was in “vogue”, multidisciplinary care has been the delivery model of choice for the Cystic Fibrosis Program. A physician, nurse, and social worker have been integral members of the team for decades. In recent years the team has expanded and now includes two physicians, a nurse coordinator/program manager, registered nurse, dietitian, social worker, respiratory therapist and administrative assistant. Expanded members include audiology, PFT staff, research staff, medical assistant and pulmonary fellows. Team members are highly regarded for their expertise and individual contributions to achieving the highest quality care possible.

### CF Nursing

At the heart of the multidisciplinary team is the Nurse Coordinator. The Nurse Coordinator is responsible for coordinating virtually all aspects of care for the cystic fibrosis population at UC San Diego. As one can imagine, a complicated disease such as cystic fibrosis requires skilled care coordination. The CF Nurse Coordinators provide outpatient case management, home IV antibiotic coordination, patient advocacy, patient and family education, staff education, research support, and more to people with cystic fibrosis.

A day in the life of the CF Nurse Coordinator is not for the faint of heart. The level of effort required daily to help maintain the health of people with CF is usually surprising to those unfamiliar with this population. Outpatient coordination includes clinic

preparation and follow-up, telephone triage, medication refills and prior authorizations, insurance assistance, maintenance of national databases, and much, much more. Medications prescribed for CF are unusually expensive. Obtaining approval for these routine CF therapies is challenging and often requires extensive paperwork and telephone calls to secure coverage. On average, 10% of the patient population is on home IV antibiotic therapy. Approximately 45% of the patient population lives 2 hours or more away from the medical center, creating significant challenges in the coordination of home health providers and nursing care. Although some of the daily requirements of outpatient care coordination may initially appear routine, they are critical to assist patients in maintaining their prescribed healthcare regimen. The CF Nurse’s role is essential to ensuring that this aspect of each patient’s care is well coordinated, allowing them the ability to simply live life to their fullest of their ability. The importance of even the most basic task cannot be underestimated.

The concept of nurse as patient advocate is not new. Nurses have historically advocated for their patients and it is not surprising that in a population such as CF that this quality is well developed. Just as persons with CF are taught from an early age to fight, fight, fight in order to survive, CF nurses are also tenacious. Whether it is for a needed medication, medical procedure, or expensive equipment, CF nurses quickly learn to fight their battles as patient advocates. Some patients have been let go from their jobs due to the expense to smaller employers’ insurance coverage premiums or

dropped from college classes due to repeated or prolonged hospitalization. Others have been denied, secondary to lack of insurance coverage, the ability to receive their care at our UCSD Adult CF Program, the only one of its kind in San Diego. Nurses may personally advocate or may educate patients and families in navigating the system and tools available to empower them to advocate for themselves.

CF Nurse Coordinators provide education to all members of the community involved in the care of persons with cystic fibrosis. Education is provided to patients and families regarding all aspects of the disease. Adults newly diagnosed with CF require extensive education on the basics of CF. As persons advance through different developmental stages, their educational needs change as well. CF Nurses not only identify needs as they arise but also anticipate needs before they emerge. Classes are provided to staff throughout the year including CF 101, provided through the new grad program. Nurse Coordinators present at state and national conferences regarding various aspects of CF. Education is an integral component of CF care. CF Nurses are life long learners, continually advancing their knowledge as the field of cystic fibrosis evolves.

As persons with CF live longer, healthcare needs become more and more complicated. The CF Nurse Coordinators provide support to patients and families as they are undergoing the decision making process for bilateral lung transplantation, awaiting lung transplant, and dealing with the multitude of concerns that arise as the disease progresses. Nurses actively participate in end of life and palliative care processes and support patients and families in a myriad of ways at this most difficult time.

### The role of the CF Nurse

Coordinator continually evolves as the needs of patients and the program change. CF Nurses are passionate, knowledgeable professionals, dedicated to meeting every challenge, great and small, to allow persons with cystic fibrosis to thrive.

# Sedation Management Implementation In Liver Cancer Patients

By Michael J. Thompson, RN, MPA, CNOR

After more than 40 years in the health profession, I have never lost my passion for recognizing and controlling the patient's pain. Hundreds of articles have been written on this subject but very few, if any, on the use of nurse administered pre-emptive analgesia within the field of Interventional Radiology. Moderate sedation drugs and sedation protocols have not changed dramatically in the past 20 years, especially in the field of Interventional Radiology. This "one size fits all" approach has hindered evidence based research and delayed exploration of other currently available drug venues for procedural sedation management.

Anecdotal evidence, at UCSD Medical Center over the past 3 years, of nurse-administered sedation shows that patients undergoing chemotherapy for hepatocellular carcinoma in Interventional Radiology required less overall sedation when Dilaudid was added to the standard sedation protocol of Fentanyl and Versed and pre-emptively given before Transarterial Chemoembolization (TACE). Patients receiving only the standard sedation formula without Dilaudid appeared more likely to ask for increased pain medication even though their physiologic status prevented additional sedation.

My eagerness to investigate this

anecdotal evidence culminated in a desire to improve patient outcomes by preventing over-sedation—without compromising pain management—in this vulnerable patient population. Moreover, the standard sedation formula was not adequately controlling intra-operative pain, which inspired me to resolve this disparity.

In collaboration with Rhonda K. Martin, RN, ACNP-C and Dr. Steven Rose, MD, a research plan was developed and submitted to the UCSD Human Research Protections Program. A quality audit with retrospective medical record review was approved for liver cancer patients receiving moderate sedation for Transarterial Chemoembolization between July 2007 and October 2008. The research hypothesis was that preemptive Dilaudid would improve pain management and decrease use of sedation medications.

The final T-Test analysis (n=50) was statistically significant and confirmed that patients receiving pre-emptive Dilaudid required less overall sedation with Fentanyl (p=.005) and Versed (p=.009). This is clinically important because less sedation improves patient outcomes by preventing drug-induced respiratory depression and airway obstruction.<sup>1</sup> The American Society of Anesthesiologists (ASA) Guidelines for Sedation and Analgesia stress the



**Michael J. Thompson, RN, MPA, CNOR**

Graduated from Regis College, BS-1984 and University of San Francisco, MPA-1987. He has been a nurse at UC San Diego since 2003 as a CNIII in GI and Interventional Radiology. Additionally, Michael served 28 years in the U.S. Navy and was awarded the Meritorious Service Medal upon his retirement in 1998.

importance of careful titration with sedative/analgesic combinations to prevent complications when providing pain relief.<sup>2</sup>

Pre-emptive Dilaudid did decrease overall sedation requirements in patients undergoing TACE. Recommendations for future research would include how this protocol affects patients in the post-procedural period.

Although Interventional Radiology nurses understand the need for moderate sedation, few apply sedation protocols consistently. Sedation management within the field of radiology is not well understood, and there is limited research on this topic in the current literature. This quality audit is a first step to improve the standard of care for Interventional Radiology patients receiving moderate sedation for liver cancer. Extrapolation from this data to other Interventional Radiological procedures holds promise; further prospective research would be informative.

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# IP Nurses Take the Plunge

By Jarne Condell, RN, BSN, PHN

The nurses of Interventional Pulmonology (IP) develop lasting relationships with many of their long term patients and as a result of these relationships, have become involved in some special community events that support causes related to their patient's conditions.

Some of the events in which we have participated include the Breast Cancer walk, the annual Wheelchair Regatta, and fundraisers to benefit the local YMCA, Crohn's disease and the American Lung Association. Additionally, the entire IP team participated in the Clean Air walk for two years in a row.

For the past 5 years in February, Special Olympics of San Diego County has staged a Polar Plunge fundraiser at the Oceanside Municipal Pier. The IP

Interventional Pulmonology Nursing Team at the Polar Plunge (February 2011)



nurses have wholeheartedly adopted this annual tradition of "Freezin' for a Reason" because of one very extraordinary IP patient named Bob. Bob and his sister have become close friends of the IP staff and we have embraced this and other fundraisers for Special Olympics because Bob is a Special Olympics Athlete. At his first appointment several years ago, Bob was very fearful of his bronchoscopy and of all the new faces, strange equipment, sounds and activities. He was very shy. Eventually, with lots of hand holding and TLC, Bob came to enjoy his procedural visits and looked forward to visiting with his nurses at UCSD. He even has his own special place, called "the Bob Room," an area decorated with several photo collages that his sister made for us of his many Olympic achievements, including his highpoint of carrying the Special Olympics torch through Carlsbad.

With Bob's enthusiasm for the Polar Plunge and his sister's dedication to Special Olympics, the IP staff couldn't help but be swept up in this fun but chilly benefit. Bob raised a whopping \$3,345 this year to become the grand winner in contributions, thanks to the support from his friends and the Carlsbad Police Department.

This year's Polar Plunge occurred on a particularly cold and wet weekend, but that did not stop the 5 intrepid IP nurses, along with 200 other people, from taking a dunk in the frigid Pacific Ocean for this worthy cause. Anne Powers NP, Laura Peluso RN, Debbie Rice RN, Mary Pat Holm RN and IP nurse manager Cathie Tiernan RN, braved the elements to represent UCSD and join Bob in his excitement. He taught to always challenge ourselves, and for that we will forever be grateful to Bob.



**Jarne Condell BSN, RN, PHN** graduated from nursing school in 1968. She essentially began her nursing career at UCSDMC when it was known as University Hospital. She started on a very unique unit with half pediatric infectious disease and half adult neurology medicine patients. She then worked neurosurgery; orthopedics; cardiothoracic ICU; pediatric ICU and dialysis. In dialysis she was the co-founder of the Apheresis unit. She has been a director at Scripps La Jolla, Alvarado, Villa View, and Sharp Coronado comprising many different areas of nursing. In 2005 she returned to her favorite hospital, UCSDMC as a CNIII in the Interventional Pulmonology department where she hopes to retire from. In 2009 she celebrated her 25th anniversary at UCSDMC.

# Evolution of Interventional Pulmonology (IP) aka “Bronchoscopy Service”

By Laura Peluso, RN, BSN

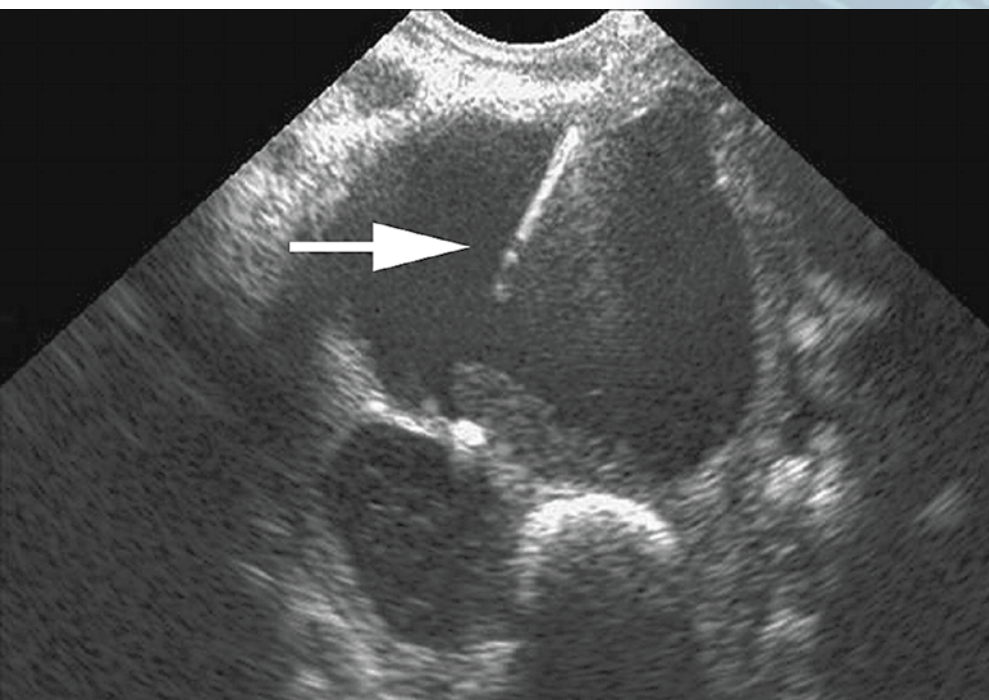
**D**uring the past 40 years, the area that was known as “the bronchoscopy suite” has morphed into a high tech computer based branch of pulmonary medicine. Originally located on 6 East, it had 1 small room for procedures and a room for patient recovery. From there, it moved to 5 East for a period of time before relocating in 1990 to its present home on the 3rd floor, south wing. Now it is known as Interventional Pulmonology which encompasses all the diagnostic and therapeutic procedures that are performed there. From such relatively routine procedures such as bronchoscopies, thoracenteses, and chest tubes, the IP department has evolved into an area that specializes in Pleurx catheters, laser treatment of tumors, airway stent placement, percutaneous tracheostomies, mediastinal lymph node biopsies, and the location and biopsy of small

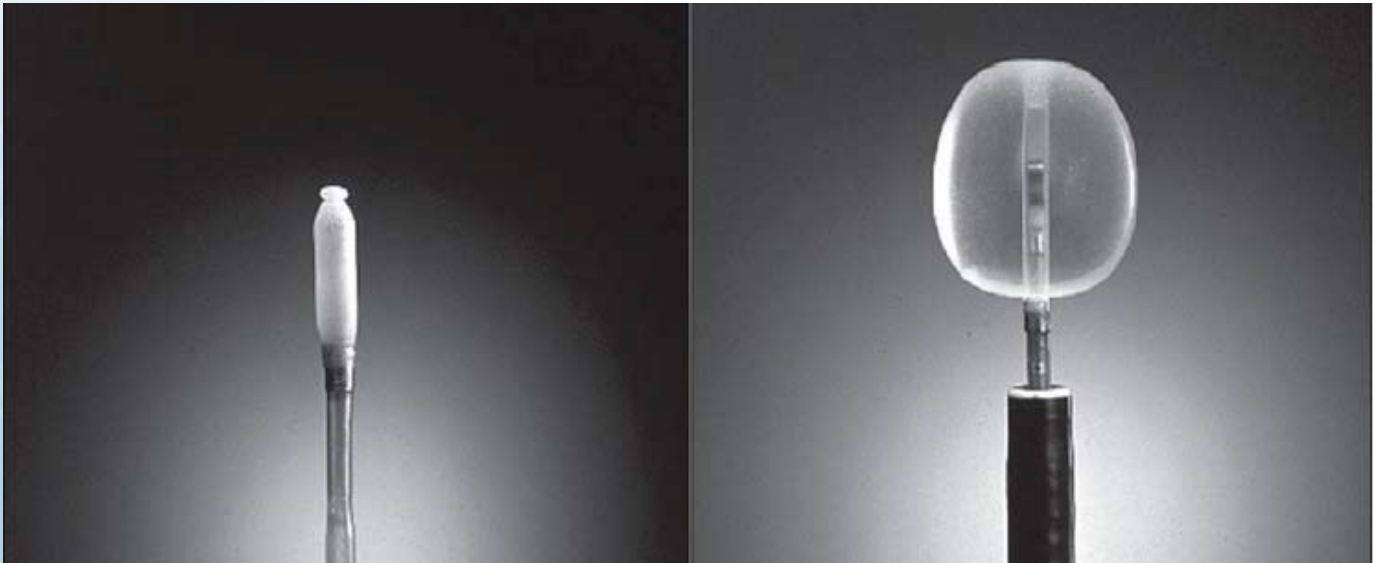
nodules in the lungs using a GPS-like system called Electromagnetic Navigation Bronchoscopy.

We have several new tools to help diagnose our patient’s chest abnormalities with a greater measure of safety than more invasive techniques. Two of our new diagnostic tools used to identify and biopsy structures in the chest use ultrasonography to locate lymph nodes and pulmonary nodules. (EBUS) scope has an ultrasound probe (convex probe) at the tip of the bronchoscope. It is used to identify mediastinal lymph nodes that surround the airways. Once the node is located, a small needle is inserted into the node and cells are aspirated. The cells are then placed on slides, stained by cytology techs, and then read by onsite pathologists. Patients can be diagnosed and staged in one procedure. The Radial Endobronchial Ultrasound is a long thin catheter with a miniature



**Laura Peluso BSN, RN** has been a nurse at UCSD Medical Center for over 20 years. She found a home in the Interventional Pulmonology Unit, where she has spent most of her career.

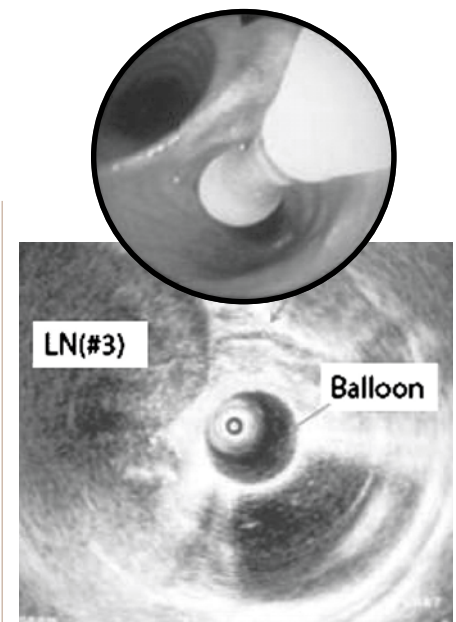




ultrasound probe at the tip. Along with fluoroscopy, the radial probe helps located masses or nodules less than a centimeter in size and assists the physician in taking biopsies, brushings and washings of these difficult to reach places in the distal lung parenchyma.

Our other new tool is called Superdimensions or Electromagnetic Navigation Bronchoscopy. This technology is also used to diagnose pulmonary nodules in the lung. With Superdimensions, a computer program matches the patient's CT scan with the patient's anatomy. The physician places markers in the computer to guide him in steering the catheter in the 3 dimensional chest model. The plan is then loaded into the superdimension computer. During the procedure, a special navigational probe is extended through the bronchoscope and used as a guide to lead the bronchoscopy to the nodule or mass. Once the nodule is located, fluoroscopic guidance is used to obtain specimens. The nurses are all highly trained to assist the physicians in guiding the locator probe to the mass, setting up and operating the Superdimension computer, and obtaining specimens such as biopsies, needle aspirations, brushings and lavage.

The role of the IP nurse is twofold. The technical side of the IP nurse's role is to ensure that all pertinent equipment is setup and functioning properly. The IP nurse assists the physicians in operating the equipment during the case, and afterwards the nurses assist with dismantling, disinfecting and storing the equipment. The IP nurse is also responsible for processing specimens and ensuring that they get to the appropriate lab. The patient care side of the IP nurse's role includes calling the patient the day before the procedure to answer any questions, and to establish a caring bond. On the day of the procedure, the IP nurse does the pre-operative preparation, continues to educate the patient and family, establishes IV access, and continually monitors the patient during the delivery of moderate sedation. Post procedure, the IP recovery nurse continues airway and cardiovascular monitoring while educating the patient and family on post-procedure care and what to anticipate at home. The IP staff have become specialists in the management of difficult airways. Some examples include tracheostomy care, care of transtracheal oxygen catheters, caring for airway stents, and instructions on



draining indwelling chest catheters at home. Patient education and support play a big role in our department.

All of these new technologies are used to search for and treat malignancies, infections and other diseases of the lung and chest. But no matter how technologically advanced the department becomes, the Interventional Pulmonary nurses pride themselves on promoting caring nurse-patient relationships and the human touch with each patient.

# Transplant Nurse Practitioner Creates A New Role At UC San Diego Medical Center

By Stephanie Osborne BSN, RN, CCRN, CCTC

In the Fall of 2009 the UCSD Health Center began to prepare for the reopening of the heart transplant program. Heart transplants and ventricular assist device surgeries had been routine at the health center only three years previously, but had been placed on hold while the program was reevaluated. With the Sulpizio Cardiovascular Center only a year away from opening it was determined that the time was right for UCSD to begin surgical treatment of advanced heart failure once again.

Transplant nurse coordinators play a vital role in transplantation. One of the first steps toward establishment of heart transplant and support device therapy programs was to choose a nurse coordinator. Because of the demands for clinical expertise, expanded knowledge and practice and the ability to provide education to a larger staff expected to function effectively with heart transplant and support device patients, the decision was made to acquire an advanced practice nurse to provide these services. Amanda Topik had been a staff nurse in the Thornton ICU for several years and was familiar with cardiothoracic surgical patients. During her tenure in the ICU she returned to school to obtain her Masters in Nursing and her Nurse Practitioner education. As a result she was uniquely placed to be able to provide both the services of a Clinical Nurse Specialist in preparing policies and procedures for the new programs, as well as patient, staff and community education documents and content to enhance care of these patients. She also had the skill set for providing clinical support to the surgeons and cardiologists as an

advanced practice nurse clinician.

Although Amanda had immediate clinical responsibilities as she began to develop the role of advanced practice nurse in the post transplant clinics, her main focus had to be the development and refinement of policies and procedures for the new program so that an application could be submitted to the United Network for Organ Sharing, which certifies transplant programs. She was also required to develop the protocols under which she would be functioning as a nurse practitioner at the same time as she completed the transplant nurse coordinator competencies already in place. The days were long and reams of documentation were generated. The UNOS application was finally completed and documents were submitted in the Spring of 2010. Dr. Jack Copeland, renowned cardiothoracic surgeon from Tucson, Arizona, joined the surgical team in late summer and the program began to escalate rapidly.

UCSD Health Center already had one ventricular assist device in use at that time, the AbioMed (AB5000) Circulatory Support System. This device can provide temporary support to either the failing right or left heart, allowing for rest and possible recovery. It does allow some mobilization of the patient, but requires the blood to pass through an external device and is powered by a machine at the bedside. This device has been used for some time at the UCSD Health Center and the ICU staff, including Amanda and the ICU clinical educators, were already experienced in its use.

There are multiple devices on the market for the support of the left ventricle for patients with advanced



**Stephanie Osborne BSN, RN, CCRN, CCTC** received her BSN from the University of Connecticut in 1973. She has had experience in both outpatient nursing (in the community, as well as hospital clinics) and inpatient nursing (medical ward, medical and surgical intensive care, cardiac intensive care and stepdown, dialysis and emergency department), in clinical research and in clinical education. She came to UC San Diego as a Heart and Lung transplant coordinator in August of 1996, and achieved certification as a clinical transplant coordinator in February 2006. In April Stephanie was recognized as the UC San Diego 2009 Nurse of the Year.

heart failure. The Thoratec Heart Mate II has a good record and was selected as the first implantable left ventricular assist device to be deployed at UCSD. The HeartMate II has FDA authorization both as a bridge to transplant and for destination therapy in patients who are not candidates for transplant. Amanda took charge of the education of the staff for implantation and post implant care.



Amanda Topik MSN, RN, NP Heart and Lung Transplant Coordinator.

She attended on-site training at a certified facility to observe and participate in device implantation. She established relationships with other coordinators who were experienced, learning from them how they structured staff and patient education. Upon return to UCSD Amanda began the process of setting up educational sessions for physicians (medical, surgical, and anesthesia), pharmacists, nurses (stepdown and ICU), clinical educators, therapists, perfusionists, and OR staff. She developed educational checklists for patients and families, based upon what

she received from Thoratec and learned from her colleagues.

By early September we had identified our first Heartmate II candidate, a 42 year old man with endstage ischemic cardiomyopathy, NYHA Class IV, on maximum oral therapy and IV inotropes, with chronic volume overload, ascites and malnutrition. He was too ill and debilitated to tolerate a heart transplant and the hope was that use of the VAD would allow for his condition to be stabilized, making it possible for him to gain weight and develop some strength. Amanda provided intensive pre operative education with the patient and his mother, who was to be his primary caregiver, in preparation for the implantation of the VAD as a bridge to transplant. Update classes were provided to the ICU staff and the stepdown unit staff so they would be ready to care for the patient. Surgery took place on 09/28/2010. Amanda was present to assist with the implant, along with the Thoratec support personnel. She was there for hands-on education with the OR staff, as well. She provided support in the ICU for the first few days until the

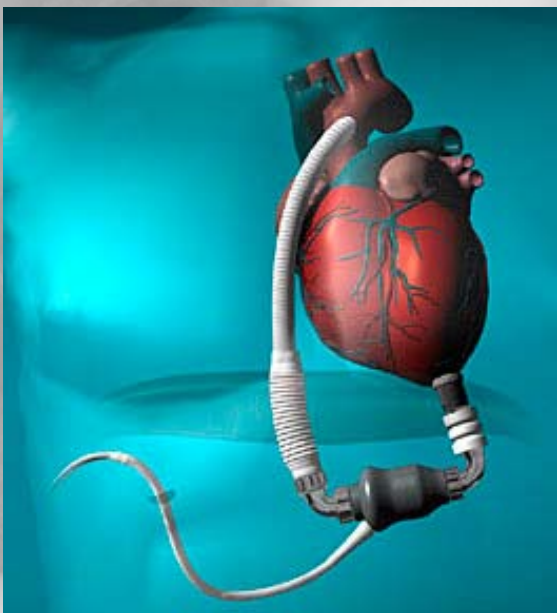
staff began to feel more comfortable with the nursing care, at which time her role became more clinical – rounding on the patient and doing further education in self care for the VAD patient and his mother. At the same time, she contacted his local paramedic group and provided education for them so that in case they were called to his home they would be familiar with the requirements of a patient with a Heartmate II ventricular assist device. She contacted the electric company, as well, to ensure that the patient would never have an interruption in the power supply to his home.

The patient did well, was discharged from the hospital after only two weeks to start his rehab at home. He was a star patient, managing the multiple device alarms and parameters with ease, with frequent input to his management from Amanda who saw him in clinic and handled his concerns over the telephone when he called. He became rather famous at UCSD, speaking to various groups and to the news media about his experience. He got stronger and improved his nutritional status in a very short time. He was listed and quickly received a heart transplant. He continues to make good progress, even taking his first trip away from home at the end of February.

There are other options in use at UCSD for patients with specific problems not met by the Heartmate II. The TandemHeart Percutaneous Ventricular Assist Device can be inserted either in the cardiac catheterization laboratory by a cardiologist or in the operating room by a CT surgeon. This device can provide short term support in patients with postcardiotomy cardiogenic shock, allowing the heart time to strengthen and potentially to recover. Support can be provided for either the right or the left heart, alone or in combination with other devices, from a console outside the body.

In selected patients with severely damaged hearts when both ventricles fail, when valves fail, in cases of severe arrhythmias or other electrical problems, or in transplant patients with donor heart rejection the SynCardia

## Heartmate II Placement



Brad is a 41 year old man with a long history of ischemic cardiomyopathy. He had a 5 vessel bypass in March 2009, followed by placement of an ICD/Bi-V pacemaker. He continued to require frequent hospitalization for CHF exacerbations and eventually required a continuous infusion of milrinone. He was listed for transplant on 9/22/2010, but continued to deteriorate. On 9/27/2010 he was transferred to UCSD Thornton hospital for implantation of a Heartmate II ventricular assist device. He was very deconditioned and nutritionally at risk at implant, but rallied quickly in the hospital once he achieved a cardiac output with the VAD. He was discharged on post operative day 17. At home he continued his conditioning program and an aggressive nutrition program was started. He became more functional and gained enough weight that he could be listed Status 1 A for heart transplant in late December. On

January 10, 2011 he was taken to the OR where the VAD was explanted and the new heart was implanted. He left the hospital again after only 17 days. Brad has done well post transplant, even becoming something of a UCSD ambassador, visiting other patients in the program, both before and after implant of devices and transplant.



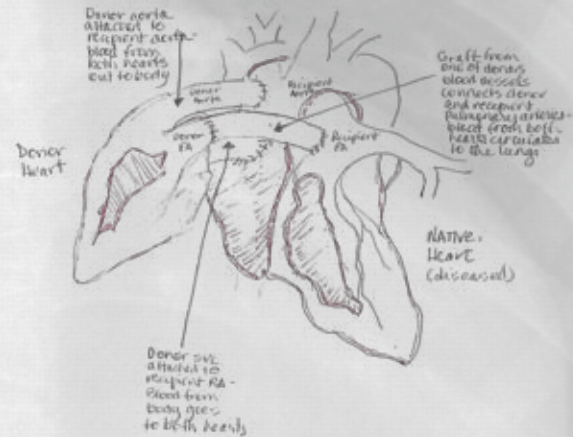
Tyson is a 36 year old man with a long history of nonischemic cardiomyopathy, complete heart block and LV thrombus requiring warfarin therapy, who was hospitalized in January 2011 with worsening CHF. His condition continued to deteriorate despite the addition of IV inotropes so he was listed urgently for transplant. On February 13, 2011 he received a heterotopic heart transplant, a relatively rare procedure where his own heart remained in place while the second donor heart was implanted next

to it. He was facing death, but because of very high pressures in his lungs, a donor heart would be likely to fail. Positioning the new heart on the right side of the donor heart and surgically attaching the donor and recipients' left atria allowed oxygenated blood in the patient's native heart to flow into the donor heart. This blood is then pumped by the donor ventricle into the patient's original aorta and then out to the rest of the body.

Tyson was extubated on post op day 1. Inotropes were slowly weaned. On day 4 he transferred to the ward. He gradually increased his activity and spent time with the transplant nurse practitioner learning about the care of his new transplanted heart. He was discharged home on day 11 and continues to do well. He is expected to return to normal activity within a few months.

## Heterotopic Heart Transplant

Not shown - Donor and Recipient left atria are joined so blood from lungs flows to both hearts



total artificial heart (TAH) is an option for bridge to transplant. Use of the total artificial heart can eliminate the problem of right ventricular failure which cannot be managed by a left ventricular device alone. Use of the TAH eliminates the need for defibrillation or antiarrhythmic drugs. Inotropes are not needed. It can offload the venous system, ensuring low CVP, high cardiac output and control of volume. It can be used as rescue for acute cardiogenic shock in emergent situations and also in patients with chronic multisystem organ failure caused by heart failure. It allows for removal of the diseased, enlarged heart which is often a source of thromboemboli and arrhythmias. It also allows for early extubation and early ambulation, so that patients can rehabilitate to the point of being good transplant candidates. When they are no longer in heart failure patients have improved appetite and can benefit from early aggressive nutritional therapy. The complication rate is similar to that of

other implantable devices, with infection and anticoagulation being the most significant issues. Amanda became the super user of the TAH when it was brought to UCSD, again arranging for and providing staff and patient education, as well as support prior, during and after implantation. She was instrumental in establishing a system for anticoagulation reporting, ensuring that results were timely. She will also be attending the implants until the OR staff are comfortable with the surgical demands of the pump, as well as assisting the nurses in the ICU and on the stepdown unit to become comfortable with the care of these challenging patients.

Clearly the advanced practice cardiothoracic surgical and transplant nurse practitioner role at UCSD is varied and challenging. Now that the policies and procedures are in place and we have done several implants of assist devices and several heart transplants, Amanda is increasing her clinical

management skills. She sees patients in pre transplant clinics, orders workups for device implantation or transplant, rounds on patients in house, provides patient education both pre and post device implant and pre and post transplant. She follows patients with the surgeons and cardiologists after device implant or transplant. She participates in the ongoing quality assurance monitoring of the program with the goal of ensuring that required certifications are obtained so that the entire program will thrive. She attends weekly multidisciplinary conferences where patient care is discussed and candidates are presented for devices or transplant. She also takes call, triaging patient complaints on nights and weekends, as well as serving as transplant coordinator for both the heart and lung transplant programs when donors become available. Her role will continue to evolve and to be refined over time as the program grows in size and complexity and as she integrates new skills into her practice.



## Academic Achievement:

Cathie Tiernan BHA, RN (Columbia Southern University). Cathie is currently enrolled in the MSN program at Loyola University.

## Certifications in Professional Service Nursing Areas:

Barbara Andrews MSN, RN, FNP-BC  
Deborah Ashton BSN, RN, CNN  
Christine Brenner RN, CPTC  
Eileen Chatfield BSN, RN, CCTC  
Cynthia Collins MSN, RN, FNP-C, CCTC  
Jarne Condell BSN, RN-BC  
Bart Costa RN, CNN, WCC  
Christine Cuenca, BSN, RN, CNN  
Deborah Den Boer BSN, RN, CGRN  
Becky Dodd-Sullivan BSN, RN, CPTC  
Adela Fabia RN, CNN  
Grace Gelacio, BSN, RN, CNN  
Cita Gruta BSN, RN, CNN  
Ilene Gustafson BSN, RN, CCTC  
Shirley Ho, BSN, RN, CNN  
Leanne Kelly BSN, RN, CGRN  
Wendy Lester RN, CNN  
David Lewino RN, CCTC, CPTC  
Sandra Leyden MSNc, MA, RN, CPTC  
Emerson Lim, RN, CDN  
Charito Linco BSN, RN, CNN  
Eileen Lischer MA, BSN, RN, CNN  
Patty Macgill BSN, RN, CCRN  
Donna MacMillan, RN, CGRN  
Ana Manulis BSN, RN, CNN  
Rhonda Martin MS, RN, CCRN, CNS/ACNP-C  
Diana Mertrude BSN, RN, CCRN  
Kevin Mclean BSN, RN, CCRN  
Noel Oabel, BSN, RN, CNN  
Babette Ortiz, BSN, RN, CCRN  
Stephanie Osborne, BSN, RN, CCRN, CCTC  
Daniel Patiag BSN, RN, CNN  
Edita Petil BSN, RN, CNN  
Anne Powers MSN, RN, FNP-BC  
Heather Preston BSN, RN, CPTC  
Margie Quinto BSN, RN, CNN  
Suzanne Reed BSN, RN, CCTC, CPTC  
Lisa Richards MSN, RN, FNP-BC  
Joanie Salotti MSN, RN, ANP-C, CCTC  
Shelby Samonte BSN, RN-BC  
Linda Soaft, MSN, RN, ANP-BC, CCTC  
Eden Soliman RN, CNN  
Erna Soriano RN, CDN  
Jill Stinebring BSN, RN, CPTC  
Michael Thompson MPA, RN, CNOR  
Stella Ting BSN, RN, CCRN  
Jeff Trageser BSN, RN, CPTC  
Thuan Tran, BSN, RN, CNN  
Danny Vasquez BSN, RN, CRNI  
Yvette Waters BSN, RN, CNN

## Professional Presentations:

Lourdes Ada BSN, RN will be presenting Success Story Optia Innovation at the American Society for Apheresis (ASFA) conference in Scottsdale AZ in May 2011

Cynthia Collins, MSN, FNP-C had her abstract on Is Liver Transplant an Appropriate Remedy for Failed Suicide Attempts? presented at the International Transplant Nursing Society (ITNS) in October 2010 and it was awarded the best abstract in the ETHICS category.

Jessica Goggin BSN, RN presented at the California Thoracic society on Pediatric and Adult Palliative Care for Chronic Lung Disease in January 2011. She will co-chair a symposium on 'End of life Care in Cystic Fibrosis' at the North American Cystic Fibrosis conference in November 2011.

Eileen Lischer MA BSN, RN, CNN completed five workshops (Nursing Competencies in CRRT, Water Safety in the Acute Dialysis Setting, Nursing Issues in Establishment of a CRRT Program, Approaches and Methods for Continuous Performance Improvement in the Acute CRT Program) for the International CRRT conference in San Diego in 2010. She also presented a pre-conference for the American Nephrology Nurses Association National Symposium in Boston, MA in 2010.

Isagani Marquez, J. BSN, RN presented a poster and abstract at the National Apheresis Conference (ASFA) in New Orleans in May 2010 on Pediatric Plasmapheresis Database Outcomes.

Rhonda Martin MS, RN, CCRN, CNS/ACNP-C presented a The Role of Interventional Radiology in Abdominal Organ Transplantation. Annual Update in Transplantation Conference, UCSD Medical System and Center for Transplantation, October, 2010. Bridging the Gap in Patient Care: Role of the IR Nurse Practitioner. Invited speaker, Western Angiographic and Interventional Society Annual Conference, Lanai'i, HI, September, 2010. Acute Care Renal Syndromes. Invited speaker, American Academy of Nurse Practitioners Annual Conference, Phoenix, AZ, June, 2010. Acute Kidney Injury: Definition, Diagnosis, Management. Invited speaker, American Academy of Nurse Practitioners Annual Conference, Phoenix, AZ, June, 2010.

Suzanne Reed BSN, RN, CPTC, CCTC presented the Transplant Education Program Improves Patient Medication Knowledge and Adherence at the International Society for Heart and Lung Transplantation (ISHLT) in April 2011.

Lisa Richards MSN, RN, FNP-BC presented a Fatty Liver Disease program for the American Liver foundation in March 2010. Lisa also prepared a CME program on Hepatitis C at the American Association for the Study of Liver Disease in October 2010. She presented our Hepatitis B Program at the California Association of Nurse Practitioner's convention in September 2010.

Lysa Woodall, RN CCRC, CCRA and Suzanne Reed BSN, RN, CPTC, CCTC gave a national webinar presentation, March 2011, on Transplant QAPI Program.

## Professional Publications:

Rhonda Martin MS, RN, CCRN, CNS/ACNP-C Guest Editor, Symposium on Acute Renal Dysfunction. AACN Advanced Critical Care Volume 21, Number 4. October-December, 2010. Martin, R. (2010). Acute Kidney Injury: Advances in definition, pathophysiology, and diagnosis. Invited Author, AACN Advanced Critical Care, 21(4), 350-356.

Becky Dodd-Sullivan BSN, RN, CPTC will have her article titled 'Ventilator Autotriggering: A Caution in Brain Death Diagnosis' published in the June 2011 issue of Progress in Transplantation.

## Certification definitions;

**ACNP-C = Adult Certified Nurse Practitioner**  
**CCRN = Certified Critical Care Registered Nurse**  
**CCTC = Certified Clinical Transplant Coordinator**  
**CDN = Certified Dialysis Nurse**  
**CGRN = Certified Gastroenterology Registered Nurse**  
**CNN = Certified Nephrology Nurse**  
**CNOR = Certified Operating Room Nurse**  
**CPTC = Certified Procurement Transplant Coordinator**  
**CRNI = Certified Infusion Registered Nurse**  
**FNP-BC = Certified Family Nurse Practitioner**  
**WCC = Wound Care Certified Nurse**



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