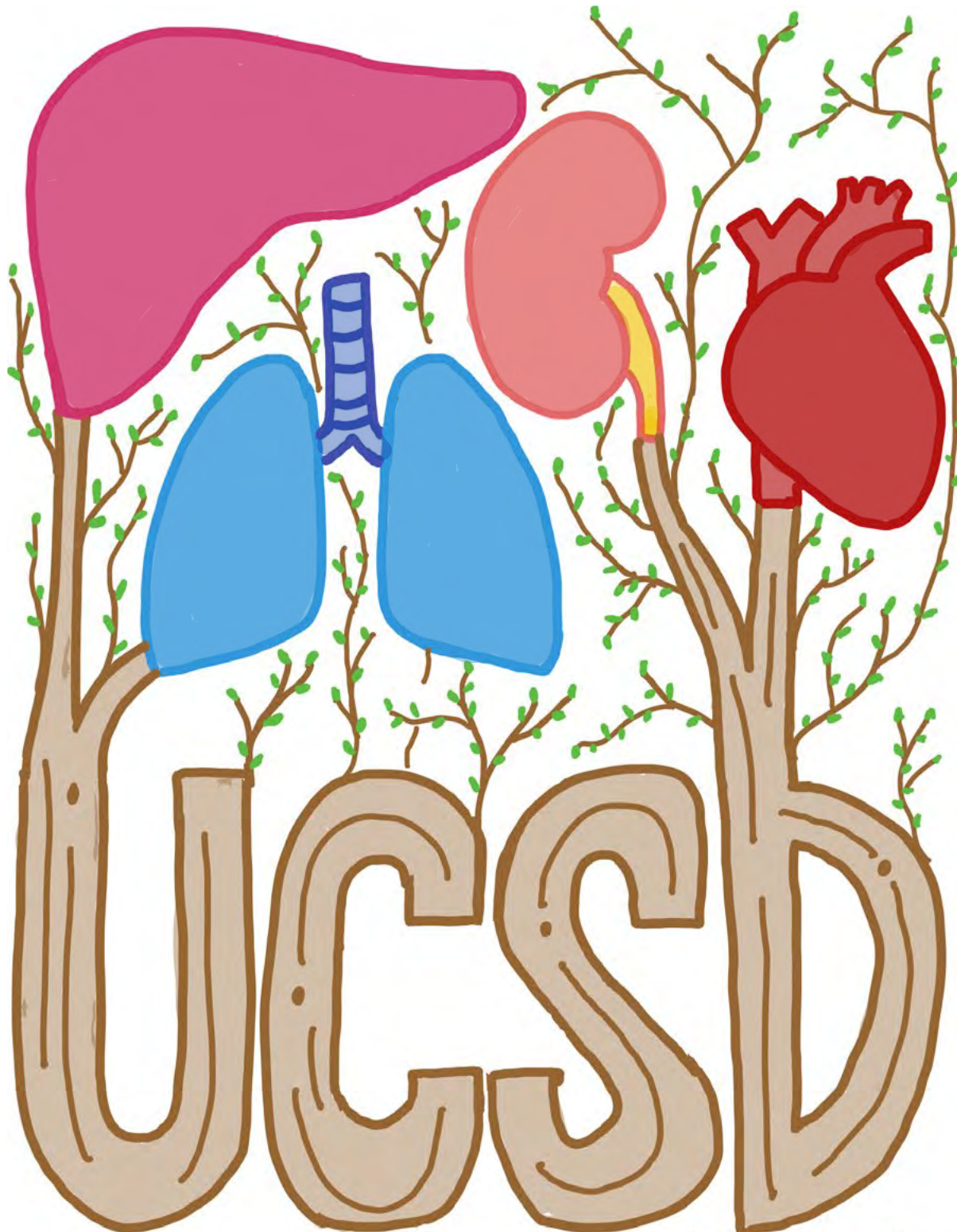


UC San Diego Health

# JOURNAL OF NURSING

SPRING 2020

UNIVERSITY OF CALIFORNIA, SAN DIEGO



*K. Mekeel*

SPRING 2020

# JOURNAL OF NURSING

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On the front cover:  
The UCSD Tree of Life  
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Dr. Mekeel is the Chief of the Division of Transplant Surgery and was inspired by her liver transplant team to create this design. She doodles on her iPad during her spare time.



## Five Magnet Components

- Transformational Leadership
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Shared Governance 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 <https://health.ucsd.edu/medinfo/nursing/Pages/nursing-committee-opportunities.aspx>

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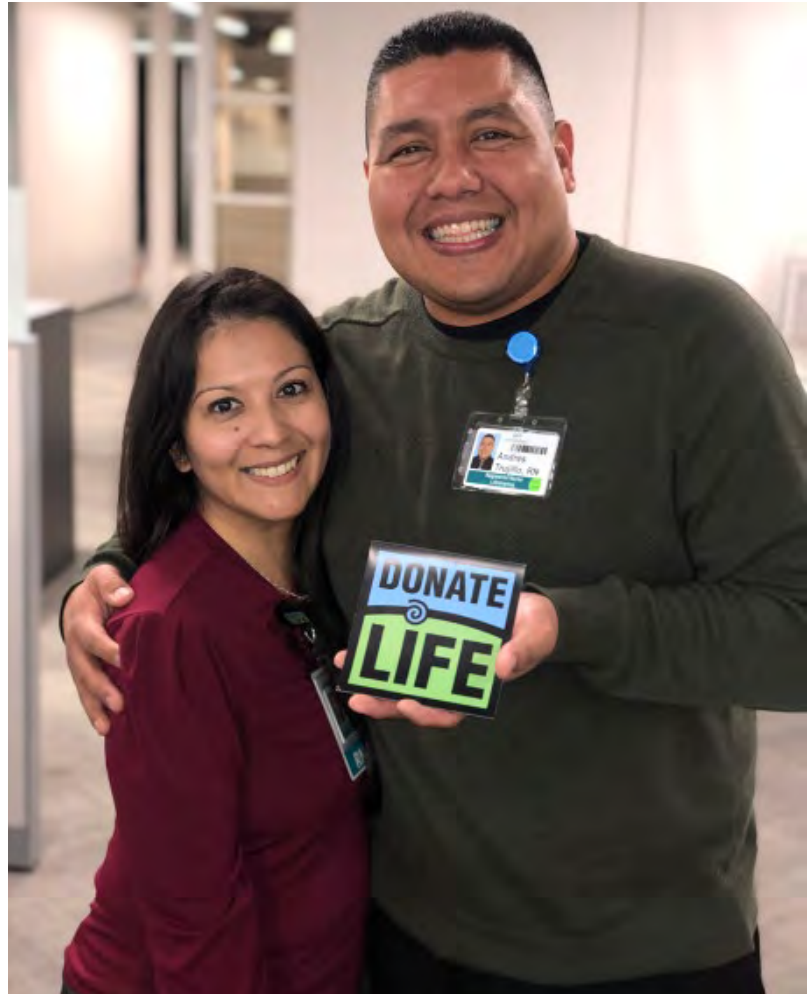


# Message from the The Chief Clinical Officer

It is with great pleasure that we present the 2020 UC San Diego Nursing Journal on the topic of Transplantation. It is fascinating to learn about the variety of different transplant procedures provided and the roles that nurses perform in to provide these services at UC San Diego. We are forerunners in transplant services for the county with a long legacy of kidney, liver, heart, lung and pancreas transplants. Nurses perform roles as transplant coordinators, advanced practice nurses, extracorporeal membrane oxygenator and ventricular assist device specialists, and inpatient and ambulatory care clinical nurses.

## LIFESHARING

UC San Diego supports Lifesharing, the organ procurement organization (OPO) for San Diego and Imperial Counties. Lifesharing was founded in 1973 (as the Organ and Tissue Acquisition Center) to facilitate donors for the UC San Diego kidney transplant program and burn center. Currently Lifesharing is led by Lisa Stocks. Lisa worked as a registered nurse procurement coordinator in the 1990s and returned in 2003 as Executive Director. Lifesharing is one of 58 federally designated OPOs and facilitates the donation of organs for the approximately 113,000 people on the national organ transplant waiting list, including more than 2000 waiting for a life-saving organ here in San Diego. Lifesharing is consistently ranked as one of the top organ procurement organizations in the country recording a record number of organ donors recovered and organs transplanted for the last 4 years in a row. Our organ procurement team members are edge



Corina Manzo and Andres Trujillo

runners in creating new and innovative approaches to improve the experience of the donor families, donor hospital staff and transplant teams. For instance, UC San Diego Lifesharing developed a process for use of VPN technology to share organ images with transplant centers rather than using outdated and risky facsimile transmissions. This new approach sped up the process with which a transplant center could evaluate a potential organ for their recipient. The images were of higher quality through VPN and provided receiving centers with more confidence

in the suitability and function of the organs. Recently, Lifesharing has focused on increasing use of Hepatitis C positive organs, which has decreased transplant wait times, increased numbers of transplants and survival to transplant. Due to the changes in treatment availability for Hepatitis C, hearts and lungs are now considered viable where they were once not eligible. Another unique contribution our team has made to advance the profession is to streamline the process for organ procurement organizations to list and consider use of a previously transplanted heart from a



Back row: Allison White, Brian Amaral, Charles Wainaina, me, Andres Trujillo, Haley Dragoo  
 Front Row: Andrea Vazquez, Kim Metz, Lisa Stocks, Debbie Woods, Amanda Cole

recipient who has died. The interesting piece of the puzzle is that the organ must be listed as the age of the original 'owner' of the organ which can increase the chances that it will be considered for re-transplantation since donors are often younger than transplant recipients, thereby increasing chance of survival of an additional recipient. Using a heart in more than one recipient has only been accomplished twice in the United States in the last decade and both were facilitated by the UC San Diego Lifesharing team. Lifesharing is housed in a beautiful building in Mission Valley and decorated with art donated by two artists from San Diego. There are 13 organ procurement coordinator registered nurses led by Jeff Trageser MS RN, Clinical Director for Lifesharing.

## OUR HISTORY

I originally wanted to write this preface with special information about our history

as a transplant center, giving tribute to those who started these services over time. UC San Diego is only 50 years old, and you would have thought this would have been an easy and rewarding task; however, we were unable to find the first nurses to serve with our liver, heart, kidney, pancreas and lung transplant teams. The founding surgeons have moved on, and the current teams do not have a recorded history. I did learn that Mikki Masteller, RN, was one of the two first transplant/organ coordinators for UC San Diego Lifesharing in the early 1970s.

This brings me to a new 'quest' and 'ask'. Every nurse at UC San Diego serves within a special team providing unique and exemplary services to our community. It would be an honor if each of our teams could trace back their legacy to find the first nurses who served as managers, educators, advanced practice nurses, nurse specialists, and clinical nurses. When a new service starts, there

is always a nurse responsible for securing the right equipment, staff, protocols, and expectations for nursing care of the patients. Who were these nurses who set the stage for each of our existing programs? Recognizing and honoring those who came before us, while creating a record of our accomplishments along the way, will help to bolster our identity as the special UC San Diego nurses that we are. Please consider with your teams and let me know of your progress.

With Gratitude,

**MARGARITA BAGGETT, MSN, RN**  
 CHIEF CLINICAL OFFICER

# Solid Organ Transplant at UCSD

By: Tamra Magee, MSN, RN

## Organ Transplantation... a dream of the past, a reality of the present and a hope for the future.

Once a dream of science fiction, organ transplantation has become a modern mastery of medicine. Years of botched and failed attempts provided invaluable experience and knowledge, and finally gave way to tremendous successes. Today, more than 90% of patients who receive an organ transplant survive beyond 1 year; many going on to lead “normal” lives and outliving their original prognosis by several years.

As the only academic health center in San Diego, UC has long been a leader in the transplant community. As the region’s first (and only academic) transplant center, UCSD has a 50 year history of providing comprehensive care for those in need of transplant as a treatment for end-stage organ failure as well as for those who are willing and able to become living kidney and liver donors. From performing San Diego’s first kidney transplant in 1968, to implanting the first electronically-driven ventricular assist device (VAD) in 1998, to the first Hope Act (HIV+) transplant in 2019, we have proudly pioneered many advancements in the field.

Dr. Robert Steiner recalls the early days... “In the beginning many of the kidneys didn’t work and had to be taken out almost immediately. Now it is rare if a kidney doesn’t work. It really is incredible, the progress we’ve made.” He has been

with the kidney program since 1978, a time when transplantation was still relatively novel and when, despite early successes, UC San Diego had fewer than 100 patients registered on the national waiting list.

Today, there are nearly 1,000 patients waitlisted among all the organ programs at UC San Diego Health. Although the waiting time is often longer in Southern California than it is in less populated areas of the country, patients come from both near and far because they know they will receive high quality, lifelong care at UCSD.

Joanie Salotti, a transplant nurse practitioner, can recount the names and transplant dates of some of the liver program’s first patients. Joanie started as an ICU RN in November of 1993, just five months after the first liver transplant was performed. She cared for newly transplanted patients in the ICU for 8 years before joining the team as an NP in

2001. She has collected many special memories, but the one that stands out the most for her is caring for an infant who received a piece of her mother’s liver through living donation. Joanie continues to care for that baby – now 18 years old – post-transplant. Watching her continue to grow and thrive has been one of the great joys of Joanie’s career.

Of course, not every transplant story has a happy ending. Patients often end up critically ill, with multiple comorbidities; and the demand for deceased donor organs far surpasses the available supply. Across San Diego county, 20 people a day die while waiting for transplants. With the increasing need for alternative options, our team has worked to develop and improve surgical techniques in order to save more lives.

David Garcia, NP can recollect many innovative ideas that he has played a part in implementing since joining the heart and lung program in 1997. Although the program performed its first successful double lung transplant in 1991, the 64th in the world, the concept of a double lung transplant from a living donor, at the time, had crossed few minds. Using portions of lung from each of his parents, a 16-year-old boy suffering from cystic fibrosis became the first person at UC San Diego, and the fourth person in the entire world, to undergo the procedure.



**Tamra Magee, MSN, RN** has been with UC San Diego Health for a year and a half as the Director for the Center of Transplantation. She spent the first ten years of her career in northern California as a registered respiratory therapist and then decided to attend nursing school to continue to expand in the field of healthcare. She has worked as a registered nurse for the past eighteen years in cardiac intervention, ICU and transplant. She entered the specialty of transplant after a personal experience with transplantation. Her father, who suffered from Primary Sclerosing Cholangitis (PSC) received a successful liver transplant sixteen years ago and she joined the Organ procurement organization (OPO) as a transplant coordinator one year later. For the past twelve years, Tamra has been in a transplant leadership position and in 2016 earned her MSN with a concentration in leadership from Chamberlain College of Nursing. She feels fortunate to have had opportunities to serve on national committees and present on transplant topics over the years. She was appointed as one of the first regional collaborative leaders to transition the HRSA donation and transplantation community of practice from a national level to the local region level. Most recently, she serves on a national leadership committee with The Alliance, an organization that provides engaged learning and collaborative leadership for the transplant professional community. In her free time, she enjoys traveling with her family.

Unfortunately, the boy did not survive for long, but David is proud to have been a part of a team that pushed the envelope – doing everything in their power to give their patient a second chance at life.

For the most part, the benefits of organ transplantation have been worth the risks. Take, for example, the time that Dr. Victor Pretorius was able to re-transplant a heart into a new recipient after the first had died from unrelated health complications. This procedure had only been done 10 times worldwide as of 2016. It is this kind of thinking, this leadership, that's landed the heart transplant program among the best in the nation.

To date, the UC San Diego Health Center for Transplantation has performed more than 5,000 heart, lung, kidney, liver and multi-organ transplants. We continue to push the envelope, not only because we have some of the brightest minds and most technically skilled surgeons in the country, but because it's the right thing to do for our patients. Here's to another 50 years and 5,000 transplants!

*"I want to thank my colleagues in transplant for sharing their valuable insights & memories with me for the purpose of this article."*

# Honor Walk at UC San Diego Health

By: Heidi Burnell, BSN, RN

Honor walks have been taking place across the United States for the past few years with growing popularity as a way to pay tribute to the donor, and the donor's family. The chime sounds, signaling UC San Diego employees to ready themselves for this mark of respect. The honor walk takes place at an odd pause between life and death as the patient is solemnly moved from

the ICU to the operating room for organ donation. It is a powerful act of community – the halls are lined with nurses, doctors and hospital employees, all silently thanking this individual for their final gift. The first ever UCSD honor walk took place in September of 2019 at UCSD Hillcrest. A beloved fire Captain and father of seven lost his life in an off-duty accident. He was too

**Heidi Burnell, BSN, RN** is an Assistant Nurse Manager in Jacobs Medical Center 3GH ICU. She has been a nurse for 21 years and is currently in a master's of nursing program at WGU, with an anticipated January 2021 graduation date. She is married with four boys and can be found almost any weekend at the hockey rink cheering them on.

critically injured to be saved, but his generosity in his final days went on to save four lives and impact many more. Directly after the honor walk, the Lifesharing flag is raised in the courtyard by both security and the donor's family, in order to honor the life given and the lives he saved.



Donate Life Flag raised outside of UC San Diego Hillcrest





Erin Jenkins, RN, UCSD

Erin Jenkins (pictured), RN, UCSD employee on Jacobs Medical Center's 3GH ICU, composed the original chime that is played to signal the initiation of the honor walk. I had a chance to sit down and talk with her in order to get a glimpse into her personal life and learn about how she developed the chime and her intimate connection to the honor walk.

Erin has been a nurse with UCSD for seven years and has worked the last five of those years in the ICU. She is currently in the Nurse Practitioner Program at Azusa Pacific University with a graduation date of May 2020. She plans on seeking a nurse practitioner position within holistic medicine or the sleep medicine service upon graduation. She is married with one dog and loves to hike, attends yoga and thoroughly enjoys the sights and sounds of the ocean.

Erin is passionate about music and has been composing music and

playing the piano since she was 5 years old. She has a holistic view of the world and integrates it into her daily practice at the bedside, including aromatherapy and music therapy for her patients. She designed the chime with the concept of time in mind. The chime is four chords; the first three are similar, representing the donor being walked into the operating room for donation. The fourth chord represents new life being gifted to the recipient. Erin feels, "time is constant, it never begins or ends, you cannot gain time unless you donate it."

Working in the ICU, Erin is continuously surrounded by loss. She states, "Not only do ICU nurses frequently experience death, but also loss – real loss. People who have lost their independence, their dreams to travel, watching their daughter walk down the aisle or the birth of their first grandchild. As a nurse, we walk in and out of people's lives, often for only a short moment. Their stay

in the ICU is but a brief fraction of time, only a fleeting instance, really. The Honor Walk, to me, is an opportunity to help someone cope with loss by giving hope. It is giving the ultimate gift, not only the gift of time but the gift of hope. When every medical intervention has failed, the legacy of one's life is left to extend another. So, dreams to travel, walk your daughter down the aisle, or hold your first grandchild, these moments are in some sense restored. And while there is no way to escape life's tragedies, there is solace in finding meaning behind them."

An Honor Walk at UCSD represents respect, hope and life. If you would like to learn more about the honor walk at UCSD please visit the UCSD pulse website at <https://pulse.ucsd.edu/departments/experience/resources/Pages/honor-walk.aspx>

# When Patients get **The Call**

By: Maggie Mendenhall, BSN, RN

Waitlisted. Placed in a holding pattern. Physically restricted due to symptoms related to heart failure. Geographically restricted in order to drive to the hospital quickly when “the call” is received. Waiting for the opportunity for another chance at life. . .

Some heart failure patients live with the uncomfortable and unfathomable reality of waiting for someone to die in order to receive a second chance at life for days; some live this way for months, some – for years. Several patients on the heart transplant list require a mechanical device implanted into their heart called a Left Ventricular Assist Device (LVAD) because they are too sick to wait for a new heart. This device is life-altering in that the patient requires external equipment at their side at all times to maintain it despite the LVAD being a fully implanted device in the patient’s heart. As expected, significant lifestyle changes come with the implantation of an LVAD. A second or third chance at life hangs in the balance for the advanced heart failure patient or LVAD patient waiting for a heart transplant.

The heart transplant coordinator plays a significant role in coordinating the setup of the heart transplant procurement and surgery. From reviewing the donor heart and discussing with the cardiothoracic

surgeon and heart failure doctor, setting up transportation for the medical personnel involved in the procurement, to notifying all pertinent players involved in the surgery, the heart transplant coordinators all would agree that the most gratifying part of the process – next to a successful outcome – is getting to make that phone call to the patient to inform him or her that a perfect heart is available. The phone call usually contains a question along the lines of, “Do you have plans today?” The coordinators have received all sorts of answers: “I am just driving home from a short vacation,” “I have no plans at all,” and “Well, I was about to go skydiving!” Despite what plans the patient had, getting that life-saving phone call takes priority. An initially annoyed “Why?” turns very quickly into screams of celebration and tears of joy from a mother when her son, phone in hand, yells across the room, “Mom! You’re not going to work today. I’m getting a heart transplant!” Joy. Relief. Sadness. Anxiety. Grief. Happiness. Peace. These are just a handful of the emotions a



**Maggie Mendenhall, BSN, RN** is a Heart Transplant/VAD coordinator for UC San Diego. She completed her nursing degree at the University of Oklahoma in 2006 and started her LVAD and heart transplant career at INTEGRIS Baptist Medical Center in Oklahoma City, OK in 2013, where she also managed the LVAD program. Maggie has been with UCSD heart transplant and LVAD team since January 2019.



Former LVAD patient, Marcelle Cass, received his Heart Transplant on 9/27/2019. Pictured with Marcelle is his mother during a clinic visit in December 2019.



Marcelle Cass with his Heart Transplant/VAD coordinator, Maggie Mendenhall.

person feels when undergoing this process, from start to finish. Many patients request “a minute” to process everything going on inside while on the phone with the coordinator when that phone call initially happens. In reality, patients need months or years to truly reconcile the emotions that surround receiving such an enormous gift another person has freely given. The graciousness of a donor is what helps the majority of patients live well with the new heart and new chance at life they have been given in order to be a good steward of this unexpected gift. Each heart transplant team member at the University of California, San Diego (UCSD) has their own unique and important place in the lives of these patients. The honor that comes with being involved in this amazing field of medicine takes on a whole new meaning when a patient affirms the work done by each team member and shows overwhelming gratitude for all they meet. As one patient has

said, “This is not just like winning the lottery, although many compare it to that. This is more than that. This is my life.” Oftentimes patients are asked, “Do you feel any differently?” or “What does your new heart feel like inside your chest?” Heart transplant recipients will crave foods they previously hated, or hate foods they previously craved. They will feel an urge to try new things they previously had no desire to try. Some just say, “I feel different” without any words to describe what is happening within. However, one patient is very descriptive of her new heart. She says, “It feels incredible. I can feel the beating more than I ever remember feeling my own heart. It feels warm, strong and consistent.” As UCSD continues to transplant growing numbers of patients with heart disease, more and more lives will be saved and more and more families will remain whole. Our goal in this overwhelming and arduous journey for all of the heart transplant

recipients is to be just as our patient has described: Warm. Strong. Consistent. If the UCSD heart transplant team is able to serve with compassion, strength and consistency, many more years of joy and second chances are inevitable for each of these heart transplant patients.

# A Day in the Life of a Liver Transplant Coordinator

By: Cynthia (Cyndy) Collins, MSN, FNP-BC; Eunice (Ong) Manzano, MSN, FNP-C, PNP; Joanie Salotti, MSN, ANP, CCTC; Kelly Dobbins, BSN, RN, CCTC, Donovan Benedicto BScN, RN



## **Eunice (Ong) Manzano, MSN, FNP-C, PNP**

is a Nurse Practitioner on the Liver Transplant Team at UC San Diego Health. She earned her MSN/NP from the University of San Diego. She has worked with UC San Diego for 10 years, 5 of which were dedicated to the liver transplant program. She received Rookie of the Year 2009 and Nurse of the Year 2012 for her PCU department under the management of Dorothy Macavinta and Beverly Kress. She is also active in the Filipino American Community as the Co-President of the San Diego Fil-Am Youth Foundation and serves as one of the Board of Directors for the Fil-Am Humanitarian Foundation. She enjoys traveling with her husband Renato (Ren), and two young children Erin (3y) and Ethan (1y).

Living from the heart a path is chosen,  
We search through others only to discover ourselves.  
Along the way, we listen, we touch, we care, we heal and we grieve.  
Empowered through compassion and conviction,  
Keeping the vision of the future in sight,  
Transplant nurses continue on their journey.

- Joanie Salotti, MSN, CCTC

Transplant coordinators are registered nurses or advance practice nurses who have at least 5 years of experience as a registered nurse and a strong interest in organ transplant. Requirements for becoming a liver transplant coordinator vary depending on institution. Experience working as a nurse on a transplant floor or an intensive care unit is helpful and may be a pre-requisite in some institutions. Professional organizations that transplant coordinators may be members of include - the International Transplant Nurses Society and North American Transplant Coordinators Organization (NATCO) both of which focus on professional development opportunities for transplant nurses and other transplant professionals through education and training. Nurses may become certified as Clinical Transplant Coordinators (CCTC) or Clinical Procurement Transplant Coordinators (CCPTC).

Liver transplant coordinators provide care for critically ill patients with liver disease along the continuum of care.

We see it all - critically ill patients awaiting a new liver, the loss of a patient on the waitlist or post-transplant, patients requiring second or third transplants, disappointment when patients do not adhere to recommended medical regimen resulting in worsening disease, graft rejection, or perhaps loss of a graft. We share joyful moments and excitement with our patients when we call them to inform them of a potential liver offer. We see tears of joy from the caregivers and patients after the transplant is completed. Transplant nursing can be grueling, but most of us would not trade it for any other specialty because of these special LIFE-CHANGING moments.

Liver transplantation is a second chance at life and the beginning of a new journey for the recipient. Behind every liver transplant, there is a nurse transplant coordinator working as part of a multidisciplinary team providing care to the patient at different junctures along the way. Pre-transplant nurse coordinators are responsible for coordinating the care of newly referred patients to



**Kelly Dobbins, BSN, RN, CCTC**

graduated in 1998 from Georgetown University School of Nursing with Bachelors in Science of Nursing. Her first nursing job was at UC San Diego Health in the CCU/ MICU as a new grad. She then worked Surgical/Trauma and Burn ICU before transitioning to Liver Transplant. She is a Certified Clinic Transplant Coordinator and has attended NATCO conferences and Region 5 meetings, collaborating with other transplant professionals. She provides education to both staff and patients/families about Liver Transplantation. She has been with UCSD Liver Transplant for 8 years.

liver transplant. This process involves working with referring providers, transplant hepatologists, transplant surgeons, the patient and families to determine medical suitability for transplant. The pre-transplant nurse coordinator guides the patient through the entire evaluation process. A very close relationship cultivates during this process as patients and their families become new members of the transplant team.

Liver disease leading to cirrhosis may be caused by different illnesses. Hepatitis C is still the most common cause of cirrhosis in the United States.

Diseases which may lead to cirrhosis and required consideration for liver transplant include: chronic hepatitis C, alcohol related liver disease meeting UCSD liver transplant sobriety requirements, nonalcoholic fatty liver disease, primary biliary cholangitis, secondary biliary cirrhosis including but not limited to Caroli's disease, primary sclerosing cholangitis, choledochal cyst, progressive familial intrahepatic cholestasis, biliary atresia, biliary hypoplasia, chronic hepatitis B +/- D, autoimmune hepatitis, drug induced liver injury, acute liver failure, Alpha 1 Anti-Trypsin, Wilson's disease, hemochromatosis, cystic fibrosis, urea-cycle defects, glycogen storage disease, metabolic disorders, hepatocellular carcinoma (HCC), fibrolamellar HCC, hepatic hemangioendothelioma, noncarcinoid pancreatic neuro-endocrine tumors confined to the liver, Budd-Chiari Syndrome, giant hepatic hemangioma, trauma, and hepatic adenoma.



**Cynthia (Cyndy) Collins, MSN, FNP-BC** is a Nurse Practitioner on the Liver Transplant Team at UC San Diego Health. She earned her master's degree/NP from University of San Diego. She has over 30 years of experience as a Registered Nurse and over 10 years of experience as a Nurse Practitioner.

She joined the Liver Transplant team at UC San Diego Health in 2008. In addition to being a pre-liver transplant Nurse Practitioner, her experience includes management of post-liver transplant in adults, pre- and post-kidney transplant in pediatric and adult patients. Additionally, she has many years of experience in management including regional director for dialysis centers in Southern California. Most recently she participated in the 12th Annual Evidence Based Practice Institute: Consortium for Nursing Excellence in San Diego on a project geared to raise immunization rates in patients awaiting liver transplantation. She loves to travel to foreign countries, walks on the beach, hiking, Soul Cycle and Orange Theory.

At UC San Diego Health, the transplant evaluation process begins with an initial clinic visit in the outpatient transplant clinic located at Chancellor Park in La Jolla. At the initial visit, the patient meets the entire transplant team which includes the transplant nurse coordinator, surgeon, transplant hepatologist, transplant social worker and transplant registered dietitian. All patients considered for liver transplant must have a caregiver and a solid post transplant care plan. A caregiver may be a friend or family member that is invested in caring for the patient before and after transplant. Caregivers commit to attending clinic appointments with the patient, are aware of changes in medical management, ensure the patient is taking their medication correctly and safely, and is the transplant team's frontline in verbalizing any changes in the patient status while at home. Other eligibility criteria include: adequate insurance coverage, the patient is free of concomitant end organ disease that would portend poor post-operative prognosis including significant cardiovascular, pulmonary, neurologic or hematologic diagnosis except in cases where good outcomes can be obtained from multiorgan transplant, and meets psychosocial requirements.

Once the evaluation is complete, the patient is presented to the selection committee which consists of a multidisciplinary team. Together the team reaches a decision regarding a patient's transplant candidacy. Once a patient is approved for transplant and the team has obtained financial authorization, they are added to the UNOS (United Network Organ Sharing) waitlist. Once listed, the patient is medically managed by the pre-transplant nurse practitioner and hepatologist for complications associated with end stage liver disease (ESLD), such as – hepatic encephalopathy (HE), ascites, esophageal varices (EV) and hepatocellular carcinoma (HCC). The frequency of appointments in the outpatient liver transplant clinic is determined by the severity of the patient's illness. Patients with liver disease often times are required to

make lifestyle modifications such as following a low sodium diet and increasing dietary protein. The pre-transplant nurse practitioner and dietician work together to optimize the patient's nutritional intake during this entire process. Nutrition is a very important component in preparing a patient for liver transplant. Patients waiting for a liver transplant are encouraged to remain as physically active as possible.

Patients are generally referred for liver transplant evaluation when they have a MELD (Model of End Stage Liver Disease) of 15 or greater. The MELD score is calculated using the patient's sodium, total bilirubin, creatinine and INR level. The MELD score ranges from 6–40 and is used to rank the degree of illness. The higher the MELD score, the sicker the patient. MELD scores accurately predict 3 month mortality for most patients with cirrhosis, although it may underestimate the risks of mortality and waiting list dropout for patients with Hepatocellular Carcinoma (HCC) and other disease processes. A subset of patients may be eligible for MELD exception points. MELD exception points may be given to patients with treatment responsive Hepatocellular Carcinoma (HCC), Hepatopulmonary Syndrome (HPS), metabolic diseases resulting in end stage organ disease, Polycystic Kidney Disease (PKD) and other disease processes. MELD exception points can boost a patient's MELD score allowing them to be more competitive on the waitlist with a higher MELD score.

Organs are allocated to the patients with the highest MELD score on the waitlist.

Other factors that affect organ allocation include, blood type, body size, donor's age, proximity to donor hospital and the supply and demand of livers in the region the patient is listed in. It is difficult to predict how long a patient may have to wait for a transplant. Blood group O is the most common type of blood group and patient's with blood type O may have a longer wait time than other blood types. Transplant nurse coordinators are on a weekly call rotation taking liver donor



**Donovan Benedicto, BScN, RN**

is a clinical Nurse 2 at UC San Diego Health. He earned his BScN at McMaster University in Canada. He has been a Registered Nurse for 23 years. He has previously worked in adult/child and Emergency Room psychiatric nursing, Trauma RN, telemetry/IMU. His past accomplishments include: Bayview Employee of the Year 2001, Certificate of Excellency in Direct Practice 2001 from the Psychiatric Nurses Association, Nursing Excellence Awards UCSD 2009 and 2013, 11W Compassionate Care Recipient Award 2014, Preceptor Recognition from Azusa University 2016, and Father of the Year (in the eyes of his wife Alicia, and two young daughters Kaia and Malaea).

and patient calls 24 hours a day, 7 days a week. The nurse transplant coordinator screens all liver offers and reviews potential donors and recipients with the surgeon. Once an organ is accepted, the transplant nurse coordinator, ensures that all is coordinated for the transplant.

This responsibility involves notifying all departments and personnel who will be involved in the transplant, including coordinating ground or air transport for the surgical team and organ.

Given the organ shortage, patients listed for liver transplant are given an option to accept Hepatitis C (HCV) organs. HCV infection is curable with a short course of medications. Utilization of HCV-positive donors can increase the supply of high-quality grafts and subsequently decrease patient's time on the waiting list. During the pre-evaluation phase, potential transplant recipients are informed of the benefits and potential risks of accepting Hepatitis C organs and are given an option to consent for HCV organs.

Additionally, potential transplant recipients are given the option of accepting PHS Increased Risk organ (PHS IR). This designation identifies donors at increased risk of transmitting Hepatitis B (HBV), Hepatitis C (HCV) and HIV (Human Immunodeficiency Virus) base on donor characteristics that could place the potential recipient at increased risk of disease transmission. PHS organs are viable and of high quality often coming from young and otherwise healthy donors. Post-transplant graft and patient survival with increased risk organs is equal to or better than that with non-increased risk organs (Understanding HIV HBV HCV risks from increased risk donors, 2017). It is estimated that the risk of disease transmission is ~ 1/1000. The benefit to the patient of accepting a PHS organ is receiving a high quality organ, decreasing time on the waitlist and decreasing waitlist mortality.

Living liver donation is another option for listed liver patients with a lower, stable MELD score to avoid the longer wait time. Individuals that are generally 18-55 years old, with overall good physical and mental

health, not being pressured, coerced or receiving financial incentive to donate may sign up to be a living donor for a family or friend listed on the liver waitlist. A separate evaluation process takes place for living donors.

Patients awaiting a transplant understand the unspoken language of cirrhosis – the fear of the next complication, developing liver cancer, or becoming too ill to receive a transplant, is forever on their minds. It is common practice for nurse transplant coordinators to remind patients, “don't forget to have your bag packed and your phone charged and ready.” Patients anxiously await that one special call – the call with the gift of life on the other end. A tidal wave of emotions is now let loose in the patient's mind, so much so that patients frequently need direct instructions, often repeated several times. Due to this overwhelming process, the patient and caregiver rely heavily on the nurse transplant coordinator as their guide, as they are told to come to the hospital for what is to be their second chance at life.

The post-operative phase is a complex and emotional time in a patient's life. After the surgery, patients begin their second journey trying to process what they have gone through and what had to happen in order to receive a new liver. The transplant recipient often may grieve and shed tears for the donor family and their loved ones. There is joy, joy that they have survived their transplant, and that their new liver is functioning properly. There is acceptance and determination to work hard to take good care of this new liver they have received. Once the patient has been transplanted, the care transitions from the pre-transplant nurse coordinator to the post-liver transplant nurse coordinator. The post-transplant nurse coordinator role begins immediately after transplant with inpatient discharge teaching, which carries over after discharge with twice weekly multidisciplinary team visits and twice weekly labs in the outpatient setting. The transplant nurse coordinator sees and recognizes the flood of emotions that the newly transplanted patient goes through.



**Joanie Salotti, MSN, AFP, CCTC**

is a nurse practitioner with the liver transplant team. She has been with UC San Diego for 25 years; 18 years with liver transplant and 7 years as a SICU-trauma nurse. Joanie earned her Bachelors of Science in Nursing at the University of Texas Medical Branch and her MSN/NP at the University of San Diego. She is a certified clinical transplant coordinator.

Transplant recipients and their families are anxious to learn what to do, what to expect, and how to live their life after transplant. Commonly, newly transplanted patients fear doing something wrong that could potentially harm their new liver. The fear of taking a medication late or missing a medication can weigh heavily on their minds. The use of steroids is still considered the mainstay of immunosuppression following liver transplantation. Steroids can often times accentuate the emotions a transplant recipient is experiencing.

Transplanted patients will occasionally need to be reminded that their caregiver is not only their family member or friend, but an integral part of the team. The nurse coordinators educate the patient as well as their caregivers about transplant medications and signs/symptoms of rejection and infection. Despite some patients wanting immediate independency, transplant recipients need to be accepting of help from others at this time, as they may have limited understanding of post-liver transplant course and will need an additional support person to help internalize and process all the changes liver transplantation involves. Eventually, the goal is for the transplanted patient to do everything on their own and to live the life they were scared to dream of while waiting for their new liver.

The nurse coordinator's role not only serves as patient educator or support system for both patient and caregiver, the coordinator monitors lab results frequently and vigilantly watches for any signs of possible rejection or infection, which may be reflected in abnormal liver function tests and complete blood counts. The coordinator will also communicate clinical findings with the surgeon, hepatologist, and pharmacist to assess the need for immunosuppressant dose adjustments, and if so, will relay plan with patient and caregiver.

The coordinator encourages and supports the patient from post-op day one and throughout the post-transplant journey. Our experience has shown that the liver transplant recipient is grateful for each new day, sunrise, sunset, and shared moments with family members.

Transplant nurses are there for every phase – to provide the medical care, to answer the ongoing questions, provide reassurance but also provide instruction, guidance and rules. Some important reminders after transplant include: complete alcohol and tobacco abstinence, avoiding over the counter medications and herbal medications, and avoiding excessive acetaminophen use. Additionally, protecting oneself from the sun is very important in the post-transplant.

The liver recipient has embarked on the next great journey of life. Post-transplant patients are reminded that the journey has just begun – “Don't look at your progress day-to-day; rather, week-to-week and then, month -to-month. There will be good days, and there will be days of struggle. But your liver coordinator will always be there.”





Pictured from left to right: Hannah Schumann, RN; Eunice Manzano, NP; Teresa Geisinger, NP; Tina Misel, NP; Amy Honeycutt, RN; Joanie Salotti, NP; Natasha Mooney, RD; Kelly Dobbins, RN; Vanessa Mulsow, LCSW; Cyndy Collins, NP; Donovan Benedicto, RN

## UC San Diego Health's nurse transplant coordinators are

### Pre-liver transplant coordinators:

Joanie Salotti, NP, has worked at UCSD for 25 years and has dedicated 18 of these years to the liver transplant team. Joanie manages the UCSD-Sharp Coronado patients.

Eunice Manzano, NP, has worked at UC San Diego Health for 10 years and has dedicated the past 5 years to working on the liver transplant team.

Cyndy Collins, NP, has worked at UCSD for 13 years and has worked with the transplant team for 10 of those years.

Hannah Schumann, RN and Amy Honeycutt, RN recently joined the pre-transplant team.

### Post-liver transplant coordinators:

Kelly Dobbins, BSN, RN has worked for UC San Diego Health for 14 years and has worked with the transplant team for 8 years.

Teresa Geisinger, NP has worked for UC San Diego Health for 1 year, managing both liver and kidney fresh-post transplant inpatient and outpatient.

Donovan Benedicto, RN has worked with UC San Diego Health for 12 years and has worked with the transplant team for 3 years.

Tina Misel, NP has worked at UC San Diego Health for 3 years and works closely with our long-term post-transplant patients.

# Frailty: Identifying and Aiding the Most Vulnerable

By: Natasha Mooney, RD, CDE

Many patients have a long road to transplant and this road is not always smooth. Along the way, patients may become increasingly decompensated, weak, and depressed. In the midst of this decompensation, a large percentage of patients experience poor appetite, dysgeusia (altered taste sensation), early satiety, and fluid accumulation resulting in unintentional weight loss, sarcopenia (loss of muscle mass and strength), and frailty. Frailty is defined as the distinct clinical state of increased vulnerability to health stressors and decreased physiologic reserve that leads to adverse health outcomes including disability, short- and long-term institutionalization, and ultimately, death (Exterkate, L; et al.).

Frailty portends worse outcomes for patients with end-stage organ disease and patients undergoing solid organ transplantation. It has been identified to be the best predictor of 30-day postoperative complications independent of age. Frailty has

also been associated with increase mortality on the transplant waitlist and post-transplant, significantly increased length of stay and early hospital readmission death (Exterkate, L; et al.).

The importance of frailty assessment during the transplant evaluation has grown over the recent years as frailty has proven to be a predictor of mortality. Assessing for frailty in transplant candidates allows for early identification of potentially reversible components contributing to frailty. Thus, with lengthened wait times, frailty assessment has become essential.

Currently at UC San Diego, each patient being evaluated for transplantation is assessed for frailty. This assessment is documented and discussed with the transplant team. The patient is then re-evaluated every three months thereafter to monitor for decline, stability, or improvement. The Fried Frailty Test is used in each solid organ transplant program. This frailty assessment uses



**Natasha Mooney, RD, CDE**

is a registered dietitian who has been with the UC San Diego transplant program since 2010. She works primarily in liver transplant, however, she has covered all organ transplants in the outpatient setting. Her goal is to optimize the nutrition status in both pre and post-transplant patients, focusing on malnutrition and frailty. She has been influential in initiating the use of a frailty assessment in the transplant population at UC San Diego.

5 metrics, each with its own range of desired results (Gandolfini, Ilaria; et al.). Those who test outside of the desired range are assigned 1 point per criteria. If a patient is assigned 3 points or more, that patient is classified as frail:

**1. Weight change (>10 lbs or 5% in past year)**

**2. Physical activity (< 60 using Karnofsky Scale)**

**3. Exhaustion (> 3 days per week)**

**4. Grip Strength (Based on BMI category and gender)**

**5. Gait Speed (Based on height and gender)**

The Fried Frailty Test includes both objective and subjective measurements to determine the patient's score. Objective data includes unintentional weight loss, hand grip strength measured using hand dynamometer, and gait speed measured by a timed walk. Subjective data used in this assessment are patient responses to a series of questions regarding exhaustion, as well as activity level/ performance using the Karnofsky scale, a standardized way of measuring a patient's ability to perform various tasks of daily life. Once these series of measurements are complete a score is calculated. The patient is classified as frail if they receive a score of 3 and greater (Gandolfini, Ilaria; et al.).

Once a patient is determined to be frail, a series of goals are set. Optimizing nutrition is at the forefront, along with increasing physical activity. The transplant dietitian meets with the patient to discuss optimizing nutrition by increasing daily protein and calorie intake through supplemental nutrition via oral or enteral feeding. A referral to physical therapy is made to facilitate improvement of muscle function and overall physical activity. If applicable, a referral to Cardiac or Pulmonary Rehabilitation will also be made. The patient is then reassessed in three months to evaluate for improvement.

Having frailty information at time of organ offer is useful in post-transplant rehabilitation and discharge planning. At time of transplantation, if the patient had been determined to be frail, it is strongly recommended that early enteral feeding be initiated within 24 hours of transplant. Enteral feeding should be received to ensure proper nutrition until >75% of nutritional needs are able to be met by oral intake. Patient will also participate in physical therapy during hospitalization and ideally go home with a referral for continued physical therapy at home. Sarcopenia may occur up to one year after transplant; therefore, physical activity and proper nutrition will be essential for recovery. The newly transplanted patient will continue to be followed by the outpatient Transplant Dietitian who will provide guidance in order to bolster their nutritional intake.

Frailty is a growing problem for solid organ transplant programs with longer waitlist times, as longer wait times places these patients at even greater risk. By providing more objective data, frailty assessment has improved risk prediction of waitlist mortality and allowed for targeted intervention and follow-up. Overall, frailty status serves as a compliment in decision-making for transplant eligibility and facilitates discussions with prospective transplant patients.

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# The Role of a Transplant Social Worker

By: Jennifer Hedgecock, LCSW, CCTSW, Holly Hernandez, LCSW, CCTSW, CCSW-MCS, Vanessa Mulsow, LCSW, CCTSW, Kelli Swan-Vranish, LCSW, CCTSW

*“So what exactly do you do?” This is a common question fielded by transplant social workers across the country.*

**T**ransplant Social Worker holds a Master degree in Social Work and often are licensed at the highest level in the state in which they practice. Furthermore, at UC San Diego Health many hold additional credentials specific to transplant.

Solid organ transplant affects much more than the isolated organ(s) that is failing. Patients who require solid organ transplant also face many psychological and social challenges. This is why the Centers for Medicare and Medicaid Services (CMS) require social work to be part of the multidisciplinary transplant team to work with patients and their families throughout all phases of transplant.

## PRE-TRANSPLANT:

When a patient is referred for transplant evaluation, the Transplant Social Worker is tasked with not only looking at a patient’s medical condition but obtaining important information about the psychological and social factors in a patient’s life. This includes completing a biopsychosocial assessment, providing education to patients and families, identifying risk and protective factors and providing resources. Some of the key areas evaluated by Transplant Social workers include:

caregiver support, local housing plan, access to transportation, mental health history, substance use history, medical treatment adherence history, and understanding of transplant education, patient’s goals, wishes, and desire for transplant.

Here at UC San Diego Health, the Transplant Social Workers use a series of tools including the Patient Health Questionnaire (PHQ), Generalized Anxiety Disorder (GAD), Drug Abuse Screening Tool (DAST), Alcohol Use Disorder Tool (AUDIT) and the Stanford



**Jennifer Hedgecock, LCSW, CCTSW** is a clinical transplant social worker with the Abdominal Organ transplant team at UC San Diego Health. She works in both the inpatient and outpatient settings with kidney and liver transplant patients, as well as living donors. She earned her bachelor’s degree at SDSU and her Master’s degree at USC. She has worked in the medical social work field for over 10 years and got her Certification in Clinical Transplant Social Work earlier this year.



**Kelli Swan-Vranish, LCSW, CCTSW** is the Clinical Social Work Supervisor for Solid Organ Transplant at UC San Diego Health. She has been working with the transplant program since 2004. She earned her bachelor’s degree in psychology from Drake University and her Master of Social Work from San Diego State University. Additionally she has held her Certified Clinical Transplant Social Worker Credential since 2013.

Integrated Psychosocial Assessment for Transplant Recipients (SIPAT). The SIPAT was developed by Dr. Jose Maldonado and his team at Stanford University in an effort to eliminate selection bias and standardize the psychosocial evaluation process (Sher, Maldonado 2019)<sup>1</sup>.

After completing the assessment and obtaining this important information, the Transplant Social Worker attempts to connect patients with resources needed to overcome any modifiable risk factors. They meet with the patient regularly throughout workup to assess progress



**Holly Hernandez, LCSW, CCTSW, CCSW-MCS**

graduated with her Master of Social Work from Portland State University in 2009. Holly is presently a VAD and heart transplant social worker at UC San Diego. She has worked with VAD patients for nearly eight years, and with heart transplant patients for nearly five years. Holly is inspired daily by the strength of the VAD and heart transplant patients she works with.



**Vanessa Mulsow, MSW, LCSW**

graduated with her Bachelors in Psychology from the University of California, Santa Cruz and her Masters in Social Work from San Diego State University. She has worked at UC San Diego Health with the transplant team since 2016.

and assist with overcoming barriers to transplantation.

Once a patient's medical and psychosocial work-up is complete, the patient is presented at selection committee, at which the Transplant Social Worker will discuss their SIPAT score and provide a summary of the psychosocial assessment. At committee, the Transplant Social Workers help the team gain a deeper understanding of the stability of a patient's support system, barriers that may interfere with a successful outcome, patient ambivalence and right to self-determination so that these factors can be taken into consideration.

The team, which includes surgeons, physicians, dieticians, nursing coordinators, and social workers, will then make a decision on candidacy. The possible outcomes are acceptance for transplant listing, deferral for listing until medical and/or psychosocial issues are satisfactorily addressed, or decline for listing.

### **IN-PATIENT AND DURING TRANSPLANT ADMISSION:**

Transplant Social Workers round with the transplant team and consult on pre-, newly transplanted and post-transplant patients. It is not uncommon for patients with solid organ failure to have multiple admissions with prolonged hospitalizations. At each step along the way, the Transplant Social Worker will assess patient and family's readiness and willingness for transplant. Often while patients are awaiting an organ offer, they become too ill for transplant. When this happens, the Transplant Social Worker will meet with the patient, their support, and members of the treatment team to assess the patient's definition of quality of life and to help transition goals from aggressive treatment to ensuring comfort and dignity for the patient. The Transplant Social Worker assists in facilitating goals of care discussions and should always be present at these meetings.

For patients successfully transplanted, Transplant Social Workers continue to work with the

patient and their support to confirm resources are in place so at the time of discharge the patient has the best chance for success.

### **POST-TRANSPLANT:**

The Transplant Social Worker will continue to meet with patients in the outpatient clinic following transplant. Patients attend clinic multiple times per week for several months following surgery, depending on medical need. Transplant Social Workers will continue to assess social and emotional health and provide resources as needed for the life of the patient.

In summary, a Transplant Social Worker is providing constant support to patients and families through all phases of transplant. There are numerous emotional, behavioral and psychological aspects that accompany failing health and it is the Transplant Social Workers job to provide emotional support, referrals to community agencies, empathy, and understanding through this difficult time. They are the constant thread throughout all transplant phases with goals of promoting emotional health and well-being so that they can be successful pre and post transplantation (STSW, 2019)<sup>2</sup>

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# A Unique Consent

By: Kathleen Cawelti BSN, RN, CCTC

In healthcare, there are many quality metrics that are assessed: infection, bleeding, and length of stay being a few examples. Transplant centers are heavily regulated by the Centers for Medicare and Medicaid Services (CMS) and the United Network for Organ Sharing (UNOS) with specific transplant metrics. Transplant volumes, average wait time for transplant, and survival statistics are some of the most significant factors that are used to gauge the quality of the program. In fact, it is a requirement to inform the public about some of those metrics as a matter of providing informed consent for patients who are considering a transplant at our institution. We are required to provide all solid organ transplant prospective patients specific information prior to beginning the transplant evaluation process to allow them to make an informed decision about their care. This represents a positive shift in the field of healthcare overall as it helps patients to be more engaged with their healthcare decisions. Being more transparent with our outcomes, hopefully leads to a better educated and more involved patient. Some people believe this culture is due, in part, to consumerism, the internet, and the ability to “shop around” for different of goods and services. Whatever the origin may be, it is required that we report our quality measures and outcomes to our patients as they seek care.

The transparency concept becomes evident in the process of

informed consent for transplant. Transplant centers are required to obtain permission before initiating any part of a transplant work-up on a patient. The goal being that patients know their rights, their options, and the potential risks and benefits of a transplant before any testing or evaluation would even begin. As such, the first step in the transplant process is for our transplant nurses to obtain a signed acknowledgement and informed consent for transplant candidates. Although routinely signed by patients, in some urgent cases, the informed consent is done with family members and then eventually with the patient, if and when possible.

There are multiple elements that are required to be included in the consent for all the solid organ types; some of these include the surgical procedure, the options for treatment of their end-organ disease, potential medical or surgical risks, and the right to refuse transplant.

One section that is required to be included with documentation specifically includes the one year post transplant survival rates for both the patient and the organ. This is a nationwide standard that patients can use to evaluate our ability to perform the surgery and verify our success rate. This detailed information is tracked by the Organ Procurement and Transplantation Network (OPTN) and made available to the public via the online national database the Scientific Registry of Transplant Recipients (<https://www.srtr.org>)

## **Kathleen Cawelti BSN, RN, CCTC**

is a relatively new to UC San Diego Health, but has worked in the field of transplant for over 20 years. Previously, she worked with kidney and pancreas transplant patients and is now the manager of the UCSD Heart and Lung Transplant and VAD programs. She finds transplant an amazing journey and enjoys the fact that we are able to give patients hope in some of their most challenging times.

The SRTR reports have specific transplantation details that are available to the public, including: age of patients that are added to the waiting list for a kidney transplant or how many women were transplanted with hearts in the past year. This website provides a wide variety of characteristics for patients that UC San Diego has added to waitlists and transplanted over specified periods of time.

For the purpose of informing our patients, we are specifically required to report one year survival for organs and patients, which is a pretty amazing concept. For example, when a patient is admitted for an appendectomy, they can ask about their surgeon's success rate, the hospital's overall quality data and metrics. However, the onus is on the patient to seek out that information. For transplants, we have to make sure the patient is given that information upfront and has the opportunity to obtain more information if they would like it. We give them the actual survival of our patients at one year post transplant, expected survival based on the characteristics (disease, age, demographics) of our waitlisted patients, as well as the national survival average. The SRTR attempts to adjust for the risk level of transplants by accounting for many characteristics of the transplant recipients and the donors. Our center is given credit for accepting higher age recipients and those with higher surgical risk profiles, such as those with diabetes, and /or peripheral vascular disease.

As an example, patients may learn that UCSD's actual one year organ survival rate is 98%; our expected rate could be 97%, and the national average would be 96.5%. In this scenario, our actual survival is above both our expected and the national average survival rate, which may instill further confidence in selecting our transplant program. These numbers are updated, calculated and reported twice a year. Once they are published, we are required to inform all of our listed patients of each respective program and all new patients who are entering our programs for evaluation. This guarantees that patients are always kept apprised of our center's survival rates.

Patients also have the option of searching the SRTR website and researching other transplant centers to easily compare data in the event that they are considering multiple transplant centers.

Potential living donors for kidney and liver have additional specific criteria for informed consent. A living donor consent includes the recipient's medical alternatives to transplant; this is to ensure that the donor knows if their intended recipient has options outside of transplant. The living donor consent also contains the SRTR statistics so they are cognizant of the success of the transplant center. The living donor consent also addresses potential medical or psychosocial risks and that future health problems may arise due to the donation. All of these criteria and elements

are to confirm that our patients are informed when they make the decision to proceed with a transplant evaluation.

As a multi organ transplant center, UCSD has a huge responsibility to our community and to our patients to provide accessible and high quality care. The fascinating thing about transplant is that the actual transplant surgery is not everything. The medicine is not everything. The dieticians, social workers, pharmacists, nurses, administrative assistants, respiratory therapists, insurance councilors, data analysts, regulatory teams, and numerous other transplant team members and hospital staff are not everything. It's everyone. Every single person matters. Every episode of care matters. Every lab draw, every detail. We rely on each other to make positive outcomes for our patients. It truly is all about the whole team working together to create the patient's success.

# UC San Diego Abdominal Transplant: Living Donor Program

By: Michael G. Chua, MSN, RN, Olivia Stoddart, BSN, RN

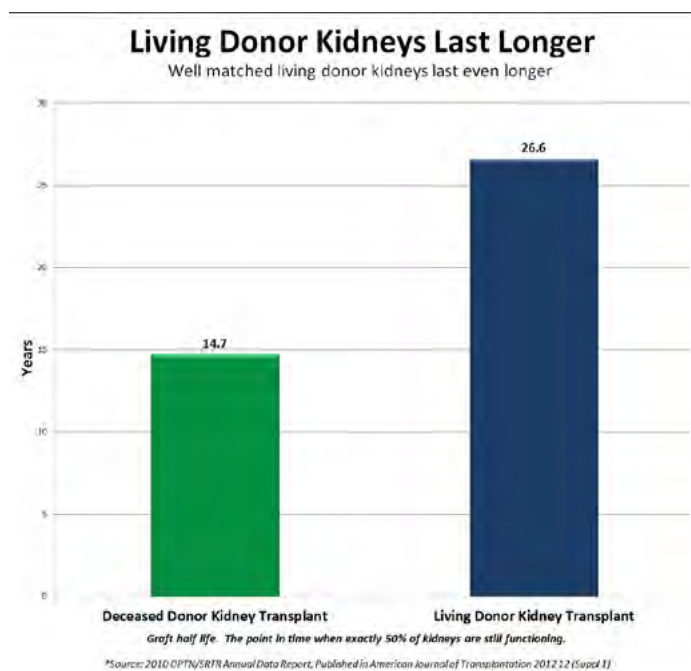
The UC San Diego Health (UCSD) living donor program is a comprehensive multidisciplinary team that supports donors and recipients through the process of liver and kidney living donor transplants. At UCSD, we evaluate all potential living donors for our kidney and liver transplant candidates on the waitlist. We also evaluate living donors and coordinate transplants between UCSD and Rady Children's Hospital. UCSD is partnered with the National Kidney Registry (NKR) to offer our incompatible donors and recipient pairs another option - that of a living donor kidney transplant and donation.

## WHY LIVING DONATION?

Living donation is the best option for those in need of a kidney transplant. Living donor kidneys work faster and last longer than deceased donor kidneys.



**Michael G. Chua, MSN, RN** is a has been a Living Donor Coordinator since 2013 and an RN for the last 15-16 years. He's been at UC San Diego since 1998, beginning his career as a Respiratory Therapist working in the Neonatal ICU. He obtained his RN license in 2004, BSN in 2010, and MSN in 2012. Before coming to transplant, Michael was a nurse in TICU, Assistant Nurse Manager of 2E, and Nurse Manager of IPCE/ TB Control. He enjoys travelling to new places to try new foods with his wife and 3 boys.





The wait times in Southern California are very long to receive a deceased donor kidney. Some people can wait up to 10 years before they receive a transplant. After being on dialysis for a long period, it is possible that those waiting, might not even be a candidate for transplant by the time they get to the top of the list because of all the comorbidities that go along with being on chronic dialysis.

These wait times are getting longer each year because the need for kidney transplant is steadily rising, but the number of deceased donors has remained about the same.

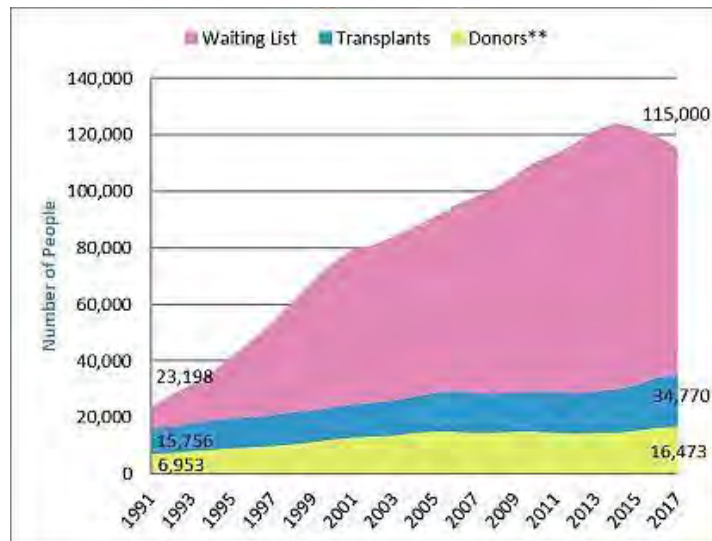
#### Estimated wait times for kidney transplant in San Diego

Blood type O	8-10 years
Blood type A	6-7 years
Blood type B	7-9 years
Blood type AB	3-4 years



#### Olivia Stoddart, BSN, RN

has had a love for transplant ever since donating her kidney to her brother in 2000. It was this experience that motivated her to begin her career in nursing. She previously worked as an IMU nurse at UC San Diego Hillcrest, then went on to work as an organ procurement coordinator with Lifesharing. She now enjoys being a living donor coordinator with the kidney transplant team at UC San Diego. In her free time she enjoys travelling and chasing her two boys around.



## HERE IS HOW LIVING DONORS CAN HELP.

### Types of donation

There is no physical benefit to donating your liver or kidney. Most living donors do it for the emotional benefit of helping someone in need. There are different types of donation: directed donors, non-directed donors, and paired exchange donors.

### Directed Donation

Directed donors know a friend or family member who is in need of a transplant. They undergo compatibility testing to make sure they are a match, and once approved, can directly donate to their loved one. Through our partnership with the National Kidney Registry and our Donor Care Network Center of Excellence status, we are able to offer remote donation as an option to our compatible donor and recipient pairs. This makes it easier for our donors who live out of state to perform their entire workup and have their donor nephrectomy close to home. The process is that the donor's kidney is shipped and tracked, via GPS, to their intended recipient at UCSD.

## STORY FROM OUR FAVORITE PATIENT AND FORMER CO-WORKER

# My Left Kidney

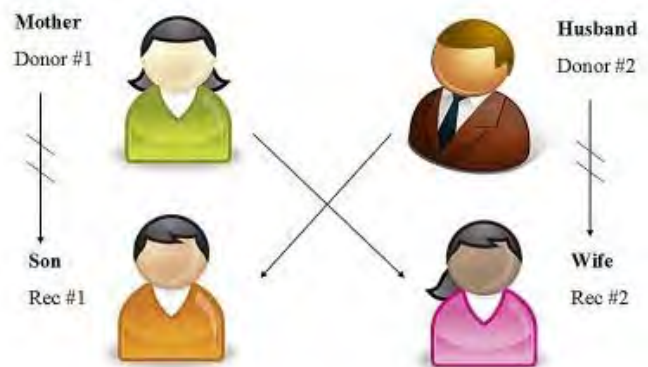
I donated a kidney to my brother Christian on December 5, 2018. I have worked in the Kidney field at UCSD for the past 20 years, 7 years in Dialysis and 13 in Kidney Transplant so my decision to donate came very easy. I knew first hand that a kidney transplant was a better treatment option for someone with kidney disease and I was going to be the first to step forward. The process was very simple and my brother was able to avoid dialysis and continue on with his life. The recovery for me was a little slow and I felt fatigue for a few months after donation. Today I feel like I never had surgery. I returned to work 8 weeks after donation and I was able to share my experience firsthand to the patients I served. Although the decision to donate is not for everyone, I now share my experience and hopefully help patients make an informed decision about donating. I am happy I was able to make a difference in my brother's quality of life. It was definitely a rewarding experience and I would do it all over again if given the opportunity and had more kidneys.

**-Alejandra Munoz**



## Paired Exchange Donation

Paired exchange donors are those that are not compatible with their loved one in need but still want to help. In these cases, donors are entered into the paired exchange system. Once registered, they will donate on behalf of their recipient to someone for whom they are compatible. In exchange, their loved one will receive a kidney on the same day from another living donor that is compatible with them. The National Kidney Registry (NKR) offers this. By removing the boundaries of having an incompatible match, this program facilitates more living donor transplants to occur. Coordinating this event takes time and commitment from the participating centers.

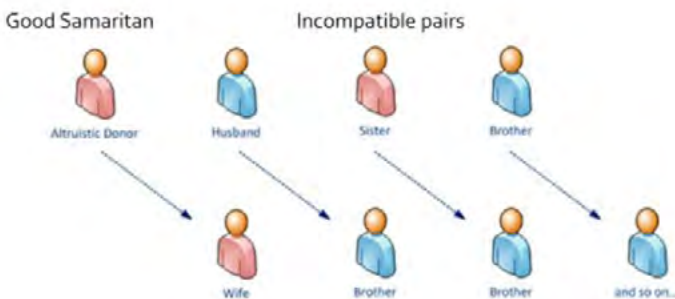


## Non-Directed Donation

Non-directed donors (NDD) are good Samaritans who want to help but don't know anyone who is in need of a transplant. These donors are willing to donate to anyone. At UCSD, we enter NDD into the paired exchange pool in NKR to help maximize their gift of donation. The NDD are matched with a compatible recipient that then allows the recipient's paired donor to donate to the next incompatible recipient/ donor pair. NDD's will not find out who their compatible recipient is unless both parties agree to meet after the transplant is complete.

In February 2019, UCSD was one of the 12 pilot centers to offer the Family Voucher Program from NKR for NDD. In July 2019, NKR's Family Voucher program is offered to all NKR participating centers. The intent of the Family Voucher program is to protect the donor's loved ones after donation. In the event that the donor's family member needs a kidney transplant, they would be able to receive a living donor kidney from the National Kidney Registry.

## National Kidney Registry Non-Directed Donor Chain



To find out more about the Family Voucher Program, please check out their website: <https://www.kidneyregistry.org/info/voucher-program>

## HOW THE PROCESS STARTS

<https://ucsdlivingdonor.org/>

All interested living donors inquire through our website. They will be asked to submit their information and medical history. They will then go through medical and psychosocial phone screening with the nurse coordinator and the liver donor advocate prior to moving forward with the evaluation.

## What We Do

Thorough living donor education is provided one-on-one and is offered throughout their evaluation. To help continue to raise awareness about living donation, our Living Donor Team provides quarterly living donor

seminars for our patients to attend. Our speakers include our Transplant Medical Director, Dr. Shah; Living Donor Surgical Director, Dr. Berumen; and Living Donor Coordinators, Michael G. Chua and Olivia Stoddart. Joining our speakers at the living donor seminar is a special group of volunteer living donors and recipients who share their own personal experience with others to provide our patients hope.

## What to expect with the evaluation

Living donation is completely voluntary and elective for those considering living donation. Living donors have a right to withdraw from the process at any point during their evaluation. Their decision to move forward with or to stop an evaluation remains completely confidential. Our team ensure their decision is kept private and protected. The evaluation starts with blood and urine testing. Donors will have their blood drawn to test for blood type, tissue typing, general overall health, and infectious diseases that may be transmitted through transplant. For potential kidney donors, they will complete a 24 hour urine collection to evaluate kidney function.

The evaluation is done over the course of 2 full days. Donors are required to have the following tests: 1) a chest x-ray to assess pulmonary health, 2) cardiac testing including an Echocardiogram, Electrocardiogram and/or a cardiac stress test to visualize the structure, function and health of their heart, 3) an ultrasound, CT scan or magnetic resonance imaging (MRI) of the abdomen and/or pelvis to determine the surgical suitability of the organ for donation.

The Living Donor Team will then present the potential donors to a selection committee where they are evaluated by a multidisciplinary team including the nephrologists for kidney donors, hepatologists for liver donors, transplant/ donor surgeons, social workers, dieticians, and living donor advocates. The team will thoroughly review the donor from a medical, surgical, and psychosocial aspect to see if it is safe to proceed with donation.

If a potential donor is approved to donate, our team will coordinate scheduling surgery for both the donor and the transplant recipient. Living donor transplant can be scheduled around the availability of the donor and readiness of the transplant recipient.

## Post Donation

Donors generally do very well overall after donation. They spend an average of 2 nights in the hospital with a total recovery time of about 6 weeks.

All donors are followed for two years after donation. We see them at 1 week, 6 weeks, 6 months, 1 year, and 2 years after donation. We want to ensure that our donors are doing well post-operatively and closely monitor their labs, blood pressure, and surgical incisions. After two years, donors are asked to follow up with their PCP annually to make sure their remaining kidney is doing well.



**From LEFT to RIGHT:**

Kidney Transplant Social Worker - Nina Sullivan, Living Donor Coordinators - Olivia Stoddart and Michael G. Chua (back), Kidney Transplant Nephrologist and Medical Director - Dr. Mita Shah (front), Independent Living Donor Advocate - Leslie Fijolek, Surgical Director for Living Kidney Donor Program - Dr. Jennifer Berumen, Chief of the Division of Transplantation and

Hepatobiliary Surgery and Vice-Chair for Quality and Safety in the Department of Surgery - Dr. Kristin Mekeel, Clinical Manager, Kidney Transplant & Living Donor Programs - Jason Suade, Kidney Transplant Coordinator - Suzanne Reed, Former Living Donor Coordinator Assistant - Alejandra Munoz (back), Post Kidney Transplant Coordinator Assistant - Jackie Miranda

**Not pictured:**

Living Donor Coordinator Assistant - Juana Morales, Transplant Dietitian - Natasha Mooney, Surgical Director for Living Liver Donor Program - Dr. Schnickel, Liver Transplant Hepatologist - Dr. Ajmera, Liver Transplant Social Worker - Vanessa Mulsow, Post Living Donation Nurse Practitioner - Alexandria Chavez

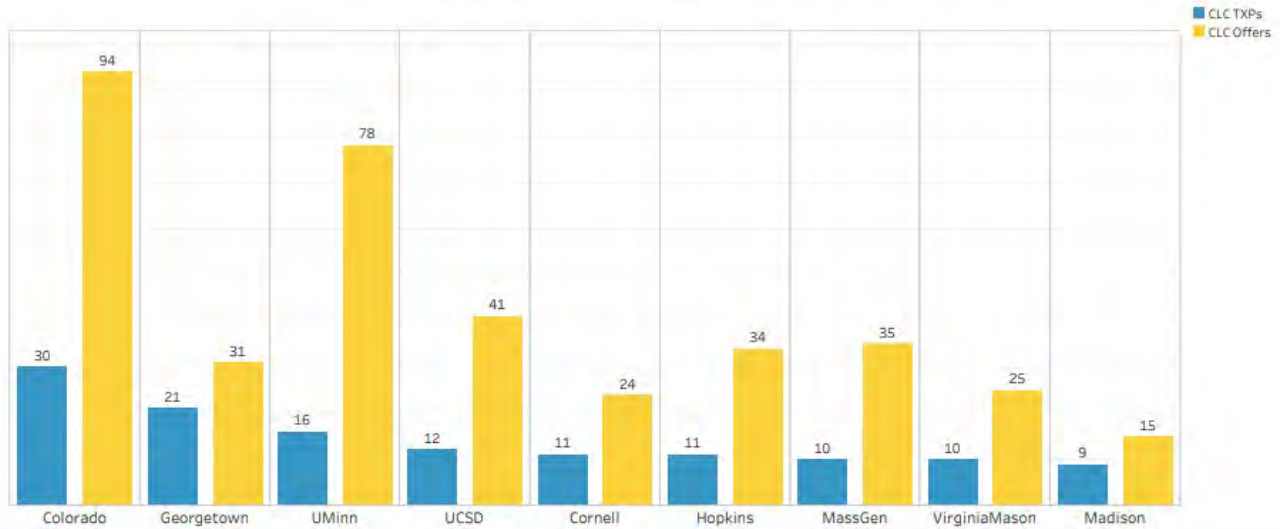
## LIVING DONOR PROGRAM TEAM AND RECOGNITION

### Number of Living Donor Transplants

Year	UCSD Live Kidney	UCSD Live Liver	Rady Live Kidney	Rady Live Liver	TOTAL Living Donor Transplants
2013	20	0	0	0	20
2014	14	1	2	0	17
2015	18	4	2	1	25
2016	18	2	4	0	24
2017	25	1	1	0	27
2018	37	0	7	0	44
2019	47	0	5	0	52

## Top Center Liquidity Contributors

CLC Driven Matches 10/2018 – 09/2019



The Center Liquidity Contribution (“CLC”) program scores Member Center based on their contribution to the pool liquidity (i.e. NDDs and pairs entered) and the

“payback” of the center’s contribution (hard to match pairs matched & transplanted) in the form of match offers. Top scoring CLC centers are given priority.

### OLIVIA STODDART: LIVING DONOR AND LIVING DONOR COORDINATOR

## Two Lives Changed

Olivia Stoddart couldn’t wait to turn 18 - the age to get tested to see if she was a match for her brother battling end-stage kidney failure. “My brother is my best friend. The day I got the call that I was a match was one of the best of our lives.” That was 19 years ago. Her brother now lives a full life as a husband and father. The experience was life-changing for Olivia as well. It sparked a passion in her to study nursing, and led her to become a living donor transplant coordinator here at UC San Diego Health. “I love my job so much because I connect on a personal level with our patients. I know the physical challenges and emotions that come with giving and receiving the most precious gift.” Learn more about living kidney donation at <https://medschool.ucsd.edu/som/surgery/news-events/articles/Pages/Changing-Lives-Through-Living-Donor-Kidney-Transplant.aspx>



# Liver Transplantation for Alcoholic Hepatitis: What makes them a candidate?

By: Eunice Ong Manzano, MSN, FNP-BC and Vanessa Mulsow, MSW, LCSW

Organs are precious gifts from the donor and donor's family. Due to the limited availability of organs, the Organ Procurement and Transplantation Network (OPTN) stresses the balance of justice and medical utility when determining who to list for transplant. The decision of who will be a candidate is in the hands of the patient, the patient's family, and the multidisciplinary team. Every patient that is in need of a liver transplant is thoughtfully considered, including patients with decompensated acute alcoholic hepatitis.

Historically, a six-month period of abstinence was required prior to undergoing liver transplantation. Previous literature has suggested that these patients had lower recidivism rates due to being in partial remission from their alcohol use disorder. This waiting period would also allow for sufficient time to address alcohol dependence and for the patient to demonstrate commitment to treatment. Medically, it could also allow for sufficient clinical improvement to occur.

There is a subset of patients with alcoholic liver disease that can present with severe acute alcoholic hepatitis and due to the severity of their illness, they do not have

time to meet the abstinent and treatment requirements outlined by many centers. These patients are characterized by acute onset of jaundice, ascites, coagulopathy, and often hepatic encephalopathy and renal dysfunction. The providers use the Maddrey's Discriminant Function which evaluates the severity and prognosis in alcohol hepatitis patients and the benefit of using steroid therapy. Patients with a Maddrey's Discriminant Function value of greater than 32 have a 30-day mortality of 30-50%.<sup>1</sup> Liver transplantation has been shown to be an effective therapy for select patients with severe alcoholic hepatitis who do not respond to medical therapy.



**Eunice (Ong) Manzano, MSN, FNP-C, PNP**

is a Nurse Practitioner on the Liver Transplant Team at UC San Diego Health. She earned her MSN/NP from the University of San Diego. She has worked with UC San Diego for 10 years, 5 of which were dedicated to the liver transplant program. She received Rookie of the Year 2009 and Nurse of the Year 2012 for her PCU department under the management of Dorothy Macavinta and Beverly Kress. She is also active in the Filipino American Community as the Co-President of the San Diego Fil-Am Youth Foundation and serves as one of the Board of Directors for the Fil-Am Humanitarian Foundation. She enjoys traveling with her husband Renato (Ren), and two young children Erin (3y) and Ethan (1y).



**Vanessa Mulsow, MSW, LCSW** graduated with her Bachelors in Psychology from the University of California, Santa Cruz and her Masters in Social Work from San Diego State University. She has worked at UC San Diego Health with the transplant team since 2016.

When these patients are admitted to the hospital, the liver transplant team will determine if they meet candidacy by performing a medical, surgical, and psychosocial evaluation.

Recently, data in the literature has suggested that six months of abstinence alone is in itself a predictor of relapse post-transplant and that patients who have less sobriety but strong protective factors present should be considered for transplant.<sup>2</sup> Based on the new data, UCSD has developed a Decompensated Acute or Chronic Alcoholic Liver Disease Policy to identify patients who may be good candidates for transplant but that are too ill to survive the six-month period of abstinence and participate in treatment prior to transplantation.

The psychosocial assessment is a large part of determining candidacy in these patients. The team of liver transplant social workers at UCSD are comprised of Licensed Clinical Social Workers (LCSW) with training in substance abuse, palliative care, mental health treatment and transplantation. The LCSW assigned will complete a psychosocial assessment with the patient and

family and typically meet with them several times while they are admitted to the hospital and for several hours to assess, educate and support the patient.

Factors of the psychosocial assessment that are emphasized for these patients are as follows: 1) Does the patient have appropriate insight into his/her condition and takes responsibility for their drinking? 2) Are they honest and forthcoming with information and do they verbalize an understanding of how alcohol has contributed to their health decline? 3) Do they verbalize a commitment to long-term alcohol abstinence and agree to participate in an alcohol abstinence program after liver transplantation? 4) Do they have appropriate social support to assist before and after liver transplantation and can that support person drive them to appointments four times per week, assist with medication management, activities of daily living and provide 24/7 care for 6-12 weeks post-surgery? 5) Does their family support sobriety and has alcohol been removed from the home? 6) Is the support system committed to setting good boundaries with patients to support sobriety and rehabilitation adherence?

There are also certain psychosocial contraindications to liver transplant listing under this protocol: 1) documented evidence that the patient continued drinking alcohol despite being advised by a medical provider to stop after a diagnosis of liver disease; 2) presence of a severe untreated psychiatric disorder that would negatively impact long-term outcomes; and 3) the presence of 2 or more of the following negative predictors: more than one DUI or other legal problem associated with drinking within the last two years, having failed an alcohol rehabilitation program, and presence of substance abuse other than alcohol.

After the evaluations by the team has been completed the patient will be discussed at the liver selection committee where the information will be presented to the

multidisciplinary team (comprised of the surgeons, hepatologists, transplant coordinators, social workers, registered dietician, financial coordinator, and administrative assistants) and a decision will be made to list or decline.

The team is very aware that these patients are at high risk for relapse post-transplant and require close follow-up. In order to help ameliorate this risk, the LCSW meets with the patient after transplant on a weekly basis for several months to ensure they are connected with the appropriate resources such as therapy, recovery support groups or an intensive outpatient program. They also undergo frequent alcohol testing. There is contact with the family to ensure they too are supported and connect with resources such as alcoholics anonymous (Al-Anon) and/or psychotherapy so that they can learn how to be supportive.

As this is a new protocol, the team is collecting data on the outcomes of this subgroup of patients to see if recidivism and graft function are similar to those with longer periods of sobriety and to see what areas of the protocol are in need of adaptation. As outcome data is collected, the protocol will be changed as needed to ensure that we are honoring the balance of justice and medical utility of these precious gifts of life

#### REFERENCES:

1. Maddrey WC, Boitnott JK, Bedine MS, Weber FL, Mezey E, White RI. "Corticosteroid therapy of alcoholic hepatitis". *Gastroenterology*. 1978. 75 (2): 193-9.
2. Mathurin P et al. "Early Liver Transplantation for Severe Alcoholic Hepatitis". *N Engl J Med* 2011; 365:1790-1800.

# Preparing a New Crew: Designing ICU Nurse Abdominal Transplant Education for Today's Demands

By: Francesca Novelli, MSN, RN and Kelsey Desmond, MSN, RN

The 3GH Jacobs Medical/Surgical Intensive Care Unit (3GH ICU) is responsible for caring for the most diverse and varied patient population of all the intensive care units. In 2017, 3GH ICU learned that UC San Diego Health was transitioning the expanding abdominal transplant program from Hillcrest to the new Jacobs Medical Center. This type of population was new to our department; however, the nurses were enthusiastic to learn and provide the highest quality of care to this special transplant community. Teaching and staff development are core values of our system and an integral part of preparing our nurses for this new responsibility. Education and training to prepare for receiving these patients was made a top priority.

The majority of these patients are post-liver transplant, who are often very sick, tenuous patients that require incredibly attentive nursing care as changes in the patient condition can happen rapidly. Due to the significant demands and high acuity of this special patient population, it was determined at the program's inception that, to care for this patient population, nurses would have to successfully complete well-rounded training that included hands-on practice-based learning with equipment, didactic classes, and competency-based orientation at the bedside with another liver transplant-trained nurse preceptor. In advance of the program's move to the La Jolla campus, 3GH staff were asked to sign up for a liver transplant class that was designed and instructed

by transplant surgeons. The surgeon instructors wanted to provide nursing education on what happened in the operating room at time of transplant and what nursing should monitor for after surgery. After completion of the class, the nurse would then sign up to float to Hillcrest Surgical Intensive Care Unit (SICU) to be precepted by a competent SICU nurse on a fresh liver transplant patient as opportunities arose.

Although this required considerable coordination and time, the partnership between SICU and 3GH and its dedicated, proactive nursing staff permitted the successful transition of the abdominal transplant program to the new campus and its eventual incredible growth.

UC San Diego's Liver Transplant program's first year at Jacobs Medical

## **Kelsey Desmond, MSN, RN**

is an Assistant Nurse Manager for 3GH ICU. She has worked for UC San Diego Health since 2016 and been an ICU nurse since 2012. She earned her master's degree in nursing from the University of Maryland-Baltimore and holds a bachelor's degree in journalism from UGA.

Center (2017–2018) saw a successful 34 liver transplants performed and recovered on our unit. Fiscal Year 2018–2019 saw more changes and incredible growth as that number almost doubled, and a record-breaking 4 liver transplant surgeries were accomplished and recovered in a single day!

This increased demand meant 3GH ICU needed many liver-trained nurses. As classes were instructed by transplant surgeons who maintain busy schedules, the limited frequency of classes could not keep up with this markedly increased demand and need for ever-ready liver transplant-competent nurses. 3GH nursing leadership partnered with the liver transplant program to update and reorganize the class to better meet the needs of 3GH nursing staff and



**Francesca Novelli, MSN, RN**

is a Clinical Nurse Educator for 3 GH ICU. She has worked for UC San Diego Health since 2017 and been an ICU nurse since 2008. She earned her master's degree in August of 2018 and starts her Doctorate of Nursing Practice Program in August of 2020.

reflect the changes in what bedside nurses were seeing post-transplant. By making the class nurse-driven, we were able to offer the class quarterly, rather than annually. This allowed the class to be offered more frequently to meet the needs that additional numbers of post-transplant patients created, as well as offer training to newly hired nursing staff, while refreshing knowledge of previously trained nurses. We considered the transplant surgeon presentation an integral part of the class, but wanted to incorporate other members of the multidisciplinary transplant team to deliver more robust information and better prepare the nursing staff for the vital role they play in integrating the knowledge in the patient's care in the inpatient setting.

Classes are now conveniently

offered on the unit in our 3H conference room. Dr. Gabriel Schnickel, Surgical Director of Liver Transplantation, graciously teaches nurses about the history of transplantation. Other instructors include Kim Gross, the Nurse Practitioner for the Transplant Team and often frequent point of contact for our transplant patients and nurses on the ICU. She instructs the staff about Kidney Transplant, specifically, including nursing considerations and fluid management. Mike Misel, Transplant Pharmacist, instructs nurses on the importance of post-transplant medications, including anti-rejection medication and side effects, and considerations for the bedside nurse to keep in mind as they care for these patients and provide bedside education in preparation for discharge. Finally, as the as the nursing educator, I end the class by teaching my home unit about what it actually takes for the clinical nurse to appropriately care for these patients in that critical first few post-surgery days in the ICU. Not only does the class cover the skills and theory of nursing care, but also covers the emotional impact that these patients go through in receiving an often long-awaited for new lease on life with liver transplantation. These patients are sick for the majority of their life. The rollercoaster ride they take waiting for that special phone call when their donor is identified is unimaginable, but important for the nurse to be aware of and understand as they care for these patients and their families at such a life-changing moment in their lives.

Now at nearly the year mark following our re-organization of training, the class has been so successful that our sister unit 4J is initiating a similar training specific to the Progressive Care Unit. 4J (Progressive Care Unit) receives these patients from 3GH-ICU after the patients are no longer critical in need of ICU care and can be safely downgraded. At this point, patient and family education takes front stage as nurses and the transplant team prepares the patient for discharge and

assists the patient in participating and eventually managing their own care.

4J celebrates every transplant patient with a bell ringing ceremony prior to the patient's discharge; this allows the patient to celebrate this significant milestone and gives staff an opportunity to recognize the patient's progress and celebrate happy outcomes. ICU nurses routinely struggle with the burdens of witnessing death, suffering, and chronic debilitating illnesses, the routine causes of an ICU stay. Although often rewarding aspects of nursing care, exposure to death and debilitation carries an emotional toll and can lead to nurse burnout. Participating in transplant offers our nurses a way to care for a patient with a positive reason for ICU stay, as they usually leave better than they came in. 3GH ICU staff have partnered with 4J to participate in the bell ringing ceremony with the rest of the transplant team to wish the patient the best in the next step of their journey. Nurses who have been able to participate reported this has had a positive impact on their well-being. We hope as we continue that 3GH Jacobs ICU nurses see this a celebration of the care they've provided and their contribution, as well.

3GH Leadership and Staff are honored to be a part of the Solid Abdominal Transplant Program. We were honored when Dr. Schnickel , informed our last education session that, "I have worked all over the country and these nurses on 3GH ICU are the best I have ever worked with in taking care of transplant patients." The Transplant Team and 3GH have come far in this journey and continue to work well together to deliver the greatest care to our patients. We feel privileged to be a part of these patients' lives.

# Transplant Patient Empowerment: What To Know Before You Go!

By: Roxana Hazin, MSN, RN, CNL

Organ transplantation is a life-saving yet complicated and rigorous journey for the patients, their families and the healthcare professionals who guide them through this challenging path. An initial obstacle many sick patients encounter is qualifying to be on the transplant waitlist. Even still, a new patient is added to the national transplant waiting list every ten minutes, (<https://optn.transplant.hrsa.gov/>) but an average of 95 transplants take place each day in the U.S. leaving many on the waitlist, often indefinitely. For those who do receive a new organ, a meta-analysis on transplant patient compliancy have shown that 20-50% of patients were non-compliant to either their immunosuppressive therapies or their follow-up appointments or both (Laederach-Hofmann & Bunzel, 2000). Furthermore, another study found that “91% of patients who were noncompliant with both follow-up and medications either rejected the graft or died, compared with 18% of the compliant patients (Laederach-Hofmann & Bunzel, 2000).” Thus, the success of organ transplantation is critical and encompasses major lifestyle changes and strict adherence to new daily regimens for the organ recipient. Transplantation is not without multifarious challenges for these reasons, and the engagement of the patients and their families is necessary to ensure positive outcomes for the patient and their new organ.

The transplant journey starts when the need for the new organ is

identified; however, the educational demands the patient faces shift significantly once they’ve received their organ. When the solid organ transplant population came to JMC 4th floor in 2017, Sarah Raleigh, MSN, RN, CNL identified the need for nursing-centered clinical pathways to guide the nursing staff through all the intricacies of caring for this vulnerable population. The transplant clinical pathways are organized primarily for the post-operative patient in a variety of patient care domains with the supervision of a primary RN. These domains include: glucose control, patient education, consults/discharge, labs & tests, and lines/tubes/diet/meds (Figure 1). The implementation of the clinical pathways accomplished the following: increased the percentage of nurses competent to care for transplant patients; increased compliance to the pathways, which then decreased the rate of gaps in care delivery; and ultimately, the pathways decreased the average length of stay by one day in kidney transplant recipients.

Although this optimized the care of our transplant patients while in-house, nursing care was not the only area identified for improvement. The healthcare team recognized the need to bring the patient and their families even more ‘front and center’ in their care to ensure success. Measures of success for this patient population translate to: (a) improved retention of both transplant-related education and inpatient milestones required to discharge, (b) reduction in length of



**Roxana Hazin, MSN, RN, CNL**

joined UC San Diego Health as a new graduate RN in 2014 after obtaining her Master’s Degree in Science of Nursing from the University of San Diego. Since the grand opening of Jacobs Medical Center in 2016, she has been the Clinical Nurse Leader on Jacobs’ 4th floor PCU. In 2018, she earned her CNIII advancement by implementing a quality improvement project aimed at reducing CLABSI rates. The project was not only successful upon its execution, but the unit continues to benefit from the long-standing outcomes to this day, demonstrated by greater than 550 days without a CLABSI. Additionally, alongside her nurse manager, Laura Vento, MSN, RN, CNL, she has been instrumental in developing a Reflection-in-Action Process (RAP) focused on engaging frontline nursing staff with Nursing Sensitive Indicator-related processes. Working at the bedside and closely with the unit’s leaders, her role includes improving and upholding nursing quality care initiatives, educating and streamlining the use of nurse-centered clinical pathways, and being available as a mentor and resource to the staff.

Kidney Transplant RN Clinical Pathway

Indicators	POD 0 (day of surgery)	POD 1	POD 2	POD 3/DC
<b>Glucose Control</b>	Pt with DM should be on insulin <b>gtt</b> -q1 or 2h <b>bg</b> checks Q6h if on no insulin <input type="checkbox"/> <b>Met</b> <input type="checkbox"/> <b>Not met</b>	<input type="checkbox"/> EMMI titles: DM II Carb counting <input type="checkbox"/> <b>Met</b> <input type="checkbox"/> <b>Not met</b>	Glucometer delivered / training <input type="checkbox"/> EMMI : Checking BG Injecting Insulin If <b>gtt</b> receives insulin within 24h of dc; likely to need at home <input type="checkbox"/> <b>Met</b> <input type="checkbox"/> <b>Not met</b>	Glucometer self-check and insulin admin as indicated <input type="checkbox"/> <b>Met</b> <input type="checkbox"/> <b>Not met</b>
<b>Patient Education</b>	Explain need for frequent lab draws <input type="checkbox"/> <b>Met</b> <input type="checkbox"/> <b>Not met</b>  Explain PCA/pain control regimen  Notify of expectations: -Urine output -OOB Day 1 -S/E of prednisone and anti-rejection medications -Class time if applicable  Add transplant patient education title in Epic	Ensure patient has received transplant bag - review content - Ensure pillow present - Introduce daily logbook - Explain medications as administered (ie timing of food/ <b>taccq</b> )  Ambulate  Standing weight daily	Education on: (education tab) <input type="checkbox"/> Infection prevention <input type="checkbox"/> Ensure understanding of timely med admin- lab schedule <input type="checkbox"/> Rejection s/s <input type="checkbox"/> Wound Assessment & physical restrictions <input type="checkbox"/> Clinic/lab schedule <input type="checkbox"/> Med Admin Complete teach back questions with patient and caregiver <input type="checkbox"/> <b>Met</b> <input type="checkbox"/> <b>Not met</b>	Review AVS-pt. knows lab/clinic appointments Resolve any remaining items on <b>careplan</b> and pt. education tab, add discharge smart phrase  Check all medications at bedside against updated med action plan- <b>RN must check off each medication</b>  Review call list: coordinator/on-call MD numbers <input type="checkbox"/> <b>Met</b> <input type="checkbox"/> <b>Not met</b>
<b>Consults/ Discharge Checklist</b>	Determine caregiver availability- inform of class schedule & expectations - Post Recovery Checklist in room <input type="checkbox"/> <b>Met</b> <input type="checkbox"/> <b>Not met</b>	Involve caregiver in EMMI teaching; get them to class! M 1300/ <b>Tu</b> 0900/F 1000 G-conference room - case management needs (including out <b>gtt</b> dialysis) - PT/OT - Call Pharmacy for <b>Thymo</b> prior to pre-med administration <input type="checkbox"/> <b>Met</b> <input type="checkbox"/> <b>Not met</b>	Determine plan for dc- home with family/ bannister - Ensure caregiver is aware <b>gtt</b> is leaving tomorrow and is available for teaching and ride home - CM including DME needs and <b>outpt</b> dialysis - Call Pharmacy! <b>Thymo</b> ASAP <input type="checkbox"/> <b>Met</b> <input type="checkbox"/> <b>Not met</b>	Determine plan for med pickup- Kaiser <b>gtt</b> ?  Nutrition final recs Endocrine final recs Pharmacy Med Action Plan <input type="checkbox"/> <b>Met</b> <input type="checkbox"/> <b>Not met</b>
<b>Labs &amp; Tests</b>	<input type="checkbox"/> if K is >5 contact provider & nephrology <input type="checkbox"/> CBC/BMP/Mag/ <b>Phos</b> <input type="checkbox"/> TK <input type="checkbox"/> <b>Met</b> <input type="checkbox"/> <b>Not met</b>	<input type="checkbox"/> CBC <input type="checkbox"/> BMP <input type="checkbox"/> Mag/ <b>Phos</b> <input type="checkbox"/> TK <input type="checkbox"/> <b>Met</b> <input type="checkbox"/> <b>Not met</b>	<input type="checkbox"/> CBC <input type="checkbox"/> BMP <input type="checkbox"/> Mag/ <b>Phos</b> <input type="checkbox"/> TK <input type="checkbox"/> <b>Met</b> <input type="checkbox"/> <b>Not met</b>	<input type="checkbox"/> CBC <input type="checkbox"/> BMP <input type="checkbox"/> Mag/ <b>Phos</b> <input type="checkbox"/> TK <input type="checkbox"/> <b>Met</b> <input type="checkbox"/> <b>Not met</b>
<b>Lines / Tubes / Diet/Meds</b>	Foley – ensure draining Diet – clears IVF replacement PCA <b>Dilaudid</b> <input type="checkbox"/> <b>Met</b> <input type="checkbox"/> <b>Not met</b>	Foley in place Diet – clears and advance per team IVF – off when taking PC Oral pain meds Start Heparin sub Q <input type="checkbox"/> <b>Met</b> <input type="checkbox"/> <b>Not met</b>	Foley (if LR, remove POD 2 with a provider order) keep if DDKT Diet - advance as tolerated <input type="checkbox"/> <b>Met</b> <input type="checkbox"/> <b>Not met</b>	Foley out first thing in am (must be ordered by provider Foley ) <input type="checkbox"/> <b>Met</b> <input type="checkbox"/> <b>Not met</b>

- DO NOT THROW THIS PAPER AWAY! When completed leave in Laura's inbox
- If POD goal not met, please indicate reason why

Discharge RN : \_\_\_\_\_  
Date completed: \_\_\_\_\_

stay and readmissions, and ultimately prepare the patient to safely and independently care for themselves and their organ upon discharge and for the remainder of their lives.

As with many patient populations, transplant patients endure information overload. This information includes: who from the interdisciplinary team they need to see; what the post-operative milestones are; healthcare items to be received and how to use them; a detailed “Pharmacy Class” to be conducted by the transplant pharmacist, and a visit from the outpatient transplant coordinators who will teach them in detail about the transition of the patient’s

care into the outpatient domain. These teaching topics need to be effectively taught within three post-op days, which is the typical length of stay for a kidney recipient. The learning needs of this population lend to the patients feeling particularly overwhelmed as they are simultaneously trying to recover from recent surgery.

To simplify the surge of information provided to our transplant patients about their inpatient goals, Kimmie Gross, NP, envisioned a visual chart that mirrors the nursing clinical pathways but would instead target and involve the patients and their identified caregivers in promoting discharge-

readiness. The overall objective was to empower patients to take a more active role in their discharge process. Common areas of confusion for the patients were addressed in the chart design and content; for example, the pharmacy class schedule and an anticipated date of discharge section were both included. The chart is named “What to Know Before You Go!” (Figure 2).

The utilization of the chart is multitudinous, mirroring the various aspects of each transplant patient’s care. The process starts as the nurse prepares the room for admission by hanging the chart directly in front of the bed where it is continuously available to the patient and families.

# WHAT TO KNOW BEFORE YOU GO!

Name/Nickname:  
Caregiver Name:  
Language:

PLEASE CHECK OFF AS YOU COMPLETE:

## Who You Need to See and Chat With:

- Pharmacist
- Dietician
- Social Work
- Case Management

## Milestones:

- Walking around Hallway
- Passing Gas
- Pain managed
- Foley catheter removed
- Ring the bell!!!!

## Things That Need to Be Given To You:

- Transplant Bag on Post-Operative Day #1   
(bag to stay with patient until discharge)
- Glucometer on Post-Operative Day #2

## Teaching:

- Pharmacy Teaching
- How to Use Blood Pressure Cuff
- How to Use Glucometer
- How to Navigate Log Book
- EMMI Videos

**EXPECTED DISCHARGE DATE:** \_\_\_\_\_

*Pharmacy Classes on Monday @1pm, Thursday @9am, Friday @10am*

*\*Caregiver and patient expected to attend a pharmacy class*

The nurse helps the patient check off each accomplishment as they occur throughout their inpatient stay while discussing the remaining goals with the patient. Additionally, as the transplant team rounds each morning, they update the “Expected Discharge Date” section on the chart to clarify and set realistic expectations for the remaining items to be completed. The chart not only serves as a visual cue to organize information for patients, but also as an effective communication tool that enables the patients to refer back to for reinforcement.

As one of the Clinical Nurse Leaders on JMC 4FGH, I conduct daily transplant rounds on the floor. A part of these rounds is spent evaluating the use of the “Know Before You Go!” chart process and outcomes. Recent observations include patients and caregivers speaking to the chart’s components independently and often without prompting. This is a direct indicator that the chart is supporting the patient’s role in being more engaged and responsible for their care.

Furthermore, patients, caregivers and nurses describe the chart as an “effective” and “convenient” tool to support appropriate plan of care expectations and in reducing the feeling of being overwhelmed by all of the new information essential to keeping them safe beyond hospitalization.

Another manifestation of the chart’s functions is as an effective communication tool between patients and the healthcare team. As the multidisciplinary staff continuously update the chart, ambiguity relating to the patient’s plan of care status is minimized. For example, confusion regarding expected discharge date is now an anomaly. Moreover, average length of stay (aLOS) data reflects these recent observations. A third of the way through fiscal year 2020, aLOS for our kidney and liver transplant recipients combined is down to 4.3 days from 5.6 days in FY2019! Lastly, and although subjective at this point, we’ve observed an absence of education-related readmissions, which in conjunction with decreased

aLOS, strongly suggests improved discharge readiness.

When patient education weighs as heavily as it does for a fresh organ transplant recipient, this more standardized and engaging approach to patients and families has proven to be successful for our JMC 4th floor transplant patients.

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# Kidney Transplant Waitlist Management

By: Michaela Bukalova Rojas, BSN, RN and David Lewino, RN, CCTC

One of the most important tasks for a pre transplant coordinator is to ensure that a patient is ready for transplant when an organ becomes available. In heart and liver transplant, organs are allocated based on medical urgency, which is determined by a formula that evaluates several medical data points, such as: lab values, inotrope support, mechanical ventilation, etc. Since transplant programs have to update this data daily, they are good at identifying patients that are likely to be transplanted next. In fact, most heart and liver programs have a “Top 10” meeting to review the highest placed patients in each blood group to ensure those patients are ready for transplant.

In kidney transplant, there is no such thing as medical urgency because patients have dialysis to maintain some degree of kidney function. Therefore, all kidney transplant-waitlisted patients are considered essentially the same. The patient’s placement on the kidney transplant waitlist is determined by their individual time on the waitlist itself. This start time is determined two different ways, depending upon if the patient has started dialysis yet. If the patient has started chronic dialysis, their start time on the waitlist is back-dated to the initiation date of chronic dialysis. If a patient has not started dialysis but has declining kidney function and will most likely need chronic dialysis in the near future, they can also be placed on the list. In this situation, the patient must have at least one qualifying GFR of 20 or less. For

these pre-emptive patients, their start time is the date they are officially added to the kidney transplant waitlist, after a thorough evaluation by the transplant team and deemed a kidney transplant candidate.

In kidney transplant, organs are allocated based on time on the list. Time is calculated down to the second. 1 Point = 1 Year. Without medical stratification, it’s crucial to develop a method to track the roughly 800 patients we have listed at UC San Diego Health for Kidney Transplant. This process is referred to as waitlist management.

The current Kidney Allocation System (KAS) provides both challenges and opportunities in managing our patients on the list. Historically, patients were divided by ABO blood groups: A, B, AB and O. In the past, we would focus our efforts on recipients who had



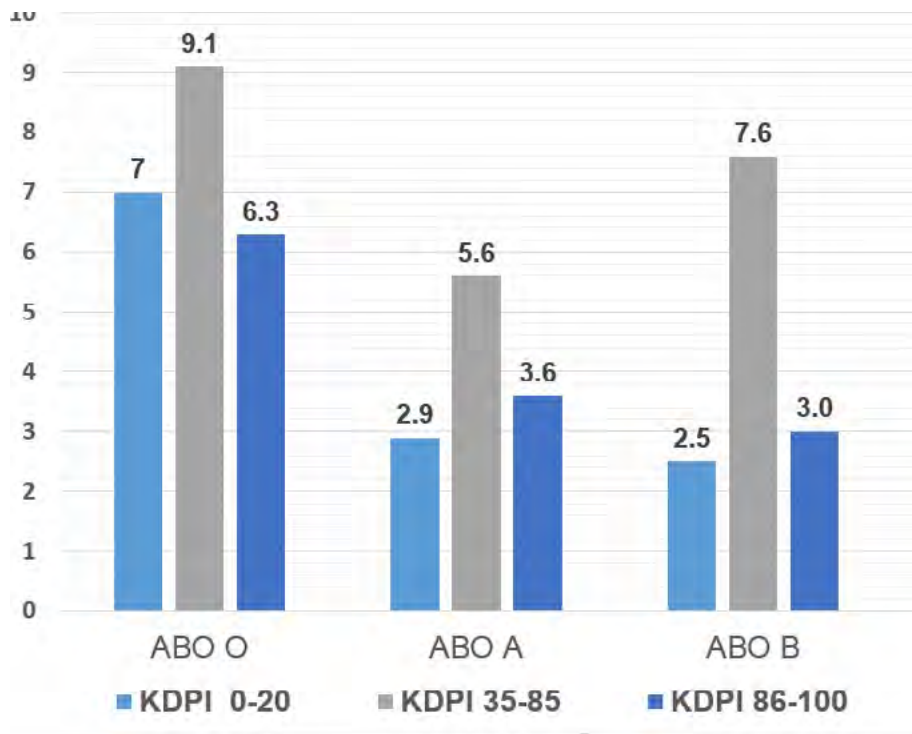
**David Lewino RN, CCTC**

received his nursing degree from Prince Henrys Hospital in Melbourne, Australia in 1984. He was a procurement coordinator with Lifesharing and business manager of Western Region Transplant Services CVS Procure prior to joining UC San Diego Health as a kidney transplant coordinator in 2002. He has received several awards for his research, the most recent recognition was 2018 UNOS Transplant Administrator’s Forum Best of the Best Abstract for his abstract “Strategic Waitlist Management: Not all patients are equal”. He has been published several articles in the Journal of Transplant Coordination in 1992, 1993 and 1996.



**Michaela Bukalova Rojas, BSN, RN** is a Kidney Transplant Coordinator at UC San Diego. She joined UC San Diego Health two years ago. She earned her Bachelor's of Science in Nursing at University of Cincinnati in Ohio and worked at University of Cincinnati Medical Center as an Inpatient Transplant RN for a few years. She also holds a BA in Psychology from University of San Diego and MBA from San Diego State University.

## Amount of time needed in years to be competitive for a kidney transplant based on ABO and KDPI cohort



the most time accrued in each ABO. Under the new KAS, we have more levels of stratification (Health Resources and Services Administration, 2020). A key component of the new system is the Kidney Donor Profile Index (KDPI). This is a method of assessing donor quality based on 10 data points; they include: donor age, height, weight, ethnicity, history of HTN, history of diabetes, cause of death, serum creatinine, hepatitis C status and whether it's a donation after cardiac death or not. Based on these 10 data points, the cadaveric donor is assigned a score between 1 and 100; like golf, the lower the score the better. For example, a donor with a KDPI of 1% would be considered the best possible donor with the longest anticipated graft survival, whereas a donor with a KDPI of 100% would be considered a borderline donor. Under the KAS, there are in fact 4 different cohorts of patients per ABO based on KDPI. For tracking purposes, we divided

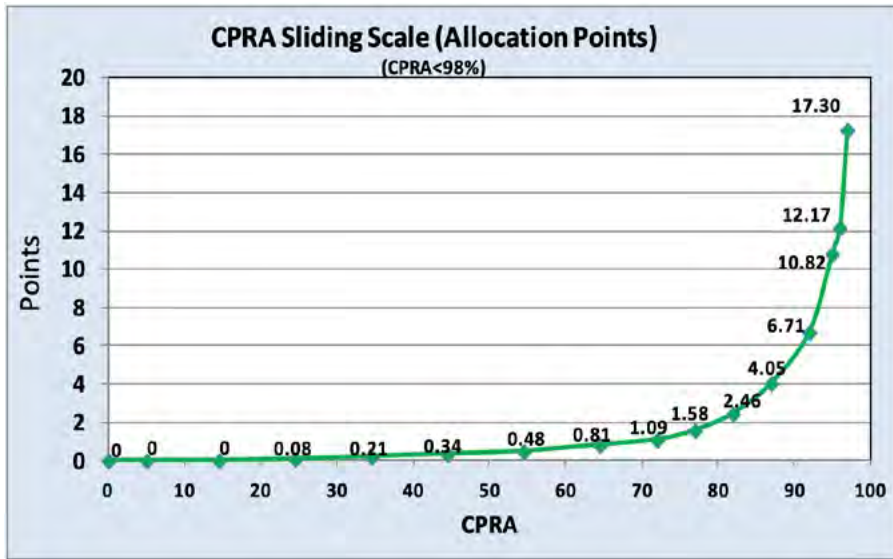
them into 3 cohorts: KDPI 0-20 %, 21-85 % and > 86%. KDPI 0-20% cohort is reserved for the younger, healthier recipient - typically those under 40 years of age that do not have diabetes. Most patients on the kidney transplant waitlist qualify for KDPI 21-85%. Donors with a KDPI >86% are donors that are suitable for older patients, for example, a diabetic patient that is over 60 years of age. Patients have to consent to accept a kidney from a donor over 85% and they must qualify to accept a KDPI < 20%. Patient wait times can vary significantly depending upon what KDPI cohort they qualify for or opt to accept.

To make tracking even more challenging, a patient can be eligible for extra points if they have a significant antibody level. Antibodies are present in roughly 20% of our potential kidney recipients. Patients can develop antibodies through blood transfusions, pregnancy and prior organ transplant. Having one of these events does NOT guarantee

you will develop antibodies, it just means that you have a higher risk. Antibodies are checked on initial evaluation and every 3 months while patients are on the waitlist. Antibodies are measured between 0- 100%. For example, if a recipient has an 86% antibody level, that would mean they are unable to receive a kidney from 86% of the population and are compatible with only 14% of the population. Because of the significant challenge finding a compatible donor for patients that have high antibody levels, patients are given extra points/time on the list in an increasing sliding scale. In the example above, the recipient would receive 4.05 points/years added to their baseline accrual time.

Finally, there are cohorts of patients that may have reduced wait times for kidney transplant. First are those recipients who DO NOT have Hepatitis C but are willing to take a donor WITH Hepatitis C, as this expands the donor pool. Secondly are those recipients that are HIV +

## Extra Point allocation for recipients with antibodies



## Waitlist Tool

Chr Px ID	Candidate Name	Org	Age	Diab	KDPI >85%	BG	Stat	EPTS <20%	CPRA	Points	Crd	Notes
12345681	Patient D	KI	66	Y	Y	A	1		100	209.6	NK	
12345852	Patient FS	KI	28			A	1	Y	100	207.8	NK	
12346052	Patient NK	KI	38			A	1	Y	100	207.5	OS	
12345848	Patient FD	KI	48			A	7		99	55.0	SR	
12346230	Patient UG	KI	37			A	1		99	54.6	DL	HEP C
12346315	Patient XN	KI	40			A	7		99	54.1	ST	
12346331	Patient YD	KI	46			A	1		99	51.8	DL	
12346339	Patient YL	KI	66			A	7		0	0.6	SR	kidney priority
12345774	Patient CS	KI	56		Y	A	1		95	22.1	OS	
12345736	Patient BG	KI	35			A	1		81	15.5	NK	
12345851	Patient FR	KI	64	Y		A	7		UNK	14.2	SR	
12346034	Patient MS	KI	36			A	7	Y	92	12.9	OS	
12345788	Patient DG	KI	53	Y		A	7		96	12.6	OS	
12345899	Patient HN	KI	65		Y	A	7		79	12.3	SR	
12346101	Patient PH	KI	36			A	7	Y	14	10.9	OS	
12346291	Patient WP	KI	52		Y	A	1		94	10.9	SR	
12346126	Patient QG	KI	50	Y		A	1		90	10.8	ST	
12345846	Patient FM	KI	63			A	7		25	10.6	DL	
12345943	Patient JF	KI	55			A	1		78	9.8	NK	
12345840	Patient FG	KI	36		Y	A	1		0	9.5	SR	
12345999	Patient LJ	KI	60			A	7		83	9.2	SR	
12346262	Patient VM	KI	47	Y	Y	A	1		93	9.2	SR	
12345947	Patient JJ	KI	67	Y	Y	A	7		16	9.1	ST	
12346035	Patient MT	KI	69		Y	A	7		0	8.6	NK	
12345980	Patient KQ	KI	65	Y	Y	A	7		48	8.2	SR	
12346267	Patient VR	KI	49			A	7		0	7.9	OS	
12345730	Patient BA	KI	51		Y	A	7		0	7.5	SR	
12345946	Patient JI	KI	55			A	1		0	7.3	SR	HEP C
12346179	Patient SH	KI	55			A	1		30	7.0	NK	
12346086	Patient OS	KI	60			A	1		50	7.0	NK	
12345920	Patient II	KI	66	Y	Y	A	1		0	7.0	DL	
12346026	Patient MK	KI	43			A	1		54	6.9	DL	HIV
12346358	Patient ZE	KI	49			A	1		0	6.9	DL	
12346006	Patient LS	KI	32			A	7	Y	62	6.8	SR	
12345723	Patient AT	KI	57			A	1		0	6.8	NK	
12345859	Patient FZ	KI	37	Y	Y	A	1		44	6.8	OS	
12345764	Patient CI	KI	43			A	7		0	6.8	OS	
12346010	Patient LU	KI	44			A	1		0	6.8	DL	

and are willing to accept a donor kidney from an HIV + donor; HIV + to HIV + is part of the HOPE trial that only a few select programs on the West Coast are participating in. Finally are those patients that require multi-organ transplant. Patients that have received a liver transplant in the last 12 months and find themselves needing a kidney post-transplant get expedited access to a kidney.

At UC San Diego Health Kidney Transplant Program, the pre-transplant team, consisting of Nina Krishun, Stephanie Ta, Suzanne Reed, Michaela Bukalova Rojas and David Lewino, have developed a tool for tracking pre-transplant patients. Our process and tools for Waitlist Management are sophisticated enough to accommodate the significant differences in wait time for each ABO cohort within the KDPI system. We incorporate the additional points that are allocated for the presence of antibodies and track the various categories of KDPI and different types of donors, which may include HIV or Hepatitis C, all of which may be critical in securing a kidney graft much sooner than the average wait time. This distinctive waitlist management strategy has received national recognition at the 2018 UNOS Transplant Management Forum where our Poster Presentation was awarded “The Best of the Best”. A form of our tool has now been made into a standard UNOS report that can be utilized by any transplant program in the U.S. More importantly, UCSD Kidney Transplant has completed 90 cadaveric kidney transplants as of December 1, 2019, which is more than any other year in our 51-year history of performing kidney transplants!

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# Preparing patients for Kidney Transplant Admission: A patient-centered education collaboration

By: Nina Krishun, BSN, RN; Stephanie Ta, BSN, RN; Lisa Vineyard BSN, RN, PCCN

Patients listed for kidney transplant are not unlike other transplant patients waiting for “the call” from their registered nurse (RN) transplant coordinator informing them it is time to be admitted to the hospital. One distinction is how long kidney patients may need to wait before being called in for a transplant from a deceased donor. Depending on blood type, patients may wait up to 10 years from the time they started dialysis. At this time, there are over 700 patients on the kidney transplant list at UC San Diego.

Of those approximately 700 patients, the RN coordinator team identifies those that are considered ‘Highly Placed’. Highly Placed is a term used to describe patients who have accrued enough wait time to be competitive for kidney offers. The outpatient team felt strongly that there was a need to develop a formal education class for these Highly Placed patients and their caregivers in order to prepare them for the organ offer and being admitted to the hospital. In order to include important components regarding the inpatient stay and what to expect at discharge, a collaboration was created with the inpatient floor nurses on Jacobs 4FGH. A partnership was set up between 2 RN transplant coordinators and 1 inpatient nurse to develop and implement this class.

## Course Content for Patients and Caregivers

This class, named “Preparing for Kidney Transplant Admission,” creates

a partnership between the inpatient and outpatient teams that support kidney transplantation across the continuum of care. The goals for this course include patient understanding of: 1) how to prepare for kidney transplant admission; 2) the different types of kidney offers; and 3) what to expect during hospital admission, discharge, and outpatient clinic visits after discharge.

Kidney offers can happen any day at any time, so the importance of being prepared for the call is emphasized. The different types of donors are reviewed, which include: standard donors, increased risk donors, Kidney Donor Profile Index (KDPI) >85% donors, and Hepatitis C donors. Kidney transplant patients need to understand the types of organ offers because the patient has the option of whether or not they would consider these different offer types. The Kidney Donor profile index (KDPI) is a score given to cadaveric donors that summarizes the likelihood of graft failure after transplant. Although higher KDPI scores are associated with shorter estimated function, they are still transplantable quality kidneys that have a half-life of about 5.6 years. Patients can choose whether or not to consider offers from this group. The treatment of Hepatitis C has undergone a major transformation. With new drugs that effectively treat the virus, and fewer side effects, UC San Diego Health now offers patients the opportunity to accept Hepatitis C positive donors to decrease their wait times. Patients also have the choice of whether or not to accept a



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is a Clinical Nurse III, Kidney Transplant Coordinator UC San Diego Health. She earned her Bachelor of Science in Nursing from University of Phoenix. Stephanie is a member of the UCSD Transplant Council and a member of The Organization for Transplant Professionals (NATCO). She has 10 years of experience as a registered nurse.



**Lisa Vineyard BSN, RN, PCCN**

is a Clinical Nurse III at Jacobs Medical Center on the Surgical Oncology Progressive Care Unit. She earned her Bachelor of Science in Nursing at California State University San Marcos. She has been at UC San Diego Health since 2013 where she began as an extern student nurse. She is involved in the UCSD Transplant Council and Unit Based Practice Council as the Fundraising chair. She works on the unit as a floor, resource, charge and preceptor RN.

kidney from this group.

The timeline from the offer call to hospital admission, which is typically between 12 and 24 hours, is also reviewed. There is a specific set of medical questions the RN coordinator on call will ask the patient, such as when their last dialysis was, any insurance changes, and if the patient has an current signs/symptoms of infection. These questions are discussed in detail to emphasize the importance of answering as accurately as possible. As with any transplant, there is always a chance the patient may be sent home due to unforeseen circumstances – either because of a new medical finding by the inpatient team or perhaps the kidney itself has been assessed not to be of transplant quality.

The class also emphasizes the valuable role that the transplant patient’s caregiver will play, including assisting with activities of daily living (ADL), transportation to appointments and lab draws, as well as recognizing urgent symptoms post-transplant and who to call for help or if other questions arise. There is also an inpatient pharmacy class for both the patient and caregiver to review medications. Navigating the admission process which includes where to park, where to present for admission, what to bring for the hospital stay is also reviewed. During the class, patients are encouraged to ask detailed questions; often, one line of questioning opens up other topics, so it is not unusual for the RN coordinator to field questions ranging from post-

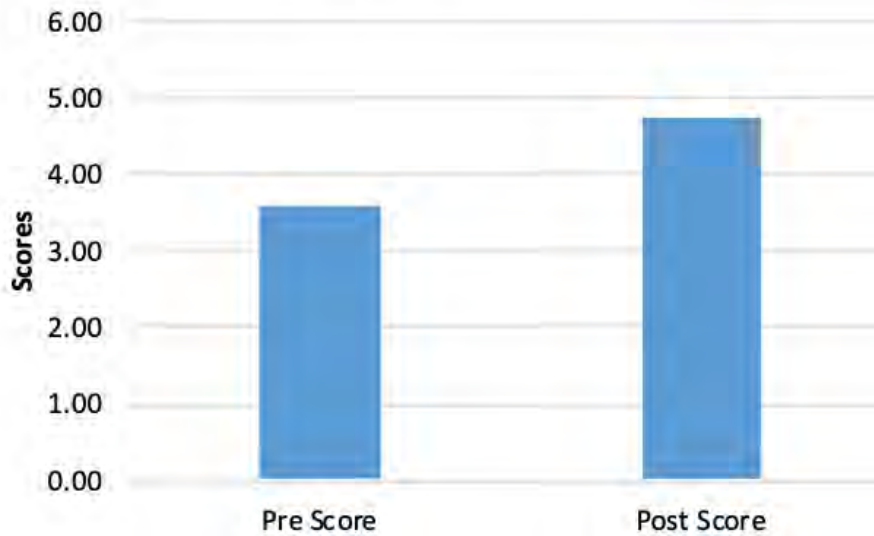
transplant medications to what the process is to work up a potential living donor. This valuable exchange of information can sometimes lead to patients connecting with one another, forming a sense of community in a setting that is unique and outside of an outpatient clinic or inpatient setting.

Finally, a unique part of the class is the tour of the 4th floor inpatient unit, an empty patient room and the family lounge to better prepare the patient and caregiver and orient them to the facility in advance. The class itself is held at the SDG & E room in the Thornton Pavilion of the Jacobs Medical Center. It is strategically scheduled on a Sunday to accommodate patient’s dialysis schedule which is routinely either Monday/Wednesday/Friday or Tuesday/Thursday/Saturday. Surveys given at the end of the class showed very positive feedback and suggestions for providing the class in a different language; all of which are in consideration and several suggestions were implemented.

**Patient-Centered Steps Taken to Address the Need**

RN Coordinators conducted a survey of patients who were recently transplanted to assess how they felt about their level of preparedness for the offer, their level of understanding of the different types of kidney offers, and if they understood the importance of the support person role during the hospital stay and once patients are discharged. The survey utilized two types of

## I feel confident on the education received about the kidney transplant process



questions: statements regarding aspects of receiving a kidney offer and being admitted to the hospital in which a patient would use a Likert scale to provide their level of agreement/disagreement with the statement and open ended questions so that patients could provide any additional information regarding what information would have helped better prepare them for the kidney offer and hospital admission.

The inpatient nurse surveyed patients during their last day of admission to evaluate how well education was received and if they felt prepared prior to their admission. From these results, an emphasis was made on what patients could expect each day, what they could expect to be attached to (i.e. lines/drains/monitors), and glucometer usage. Many patients were under the assumption that they would be in the hospital for at least a week when, in reality, many patients are discharged within three to five days.

### Results of the Class

The most important takeaway from the implementation of this class is that the data shows that patients who attend the class feel more prepared. This class has helped to support both the outpatient and inpatient departments' efforts to increase the education and awareness level of the transplant process and the decisions patients can make regarding the types of kidney offers they want to consider. Currently the class is funded by the kidney transplant department with nurses utilizing work time to teach the classes. From our pre/post-test offered during our class, we saw a 22% increase in confidence.

### Patients' Perspectives

Patients reported "even though I was at an all-time stress on my way to the hospital, I knew where to go from your class;" another stated "it was a great class and I learned a lot." All of these positive statements showed a need to continue this course for future kidney transplant

recipients. As a result of the feedback we have increased the frequency of the class and are now offering it in Spanish.

This class has shown how important it is to offer comprehensive education to our patients. To date, over one-third of patients who have attended this class have already been transplanted! Our partnership has taught us the importance of close collaboration between the inpatient and outpatient world. We work together on a similar goal: to provide excellent patient care to ensure the best possible outcomes.

# Expanding the Donor Pool: Using Hepatitis C Positive (HCV +) Organs in Hepatitis C Negative (HCV-) Recipients

By: Jennifer Smith, MSc, RN and Suzanne Reed, BSN, RN

Individuals with end-stage renal disease (ESRD) have limited long-term options: dialysis or kidney transplantation. Dialysis is life-saving, but provides limited clearance and is associated with increased morbidity and mortality (Neovius, Jacobson, Eriksson, Elinder & Hylander, 2014). Additionally, strict dietary restrictions and four or more hours on dialysis three times per week contributes to significantly reduced quality of life. For those who are eligible, transplant is often the preferred treatment option. According to United Network for Organ Sharing (2019), there are currently more than 95,000 patients awaiting kidney transplant in the United States. With this high demand and a limited supply of suitable organs, wait times are long and only continue to grow. In San Diego, the average wait time for a kidney transplant is estimated to be upwards of 8-9 years for those

with blood type O. Blood type AB experiences the shortest waiting time with an average of 3-4 years. While they wait in limbo, these patients face the difficult reality that as time goes on, they run the risk of developing a serious health condition that may make them ineligible to receive a transplant.

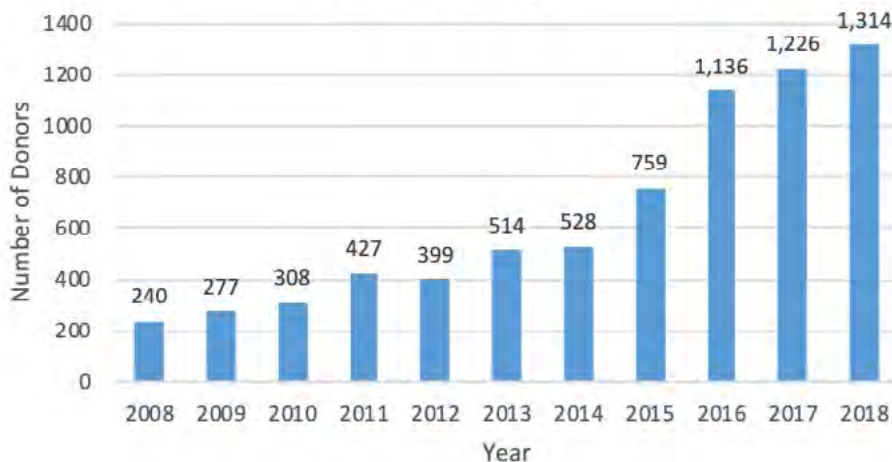
Previous efforts to increase the number of eligible donors and organs have included donation after cardiac death (DCD) and expanding the use of Public Health Service (PHS) Increased Risk donors, but neither have been enough to make a significant impact on the waitlist as waiting times only continue to increase.

To further complicate matters, an increasing number of young and otherwise healthy adults are dying from drug overdoses as the opiate epidemic continues. This, too, has had an impact on transplantation.



**Suzanne Reed, BSN, RN, CCTC, CPTC** has worked in transplant since 1991. She came to UC San Diego in 2004 and spent 10 years with the Heart and Lung Transplant programs before transitioning to the Kidney Transplant program in 2014. She is a member of the planning committee for the UNOS Region 5 educational collaborative.

### Deceased Donor by Drug Intoxication



**Jennifer Joliat Smith, BSN, RN**

is a Clinical Nurse IV in the outpatient kidney transplant department. She graduated with her BSN from Kent State University in 2007 and gained experience at The Cleveland Clinic, USC Hospitals, and St. Vincent Hospital in Los Angeles before coming to UC San Diego Health in 2011. She looks forward to completing her MSN in the SDSU Dual CNS/NP program this May and in her new role will remain dedicated to the care of transplant patients.

Annual cost of dialysis	\$90,971
Annual costs of kidney transplant	\$34,780
One time cost of antiviral drugs	\$13,000 to \$93,000

In 2019 the Organ Procurement Transplantation Network reported that although drug intoxication was the cause of death for only 240 kidney donors in 2008, that number rose dramatically to 1,314 in 2018 (Figure 1). Hepatitis C infection in this population also continues to climb at unprecedented rates, with the CDC reporting in 2017 a 4-fold increase among 18-29 year olds over a ten-year period. Previous attempts at using HCV + organs were limited by poorly tolerated medication treatment regimens, low viral clearance rates, and poor patient and graft survival rates. As a result, quality organs from young HCV + donors were not even considered for transplantation.

This changed in 2014, when the arrival of direct-acting antiviral drugs (DAAs) revolutionized hepatitis C treatment. These medications have a favorable tolerability profile and provide cure rates of 94-99% following a 12-week treatment course, thus creating the opportunity to reconsider the practice of HCV + organ transplantation. Although 12 weeks of treatment is costly, ranging from \$13,000-93,000 in addition to the \$34,780 for the annual treatment cost for kidney transplant recipients. The national average cost of dialysis is \$90,971 each year the patient is waiting on the kidney transplant list. As such, the comparative reduction in annual healthcare spending supports this initial high cost for hepatitis C treatment (Gupta, Zhang, Carroll, & Sterling, 2018).

In 2017, published data from the THINKER-1 trial demonstrated successful kidney transplantation using HCV + organs into 20 HCV – recipients. The success was based on sustained viral response at 12 weeks, stable or improved quality of life scores, and excellent kidney function in all recipients (Goldberg et al). Initially, UC San Diego Health System’s Center for Transplantation began offering HCV + organs to HCV + patients that had not yet been treated with DAA regimens. With successful experience in these patients, we developed a protocol to begin offering HCV + kidneys to eligible HCV – recipients.

Prior to adding a recipient to the kidney transplant waiting list as accepting a HCV + organ, the recipient is counseled on the expected transmission of the virus and potential risk that hepatitis C may not be cleared with treatment. This is reiterated again when an offer of a hepatitis C organ is received for the recipient prior to the admission for the kidney transplant.

After transplant, there is a specific protocol for recipients who receive an organ from a HCV – donor. Polymerase Chain Reaction, or PCR, is a tool often used by labs to detect the presence of a particular gene to help identify pathogens during infection. Hepatitis C PCRs are sent on post-transplant day 3, week 1, and week 2. Once the recipient’s lab results confirm they have contracted the hepatitis C virus, testing for hepatitis C genotype and

NS5A drug resistance can now be performed. These results are used to guide drug selection because certain DAAs work best with particular hepatitis C genotypes.

Since instituting the Hepatitis C protocol in January 2019, UC San Diego's Kidney Transplant Program has performed 15 HCV + kidney only transplants to HCV - recipients. The oldest kidney donor was 49 year old. Seven of the recipients are over 60 years old with three being over 70 year old. Comparing the organ quality using donor age and terminal creatinine, little difference is identified across HCV + donors versus HCV - donors. However, waiting times have been reduced on average anywhere from 5 months to 3 years, depending on blood type. Given the older age of these recipients, it is possible they may have otherwise aged out of their ability to receive a kidney transplant. At time of this publication, the kidney program has not experienced any DAA treatment or graft failures.

Though the reported waiting times are shorter for recipients willing to accept HCV + organs, the data from our center does not capture the true time-benefit, as several of our patients made the decision to accept HCV+ organs after already accruing significant amount of waiting time. Those who have seen the most significant benefit are those who face prolonged wait times, do not have living donors, and may otherwise develop sequela of long-term dialysis and jeopardize their candidacy for transplant.

The implementation of the Hepatitis C transplant protocol has been an exciting time for our kidney transplant program, and we are proud to be able to extend quality years of life for patients by making transplantation possible potentially years earlier than it would otherwise be for many patients

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# Teaching the Teachers

## Incorporating experiences of transplant patients in nursing education

By: Khrizna Chong MSN, RN, CNS, CSC-CMC and Daniel Pollack MSN, RN, ACCNS-AG, CCRN

Patients who receive heart and lung transplants go through multiple psychological and physiological changes during all of the phases of the transplant process. Transplant patients also have a whirlwind of emotions during the pre-transplant, intra-transplant, and post-transplant phases. Patients must be active participants in their care with a reliable support system. An interdisciplinary team is responsible for all aspects of their care. These providers include physicians, advanced practice providers, physical therapists, occupational therapists, speech therapists, dietitians, pharmacists, social workers, and nurses. Nurses play a unique role in the acute care of transplant patients since not only are they responsible for the patients' direct care, but also prepare these patients for life after transplant.

Nurses care for patients at all phases of transplant care. As a patient waits for a heart or set of lungs, nurses manage symptoms as well as patients' fears. Nurses witness the first beats of the newly transplanted heart and the first breaths of newly transplanted lungs. Nurses are responsible for seeing these patients through the twists, turns and successes of surgery and recovery. Along that path, nurses are responsible for arming patients with the tools they need for life after discharge. How do you adequately prepare nurses so that they can prepare patients for life after transplant? In the Cardiovascular Center, the Cardiac Boot Camp series is a set of courses that train nurses for caring for cardiovascular patients.

The Clinical Nurse Specialist team has incorporated former transplant patients as guest speakers in classes that are part of the core curriculum for new cardiovascular nurses. The exchange of teaching and learning between patients and nurses has been transformative and valuable for both parties.

The guest speakers have an impact on nurses when they tell their story in Cardiac Boot Camp. As former heart transplant patient Scott Cannady recalls, "What was important to me was living... In the hospital you go from point A to point B to get to feeling well medically. But it was C and D and E all the way to Z that really mattered for me as I figured out how to get back to normalcy in my life." Mr. Cannady appreciated the teaching



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points that nurses provided, which helped him function independently when he got home. He fondly described a nurse that spent 30 minutes with him on a dressing change, because his skin was so sensitive. "In that time, she showed me how to do it so I don't get an infection. I knew that it usually didn't take this long but she spent the time to show me," Mr. Cannady said.

The other role that the transplant recipients play is to prepare other potential transplant patients for their journey. In this case, certain post-

transplant patients feel the need to give back due to their new organ and lease on life. John McNamara, a lung transplant recipient, states, “to whom much is given, much is expected.” Mr. McNamara and Ken Young, another post-lung transplant recipient, want to help pre-lung transplant patients prepare for their journey. They can provide a unique insight into the process. Mr. McNamara and Mr. Young provide a truthful representation. The goal is to



**Daniel Pollack MSN, RN, ACCNS-AG, CCRN**

is a Clinical Nurse Specialist at the UC San Diego Sulpizio Cardiovascular Center. He worked as a Critical Care Nurse from 2008 – 2017. During that time he finished his masters’ degree as a Clinical Nurse Specialist from Johns Hopkins University, School of Nursing in 2016. Daniel has been a Clinical Nurse Specialist since 2017 and has worked at UC San Diego Health since 2018.

be honest with people so that they have realistic expectations. This will ensure that patients are prepared for active participation in their own care.

Post-transplant recipients are an important part of the care team. The post-transplant volunteers not only coach patients during the difficult times in their journey, but also provide guidance to the nurses on how to provide care to these unique patients. Ted Dean, a post-heart transplant recipient mentioned that as a patient, you are coming to terms with how to merge “life



UCSD Heart Transplant Recipients Scott Cannady & Ted Dean

before transplant” with “life after transplant.” He coaches the nurses during his time at Cardiac Boot Camp to be mindful of how ready patients are to begin to receive any education. He recalls a time when the nurse delivered a very full cup of medications and he spent hours just thinking he just was not ready to take them. He tells nurses to “get to know the patient. Respect the patient’s side. Emotions can be tough as a patient.” He mentions that when the nurse acknowledges these roadblocks, it allows patients to begin the process of healing.

Mr. McNamara recalls a situation when he was in the ICU and a nurse was experiencing some moral distress regarding patient selection for transplant. As a member of the care team, he provided the nurse with insight; “for every one patient that you see [struggling in the hospital], there are ten patients [who are thriving] that you don’t see.” Mr. McNamara is part of the care team due to his unique perspective and ability to convey his experiences to both patients and nurses.

Mr. Cannady and Mr. Young were both inspired by Mr. McNamara

and Mr. Dean to become volunteers for the heart transplant and lung transplant teams. Mr. Young decided to proceed with lung transplantation after listening to a presentation by Mr. McNamara. After his journey, Mr. Young wants to convey to other prospective lung transplant patients to, “manage their expectations and do not expect their experience to be a smooth road.”

These four volunteers are proud to be “complimentary to the professional staff,” as Mr. Young describes his role. Their role is crucial to allow nurses to understand the pathway of the transplant patient and the difference that nurses can make along the way. Incorporating these volunteers into the curriculum at Cardiac Boot Camp has been a rewarding experience. Acute care nurses do not always get to witness the fruits of their labor while they care for these patients in the hospital, which is only a portion of the journey. It is very valuable for nurses to see these former patients living complete lives post-transplant and their ability to guide nurses to provide patient- and family-centered nursing care for transplant patients.

# Reducing GI bleeds in VAD Patients after Initiating Home Remote Monitoring

By: Monica Smith, BSN, RN

Ventricular assist devices (VAD) are implanted mechanical circulatory support devices used for those patients who have weakened hearts or heart failure, often used as a bridge to support a patient while waiting for heart transplant. VAD patients have an increased risk of bleeding due to the low pulsatile flow and high shear stress caused by the impeller speed of the VAD itself. They also require anticoagulation and antiplatelet therapy post implant which further increases their risk of bleeding, or, if sub-therapeutic, puts them at an increased risk for thrombosis of their VAD. Once discharged, VAD patients are required to have labs drawn to assess international normalized ratio (INR) a minimum of once a week to ensure the patient's drug levels are at a therapeutic range.

Prior to our project's initiation, VAD patients would have to travel to a lab to get a venipuncture every week to monitor their INR. Because many of the patients go to laboratories outside the UCSD

system (LabCorp, Quest), it may take a few days to obtain results. This process can cause a delay in treatment and anticoagulation dose adjustment. The majority of our patients have limited resources; therefore, frequent trips to labs may pose additional hardships on the patient and their family. In addition to their weekly lab visits, VAD patients also visit the clinic as often as every week to every month to review and assess vital signs, VAD numbers and lab results.

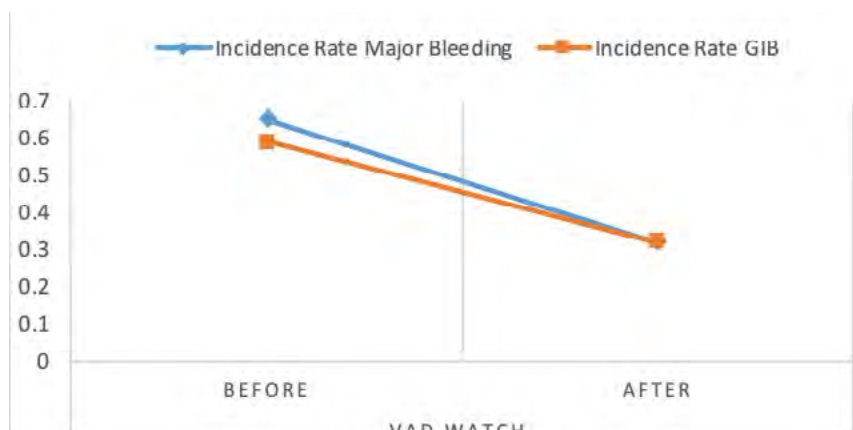
The objective of this project was to enroll each VAD patient into the VADWatch program in order to achieve daily remote monitoring of VAD numbers, vital signs and obtain weekly INRs via point of care (POC) finger stick machines.

With more frequent and real time monitoring, we hoped to reduce the occurrence of gastrointestinal bleeding (GIB) rates in VAD patients as compared to the GI bleeding rates prior to VADWatch initiation. Decreasing the incidence of GIB would reduce the rate of readmission and decrease the use of blood



**Monica Smith, BSN, RN**

is a Clinical Nurse III, VAD coordinator, for the Heart Transplant and VAD program at UC San Diego Health. She started her nursing career as a cardiac ICU nurse in Virginia and quickly fell in love with the heart transplant population. She was recruited by several of the advanced heart failure cardiologists to become a VAD coordinator for their program. With a broadened career as a coordinator, she sought out other VAD coordinator positions throughout the country and landed at UC San Diego over 3 years ago.



products. Reducing the use of blood products is especially important in the VAD patient population as many of them are listed for heart transplantation. Minimizing patient exposure to blood products reduces the risk of human leukocyte antigen (HLA) sensitization, which can further limit their potential donor pool.

To help improve patient outcomes, UCSD partnered with University of California





Figure 1: HeartMate III. Adapted from HeartWare, 2012, retrieved from <https://www.heartware.com/clinicians/instructions-use>.

San Francisco (UCSF) for recommendations on remote monitoring. In a recent study published by UCSF in 2016, they found a 20% reduction in risk of GIB after initiation of VADwatch (Svetlichnaya, et al., 2016).

Before patients are discharged from the hospital, a prescription for Acelis remote monitor is signed with a patient agreement. In the VADWatch program, patients are supplied with an iPad, scale, BP cuff or Doppler and a POC INR machine. Each patient has specific parameters and ranges set based on their baseline. Patients are then expected to log onto VADWatch daily and record their VAD readings, weight, BP, pulse and temperature. They will also obtain a finger stick INR at home weekly or as ordered, then upload the lab value into VADWatch. The VAD coordinators review all entries in VADWatch throughout the workday and discuss any out-of-range entries with a physician. Daily trending of these numbers can give us an early warning of potential adverse events so we can act early and avoid hospital admission.

Data was collected between January 2015 and October 2017. VADWatch was implemented in 50 patients after a median of 113 days post-implant. Prior to VADWatch,

the incidence rate of major bleeding and GIB were 0.65 and 0.59 events per patient year, respectively. After the implementation of VADWatch, major bleeding and GIB incidence rates were reduced by roughly 50% (0.38 and 0.32 events per patient year).

With the increased monitoring and communication with each VAD patient we could further evaluate our data and expect to see a decreased admission rate for GIB due to early intervention and treatment.

In conclusion, among our study VADWatch population, 38% of patients experienced at least one episode of major bleeding, one-third of which were GI bleeds, down from 65% of all VAD patients prior to VADWatch. These results demonstrate a significant decrease in GIB amongst VAD patients after implementation of VADWatch. Based upon these positive findings, the VAD team has decided to continue

to enroll patients into VADWatch with the aim of reducing VAD complications.

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Figure 2: HeartWare. Adapted from HeartWare, 2011, retrieved from <http://www.thoratec.com/medical-professionals/resource-library/ifus-manuals/heartmate-ii-lvad.aspx#>.



# The Future of Lung Transplant

## New Technology Aims to Expand Lung Donor Pool

By: Elizabeth Schonhoft, MSN, FNP-C

Currently, there are approximately 1,345 people listed for a lung transplant in the United States. Lung transplant is the last treatment option for patients with end-stage lung disease, such as cystic fibrosis, pulmonary fibrosis, chronic obstructive pulmonary disease (COPD) and pulmonary hypertension. Unfortunately, there are far more organ recipients than there are donated organs available. This is particularly true in lung transplant where only about 20-30% of donor lungs are utilized for lung transplant (Cypel et al., 2011). Potential organ donors can often be intubated for an extended period of time, which makes the lungs susceptible to damage from mechanical ventilation, infection, blood clots, and pulmonary edema. This results in a scarcity of viable lung transplant organs and, consequently, an approximate 30% waitlist mortality rate for lung transplant recipients (Garijo & Roscoe, 2020).

There have been many strategies trying to counteract the imbalance of available organs and recipients, one of which is the utilization of ex vivo lung perfusion (EVLP). EVLP is a technology developed to expand the lung donor pool (Garijo & Roscoe, 2020). EVLP mimics in vivo physiologic conditions by warming the donor lungs to near normal body temperature while continuing ex vivo lung perfusion and ventilation (Cypel et al., 2011). The lung transplant program at UC San Diego has been utilizing EVLP since early 2019 with the XVIVO Perfusion System™ (XPSTM), the

first FDA approved device for EVLP. XPSTM is a closed circuit system that flushes the donor lungs with STEEN Solution™, which helps to preserve the lungs and eliminate waste products (Figure 1). The XPSTM system is valuable in that it can safely maintain the donor lungs outside of the body, thus enabling the transplant team to perform additional testing, including x-rays, CT scans, bronchoscopies, and arterial blood gases. This testing provides the surgeon and lung transplant team the opportunity to reassess the transplant suitability of the donor lungs.

The utilization of EVLP is a huge advancement in lung



**Elizabeth Schonhoft, MSN, FNP-C**

is the nurse practitioner for the lung transplant program at UC San Diego Health. She earned her BSN at Johns Hopkins University in 2010. She has been working at UC San Diego Health for five years, initially as a lung transplant nurse coordinator. While working at UCSD she completed her MSN at Azusa Pacific University and is now a board certified Family Nurse Practitioner. She serves on the NATCO (The Organization for Transplant Professionals) Thoracic Transplant Committee.

Figure 1.



transplantation. Due to the nature of organ transplantation, lungs are often retrieved before they have recovered from brain death or ventilator-associated injuries (Cypel et al., 2011). Currently, EVLP provides lung transplant teams the opportunity to continue to assess questionable and marginal lungs prior to placing them in a recipient (Van Raemdonck, Neyrinck, Cypel, & Keshavjee, 2015). In addition, one of the priorities of lung transplant is to minimize graft ischemic time. Prolonged graft ischemic time has been associated with post-transplant ischemia-reperfusion injury, primary graft failure, and increased risk of bronchiolitis obliterans syndrome (chronic rejection) (Hayes, Hartwig, Tobias, & Tumin, 2016). EVLP may help to reduce cold ischemic injury and time constraints, potentially allowing transplantation to become

a more planned procedure (Van Raemdonck et al., 2015). This addition of time could potentially help a transplant recipient who requires longer travel time to the hospital, a crossmatch prior to transplantation, or would benefit from additional therapy or treatment prior to transplant. Finally, current research in lung transplantation focuses on utilizing EVLP to repair damaged donor lungs and make them transplantable (Van Raemdonck et al., 2015). This is an exciting prospect as it potentially enables lung transplant teams to use EVLP to repair injured lungs and convert unacceptable donor lungs to transplantable lungs, therefore maximizing the utilization of donor lungs while reducing waitlist mortality.

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# Transplant Medications: Timing is Everything

By: Ashley Feist, PharmD, BCPS

Optimal immunosuppression therapy is a cornerstone to successful transplantation and requires that patients take a complex, lifelong regimen of anti-rejection medications. Without these life-saving medications, we would not be able to perform transplants.

The multidisciplinary team at UC San Diego Health, which includes our transplant pharmacists, works together to optimize medication regimens to improve the survival of patients and grafts. In the immediate post-transplant period, induction therapy is utilized. This involves the use of high dose and more intense immunosuppressive regimens, given over a short course. Medications used for induction include thymoglobulin, basiliximab and high-dose steroids. We also use some of these high-intensity medications to treat acute-rejection episodes after transplant. Patients are transitioned to maintenance immunosuppression for long-term management, which usually includes three different anti-rejection medications. Careful balancing and close monitoring are necessary to avoid the potentially harmful side-effects of these powerful medications and to prevent rejection.

The medication regimens that patients take long-term to prevent rejection are referred to as maintenance therapy. It is tailored to the patient depending on how far out they are post-transplant, the transplant type, and whether they have had any post-transplant complications, including rejection or infection complications. Most

often, these regimens consist of a triple drug therapy comprised of a calcineurin inhibitor (tacrolimus or cyclosporine), an antiproliferative agent (mycophenolate or azathioprine) and a steroid (prednisone). In select patients, we add, or replace one of these medications with, an mTOR inhibitor (sirolimus or everolimus); however, these medications are not used in the early post-transplant phase as they are known to delay wound healing. Common side effects and special instructions or monitoring parameters for each of these medications are listed below in Table 1.

It is very important that patients take the right dose of the immunosuppressant medications at the right time. These medications have a narrow therapeutic index and large inter-patient variability, meaning that each patient requires a different dose to get the same effect of the medication. For these reasons, we check medication blood concentrations in all of our post-transplant patients. In the early post-transplant phase, we check a medication level each day. We target specific concentrations of the medications depending on the type of transplant and length of time post-transplant to achieve optimal outcomes and to prevent toxic side effects or rejection. Below are some tips for helping our team to optimize the administration and monitoring of transplant medications.



## **Ashley Feist, Pharm.D., BCPS**

graduated from University of Nebraska Medical Center in 2005 and completed her residency training at UC San Diego Health. Since completing her training, she has been working as a Pharmacist Specialist in Solid Organ Transplantation at UC San Diego Health focusing in heart and lung transplantation in the inpatient and clinic settings.



### Tips for Transplant Medication Administration and Monitoring:

- Trough levels for tacrolimus, cyclosporine, sirolimus and everolimus should be drawn as a trough level between 0600-0630, prior to the morning dose. Please ensure the level has been collected prior to administering the morning dose.
- Do not draw a level from a line that is infusing or was ever used to infuse IV tacrolimus or cyclosporine.
- Occasionally, a lab draw to evaluate peak levels of tacrolimus or cyclosporine is ordered to help assess the absorption of these medications. Peak levels should be drawn 2 hours after the dose is administered.
- Tacrolimus and cyclosporine are dosed twice daily. Standardized administration times in the hospital are 0700 and 2000 so that it can be administered on an empty stomach (1 hour before meals or 2-3 hours after meals). Food can reduce the absorption by 30-50% and consistency of administration with or without food is very important.

	<b>Name</b>	<b>Strength</b>	<b>Side Effects/Toxicity</b>	<b>Special Instructions</b>
<b>Calcineurin Inhibitors</b>	Tacrolimus (Prograf)	0.5 mg, 1 mg, 5 mg capsules	Headache and tremor Kidney dysfunction Increased blood sugar Nausea Increased BP and cholesterol	<ul style="list-style-type: none"> <li>• Take twice a day, on empty stomach (1hr before eating or 2-3 hrs after eating)</li> <li>• Avoid grapefruit and pomegranate</li> </ul>
	Tacrolimus Ext. Release (Envarsus XR)	0.75 mg, 1mg, and 4mg tablets	High Potassium Hair loss	
	Cyclosporine (Gengraf, Neoral)	25 mg, 100 mg capsules	Kidney dysfunction Increased BP and cholesterol High potassium Increased hair growth Increased growth of gum tissues Increased blood sugar Tremor and headache	<ul style="list-style-type: none"> <li>• Take twice a day, on empty stomach (1hr before eating or 2-3 hrs after eating)</li> <li>• Avoid grapefruit and pomegranate</li> </ul>
<b>Antimetabolite Agents</b>	Mycophenolate Mofetil (Cellcept)	250 mg capsule 500 mg tablet	Diarrhea Nausea/vomiting Decreased WBC	<ul style="list-style-type: none"> <li>• Best taken on empty stomach (if can tolerate)</li> <li>• Separate dosing time of calcium, magnesium, zinc, iron-containing products (including antacids)</li> <li>• Teratogenic – women of childbearing age must be counseled and use approved contraception</li> </ul>
	Mycophenolic Acid (Myfortic)	180 mg, 360 mg tablets		
<b>mTOR Inhibitors</b>	Azathioprine (Imuran)	50 mg tablet	Decreased WBC Nausea/vomiting Elevated liver function tests	<ul style="list-style-type: none"> <li>• Must separate dosing time from cyclosporine by 4 hours</li> </ul>
Sirolimus (Rapamune)	0.5 mg, 1 mg, 2 mg tablets	Delayed wound healing Increased cholesterol Decreased WBC & platelets		
	Everolimus (Zortress)	0.25 mg, 0.5 mg, 0.75 mg, and 1 mg tablets	Anemia Edema Mouth ulcers Skin rash	
<b>Steroids</b>	Prednisone	5 mg, 10mg, 20 mg, 50 mg tablet	Increased appetite Thin skin/bruise easily/acne Restlessness/insomnia Elevated blood sugar Slow wound healing Moon face/fat deposits Mood swings Increased blood pressure Osteoporosis	<ul style="list-style-type: none"> <li>• Take with food to prevent upset stomach</li> </ul>

# A Second Chance: A Patient's Perspective

By: Cyndy Collins MSN, FNP-BC

Liver Transplant is a life-saving procedure and for those waiting for an organ transplant. It is a second chance at life. Organs are offered to potential recipients based on their 'Model End Stage Liver Disease', or MELD, score. This is a score calculated using certain lab values. The score may range from 6-40, with 40 being the maximum score; the higher the MELD score, the sicker the person. People are referred for transplant evaluation once they have a MELD of 15 or higher. Organs are allocated to the

people with the highest MELD score. People who have liver cancer may qualify for MELD exception points, which can boost their MELD score.

People awaiting a deceased donor organ transplant often wait 1-2 years for an organ to become available. In our experience at UC San Diego Health, the majority of liver transplant recipients are very grateful for the precious gift they receive. This patient interview highlights a patient's perspective of his journey through the transplant process and care continuum.



## **Cynthia (Cyndy) Collins, MSN, FNP-BC**

is a Nurse Practitioner on the Liver Transplant Team at UC San Diego Health. She earned her master's degree/NP from University of San Diego. She has over 30 years of experience as a Registered Nurse and over 10 years of experience as a Nurse Practitioner.

She joined the Liver Transplant team at UC San Diego Health in 2008. In addition to being a pre-liver transplant Nurse Practitioner, her experience includes management of post-liver transplant in adults, pre- and post-kidney transplant in pediatric and adult patients. Additionally, she has many years of experience in management including regional director for dialysis centers in Southern California. Most recently she participated in the 12th Annual Evidence Based Practice Institute: Consortium for Nursing Excellence in San Diego on a project geared to raise immunization rates in patients awaiting liver transplantation. She loves to travel to foreign countries, walks on the beach, hiking, Soul Cycle and Orange Theory.



Dalia Iniguez, AA, Aldo Briceno, Cyndy Collins, NP

# Aldo's Story

Aldo Briceno is a 63 year-old male with a history of Hepatitis C and alcohol abuse. Aldo was diagnosed with liver cirrhosis in October 2017 at the same time he learned he had Hepatitis C. Shortly after his diagnosis of cirrhosis, he was diagnosed with Hepatocellular Carcinoma (HCC), a complication of cirrhosis.

In July 2018, Aldo was referred to UCSD for a liver transplant evaluation. He began the arduous liver transplant evaluation process that August. In September, Aldo underwent a Trans-Arterial Radioembolization (TARE) procedure to treat his liver cancer. Tired and overwhelmed by his illness, Aldo and his wife Linda

decided to take the month of October off to travel in their motor home, escape the medical industrial complex and seek solitude.

Unfortunately, Aldo's liver function deteriorated after the TARE treatment. He developed other complications associated with his liver disease. He required regular large volume paracentesis, a procedure used to drain the fluid that accumulated in his abdomen. Additionally, he occasionally felt confused secondary to toxins building up in his blood stream that affected his mental status. His liver was no longer able to effectively perform the vital function of filtering and detoxifying. By Christmas time, Aldo was feeling

quite ill but remained hopeful. He was listed for liver transplant on 12/21/2018.

Although the treatment he received for the liver cancer had been successful in some part, he developed several other small cancers. He was unable to undergo further loco-regional therapy due to worsening hepatic function. He remained within transplant criteria... barely. His window for transplant was closing. He made frequent trips to transplant clinic, had frequent imaging and frequent lab tests. The clock was ticking. On June 19, 2019, Aldo received the call that all patients wait for: A liver had finally become available. It was Aldo's turn to get a second chance at life.



Aldo Briceno before his liver transplant.



Aldo stopping to smell the flowers after liver transplant.

# Aldo's Interview

**NP:** What were you most concerned about while waiting for a liver transplant?

**Aldo:** I worried that we were not going to get a liver in time. "Would there be a liver in time for me to survive? Will my MELD score ever be high enough to get an organ offer"?

**NP:** Sometimes when people are ill they have fears that they keep to themselves. What were some of your fears?

**Aldo:** I was afraid that I would not be able to see my wife, my kids or grandkids. I knew death was a possibility before being transplanted. I was not afraid of dying. I wanted to know how fast my cancer was growing.

**NP:** Describe some of the feelings you experienced during your journey.

**Aldo:** I asked myself why me. What did I do to deserve this? I was in denial at first. I was hoping to hear something different than what was real. I experienced loneliness and sadness. I cried at times. I felt isolated.

**NP:** At what point do you think you accepted your disease?

**Aldo:** I think that I accepted my disease process somewhere in the middle of the road. Likely sometime after my radiation in July. I was confused about the outcome. The radiation I had received for the liver cancer had also [negatively] affected my liver function. I accepted that I was going to die.

**NP:** How did your illness affect your day to day life?

**Aldo:** My illness affected my life tremendously. I could no longer do the things I enjoyed doing. I could no longer work in my yard due to my exhaustion. I was unable to run. I could no longer tolerate being out in the sun.

**NP:** Tell me about what you had to give up because of your illness and how that impacted your life.

**Aldo:** My dream was to retire and travel in my RV. I retired and was diagnosed with liver disease and found out that I had liver cancer. Travel was put on hold. Many aspects of my life were put on hold.

**NP:** How did your illness affect the important people in your life?

**Aldo:** It's really funny how my illness affected the people in my life. Some of my family and I grew closer together. My brother and his wife came every weekend from Cerritos to see me. I know it was a hardship for them but they came anyway. My wife worried and still worries about me often.

**NP:** What goals do you have in your life now?

**Aldo:** My goal is to enjoy people every day. Live life to the fullest every day. Do not harbor hate. Be forgiving.

**NP:** What would you like to say to your audience and to other people waiting for an organ transplant?

**Aldo:** Be thankful. Be happy. Don't take anything for granted. Accept your illness and be at peace with yourself. Be honest with yourself. If you don't make it to transplant, there is another world. A spiritual world. If you believe in God, you will be in heaven. Faith will get you through.

I want to give a special thank you to Dr. Vodkin for taking care of me. She is an amazing doctor. I'd like to thank the entire team for caring for me. Everyone has been awesome! The nurses in the hospital never missed a beat. I was embarrassed when they had to clean me up. The nurse never batted any eye, while all along saying "no worries, it's my job".

**NP:** Now that you were given a second chance at life, tell me what you are doing with your life?

**Aldo:** I am giving back! I am caring for a 79 year old friend of mine that has colon and liver cancer. He has chosen not to pursue any medical treatments. I visit him every day. I cook for him. I clean his kitchen for him. Most of all, I keep him company so that he is not alone.

I get out and work in my garden. Something I really enjoy doing.

I plan to write a letter to my donor family to express my gratitude for this wonderful gift that I was given.

Caregivers are an integral part of the transplant process. Each transplant candidate must have a committed caregiver and a solid care plan prior to being listed for liver transplant. Aldo's spouse Linda was his caregiver. She shared the following:

**Linda:** First of all, I want to say that it was an honor to take care of Aldo. It was the hardest thing I have ever done. I had experienced some tragedy in my life when I was younger and thought to myself, this cannot be that difficult. It was very tiring. I seriously had no idea how much work was involved until I did it. No matter how many times I was told that caring for a transplant patient would be difficult and a lot of work, I did not really understand that until I did it. It was frustrating. I often times wondered if I was doing things right and was I doing enough. Waiting and waiting was scary and frustrating.

If I had to give someone else advice about the process I would say: use your resources. Allow other people to help. Do not try to do this all by yourself. Ask a lot

of questions. I was very thankful that I was able to call the transplant team while we were waiting and ask questions. If we lived closer to UCSD, I think it may have been a bit easier. I could not have done this without the support I received from the team. The reward outweighed the frustration. It was all worth it. We are putting our lives back together. I would do this all over again if needed. I would say to anyone going through this, appreciate everyone. To the women who cleaned Aldo's hospital room every day, thank you. To the employee in the cafeteria who made sure I ate every day and showed concern for me, thank you. To the nurses who cared diligently for Aldo every day, thank you. To the surgeons, all the doctors, student doctors and nurses, we appreciate you all.



# Words of Acknowledgement

## for Transplant Nurses from our Solid Organ Transplant Physician Team

Our organization enjoyed tremendous success in the transplant arena over the last few years with 2019 being the year when several transplant programs set the record for the most transplants ever done at UCSD with amazing outcomes. This feat was made possible by tremendous commitment of every member of the transplant team and our nurses in particular.

They have taken care of the numerous sickest, most challenging patients, that were deemed “non-survivable” by outside hospitals. These are the nurses who sometimes literally carried physically debilitated patients during the Physical Therapy sessions, who stayed after their shifts were over to make sure the patients did OK, that woke up in the middle of the night to come in and to take care of the patients on ECMO, that followed with the challenging patients and to make sure their immunosuppression plans were carried out to perfection. Our nurses also contributed greatly to the fund of knowledge and research in the transplant arena as demonstrated by the articles published in this issue of the journal. All UCSD Transplant teams celebrate the success of 2019 and are looking forward to 2020 with confidence supported by the quality of nursing staff taking care of our transplant patients.

### **Eugene M. Golts, MD**

Associate Clinical Professor  
Division of Cardiovascular and  
Thoracic Surgery

We want to express our deepest gratitude to our nursing teams both on the inpatient and outpatient side. There is a tremendous amount of effort that goes into getting a patient through the transplant process and our nursing colleagues are amazing at doing this. For patients, their nurse coordinator is their link to the transplant center while they wait months and years for transplant. These nurses form incredible bonds with their patients as they guide them through their transplant process. Our post-transplant nursing team tirelessly works to help patients understand their complicated medication regimens and educate them on how to keep themselves healthy. The UCSD transplant programs are thriving and our patients are thriving along with it- it could not be done without our amazing nursing colleagues.

### **Mita Shah, MD**

Medical Director, Kidney Transplant and  
Living Donor Kidney Transplant Program

We want to congratulate our nursing teams at UCSD with this publication and express our sincere appreciation for the care they have provided our patients. We know that caring for the sickest of the sick and facing situations with little or no hope can weigh heavy on our nursing staff. It is when faced with these situations that the real human nature of caring for and nursing the sick back to health shine through the brightest. UCSD transplant teams boast some of the best outcomes in the nation and we acknowledge that this is in no small part due to excellent nursing care. The future is bright if we give our unbridled attention to our patients. The reward of nursing the sick back to health is worth it!

### **Victor Pretorius, MBChB FRCS**

Professor of Clinical Surgery  
Division of Cardiovascular and Thoracic Surgery  
Surgical Director Heart Transplant and MCS Program  
University of California, San Diego

Organ transplantation epitomizes the need for team medicine and our nurses are the patient's advocate as they navigate the complexities of transplant. Numerous liver transplant candidates at UCSD with limited resources have been supported through successful liver transplantation largely due to the attentiveness and dedication of our nurses. Our nurses are patient, approachable and empathetic and always go above and beyond to support our patients. It is an honor to work alongside our exceptional nursing colleagues to care for our transplant patients.

### **Veeral Ajmera, MD, MAS**

Assistant Professor of Medicine  
Medical Director of Liver Transplantation  
Division of Gastroenterology and Hepatology

We are so proud of our transplant program which saved over 300 lives last year. This is not only a record number of transplants for UC San Diego but a record for a program in San Diego as well. This is only possible because of the dedication and competence of our transplant nurses in the pre, peri-operative and post-operative arenas. We want to recognize our nurses for the tremendous efforts they have put in to provide exceptional care for our patients. Our whole team realizes that transplant care often requires personal sacrifice and time away from our families and friends to make successful, and we truly appreciate and applaud our nurses for that commitment.

### **Kristin Mekeel, MD**

Transplant and Hepatobiliary Surgeon,  
Chief, Division of Transplant and  
Hepatobiliary Surgery, Surgical  
Director, Kidney and Pancreas  
Transplantation, Professor of Surgery

### **Gabe Schnickel, MD, MPH**

Transplant and Hepatobiliary Surgeon,  
Surgical Director, Liver Transplantation,  
Associate Professor of Surgery

### **Jennifer Berumen, MD**

Transplant and Hepatobiliary Surgeon,  
Director of Living Donor Kidney  
Transplant, Assistant Professor of  
Surgery

### **Justin Parekh, MD**

Transplant and Hepatobiliary Surgeon,  
Associate Professor of Surgery

# We proudly recognize...

## DEDICATION TO IMPROVING THE QUALITY OF TRANSPLANT NURSING CARE: QI PROJECTS, AWARDS, AND PASSION

**Stephanie Ta, BSN, RN**, Kidney Transplant Coordinator, successfully completed her CNIII Project. Her project focused on pre-kidney transplant coordinators triaging after-hour phone calls of post-kidney transplant patients. Pre-coordinators have not received formal education/training to triage these patients. To improve pre-coordinator knowledge in post-transplant, she collaborated with post-coordinators, transplant nephrologists, and our pharmacist to develop triage guidelines. She then coordinated a pharmacy in-service with the pharmacist to educate pre-nurses on immunosuppression and diabetes management. Post intervention (2/12/19-5/13/19) 46% of after hour calls were handled by use of the guidelines vs. the physician, representing nearly a 50% decrease in physician calls. 100% were handled appropriately without patient safety concerns. There was a statistically significant improvement in pharmacologic knowledge (61% vs. 96%  $p=0.001$ ). Coordinators rated the tools as helpful (100%,  $n=9$ ).

Recently, **Cyndy Collins, NP**, and post-kidney transplant nurse coordinator Nicole Champagne participated as mentor and fellow in the 12th Annual Collaborative Evidence-Based Practice (EBPI) Conference. Together they implemented a protocol to increase pneumococcal vaccinations in pre-liver transplant patients prior to solid organ transplant (SOT). Implementation of the protocol resulted in increased rates of pneumococcal vaccinations in pre-liver transplant patients listed for liver transplant. Vaccinating patients prior to transplant is important because it provides greater seroresponse as patients are not yet on post-transplant immunosuppression medications. Additionally, it provides protection post-transplant when patients are most vulnerable, and effectively provides a reduction in morbidity and mortality related to vaccine preventable diseases.

## MICHAEL G. CHUA: NKR 2019 EXCELLENCE IN TEAMWORK AWARD

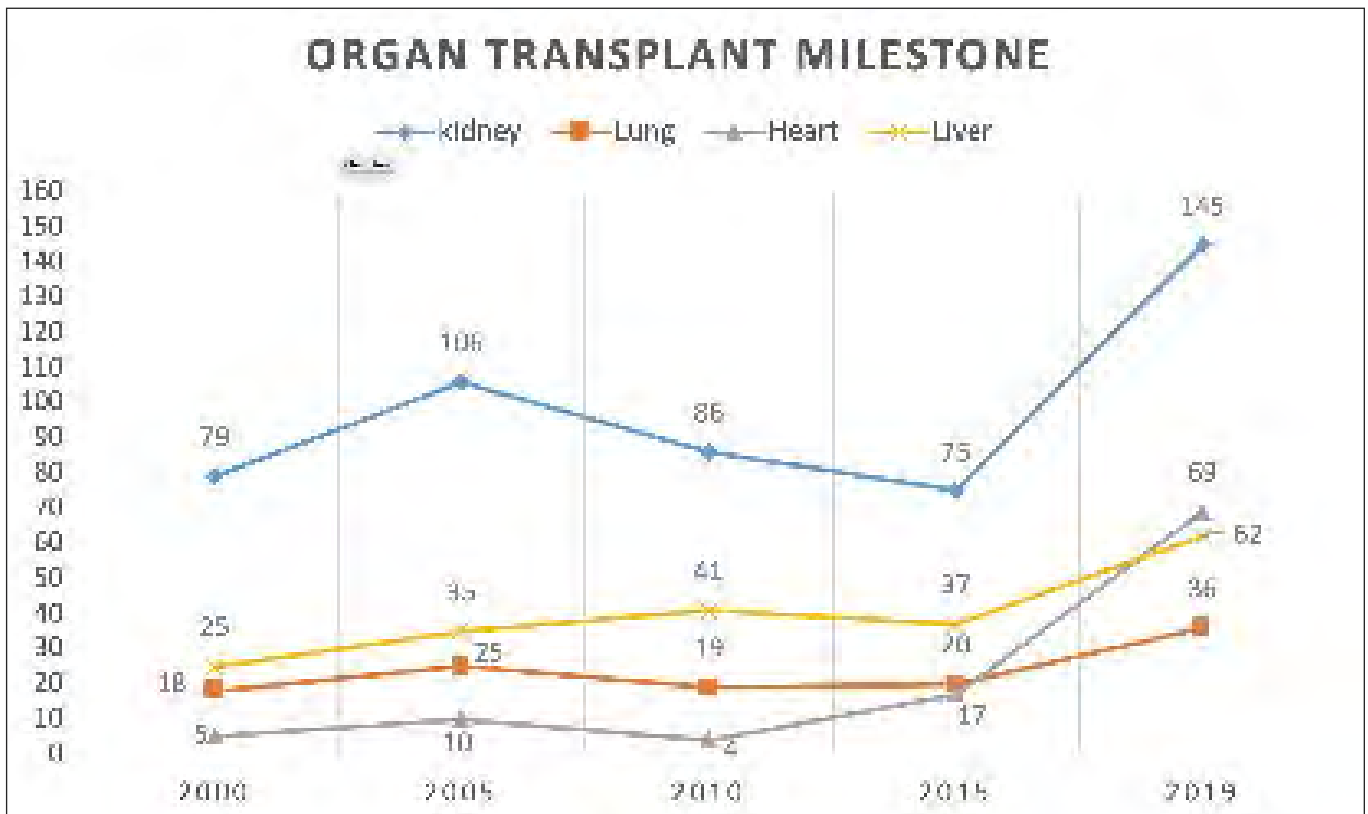


On June 27th, 2019 UCSD's Living Donor team were among 8 centers being honored with the NKR Excellence in Teamwork Award 2019. The Excellence in Teamwork Award goes to the member centers who, through exceptional coordination and communication, went above and beyond demonstrating excellence in teamwork for a complex kidney swap. The 2019 NKR Excellence in Teamwork Award went to 8 centers that completed one of the most challenging swaps during the past year. Swap# 1448 involved 14 surgeries and multiple chain repairs which resulted in 7 life-saving transplants. The award was presented during the NKR annual **Season of Miracles Awards Gala** at the legendary **Rainbow Room** in New York City. Accepting the award on behalf of the UCSD Living Donor team was Michael G. Chua, Living Donor Coordinator RN.

Pictured: Living Donor- Alejandra Munoz, Surgical Director of Living Donation- Dr. Jennifer Berumen, and Living Donor Coordinator RN- Michael G. Chua

## UC SAN DIEGO HEALTH SOLID ORGAN TRANSPLANT PROGRAM MILESTONE

Organ	First Transplant	Year 2000	Year 2005	Year 2010	Year 2015	Year 2019
Kidney	1968	79	106	86	75	145
Lung	1990	18	25	19	20	36
Heart	1990	5	10	4	17	69
Liver	1993	25	35	41	37	62





**Organ Transplant Nursing**  
*Embrace the vision. Join UC San Diego Health.*

UC San Diego Health

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For more information about nursing at UCSD, log on to our nursing website at  
<https://health.ucsd.edu/medinfo/nursing/pages/default.aspx>