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Kidney & Pancreas Transplant Program

Kidney Review

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CONTENTS

- 2 *The Final Tests Before Transplant*
- 3 *A Kidney-Pancreas Transplant Inspired Him to Help Others*
- 4 *Getting Back to Work After Transplant Surgery*
- 5 *Surgical Obstacles to Kidney Transplantation*
- 6 *The Panel Reactive Antibody Test*
- 7 *Average Wait Times for Kidney Patients*
- 8 *New San Francisco and North Coast Transplant Coordinator Eases Transplant Process*

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What Happens Following Kidney Transplant Surgery?

by Krista Pollock, R.N., Kimi Ueda, Pharm.D., and Laura Miyashita

PREPARATION FOR A KIDNEY TRANSPLANT not only includes being prepared for the surgery itself, but also knowing what to expect during the hospital stay and recovery period.

“Education is a major component of a patient’s hospital stay following transplant,” says Krista Pollock, R.N., inpatient coordinator for California Pacific’s Kidney Transplant Program. “Before an individual can leave the hospital, we want to be sure he or she knows about all the medications and their dosing schedule, the signs of rejection,

the importance of lab work, and how to eat healthy and heal well,” says Pollock.

Hospital Stay Lasts Four to Seven Days

In the four to seven days that an individual is usually hospitalized following transplant surgery, Pollock and the kidney team focus on education, walking and nutrition. Usually after transplant surgery, patients are in the intensive care unit (ICU) for 12-48 hours. After the ICU stay, transplant patients move to a hospital floor at California Pacific with a dedicated transplant nursing staff.

Education Vital to Transplant Success

“During the teaching that occurs post-transplant, it is critical to have a support person who can also hear what to expect,” explains Pollock. “We encourage patients to let us know if there is a particular way in which they learn best.” The most important elements of what to expect post-transplant include:

Medications help your body adjust to your kidney—Anti-rejection drugs prevent your body from rejecting the transplanted kidney. The majority of patients go home taking two to three immunosuppressants and four prophylactic medications. The prophylactic drugs help prevent fungal, bacterial and viral infections, as well as ulcers.

California Pacific’s Transplant Pharmacist

After Surgery, continues on next page



During the four to seven days one is in the hospital after a kidney transplant, recovery includes learning about medications, lab work and rejection signs.

The Final Tests Before Transplant

Histocompatibility Lab Conducts Heroic Efforts to Find Transplant Matches

by Steve Katznelson, M.D. and Laura Miyashita

IT IS THE MIDDLE OF THE NIGHT and the transplant coordinator has just called to tell you that there “may” be a kidney available for you. You are put on “alert.”

While you are waiting, vigorous testing is being performed by California Pacific’s Histocompatibility Lab (otherwise called the HLA or Tissue Typing Lab) in San Francisco. This testing will ultimately determine your compatibility with a kidney donor. Once you are identified on the waiting list as a possible recipient of a particular deceased donor kidney, a “first phase” crossmatch is done.

First Phase Compatibility Screening

A crossmatch is a test that identifies the presence of antibodies in a recipient that could damage or destroy a transplanted kidney if the transplant were to proceed.

•**Positive crossmatch** means that such antibodies have been identified and

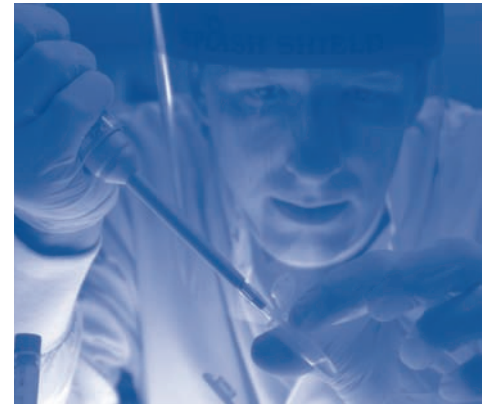
that transplant should not take place.

•**Negative crossmatch** means that no damaging antibodies are identified and thus the transplant is a “go.”

The first phase testing is a screening test performed on dozens of potential recipients at the top of the waiting list. For patients who are unsensitized (do not have high levels of PRAs; please see accompanying article) and have a negative first phase crossmatch, the one with the most waiting time will be offered the kidney.

Second Phase Compatibility Screening

For sensitized patients, a “second phase” crossmatch is necessary. This crossmatch takes about four hours and uses a technology termed “flow cytometry.” Flow cytometry identifies smaller amounts of antibodies that could cause rejection. In sensitized patients, even this small amount of antibody could cause



The team at California Pacific Medical Center’s Histocompatibility Lab performs vigorous testing to determine your compatibility with a kidney donor

problems. Again, the patient with a negative second phase crossmatch who has the most waiting time will be offered the transplant.

California Pacific’s Histocompatibility Lab has technologists on call 24 hours to perform these tests. These dedicated individuals are often up all night performing first and second phase testing to help identify the proper recipient for a kidney. Speed and precision at the lab are essential to making a transplant occur.

Once the crossmatches are complete and negative, your “on alert” status may change to a “come on in” status. The journey has begun!

After Surgery, continued from previous page

Kimi Ueda, Pharm.D., helps educate patients about the dosing and side effects of their new medications. “Upon discharge, a transplant recipient leaves with a one-month supply of medication needed for the new kidney. After that, it is the patient’s responsibility to order the medication supply, allowing at least a week for refills before the prescription runs out.”

Ueda and Pollock caution patients against taking herbal supplements and ask that they contact their nurse coordinator before starting any new medications, in case there are interactions with the transplant drugs.

If something feels wrong, call us—

The Kidney Team urges patients to trust their instincts post-transplant, and to call if anything feels wrong. Common signs of rejection include increased pain over the kidney, decreased urine output, sudden weight gain, or general flu-like feelings with fever. Patients should also call if they encounter persistent nausea, vomiting and diarrhea.

Follow a heart healthy diet with plenty of fluids—A low-fat, low-cholesterol, heart healthy diet will help your kidney function. “The biggest change from a dialysis diet is that most successful kidney transplant

recipients need to increase the phosphorus in their diet and drink at least two liters of fluid a day,” explains Pollock.

Walking helps recovery—During the hospital stay, transplant recipients are expected to walk daily. This continues upon one’s return home. For 4-6 weeks after transplant, restrictions are placed against lifting more than 10-15 pounds and against fishing, golfing, hunting or other activities that involve swinging. Driving can resume 2-3 weeks after transplant, as long as the individual isn’t taking pain medication.

A Kidney-Pancreas Transplant Inspired Him to Help Others

by Laura Miyashita

MICHAEL KENNEDY, a 46-year old Sacramento area father of six, was diagnosed with Type I diabetes in 1987. His family had a long history with diabetes, as it had claimed the life of his father, grandfather, aunt and uncle. "I continually went to my nephrologist and was cautious about my health, but didn't have any real problems," says Michael. In 2004, however, that changed. Michael experienced blurred vision, swelling and fluid overload due to kidney failure.

He describes his kidney failure, which landed him in the emergency room for eight days, as a "very scary experience." After his condition stabilized, Michael learned that he would need to start dialysis. "I had a little depression when I started dialysis, but tried to look at

it as another bump in the road," explains Michael, who has always led an active life. He maintained a full-time job while on dialysis, coming to the clinic from 5:00 – 9:00 a.m., during which he would sleep, then working a full day afterwards.

Shortly after he started dialysis, Michael was listed for a kidney-pancreas transplant at UC Davis Medical Center. Upon learning from his dialysis physician that he could be on another list, he pursued an evaluation

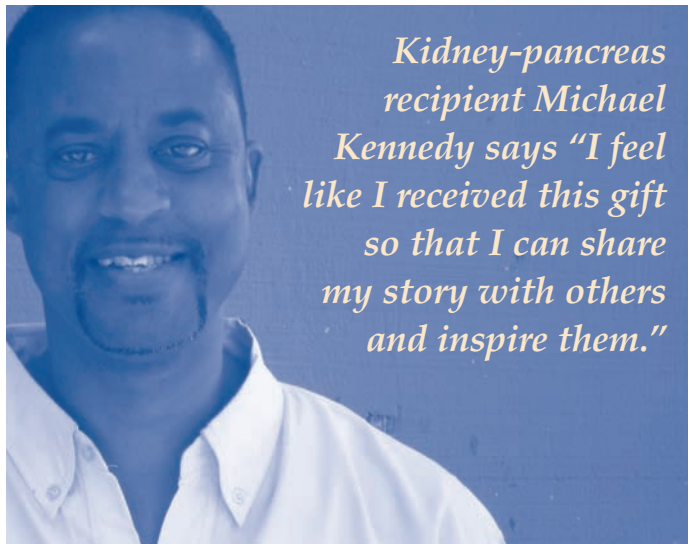
at California Pacific Medical Center, which is part of a different organ procurement organization (OPO) than UC Davis. "During my evaluation at California Pacific, the transplant nephrologist told me he thought I could get a kidney-pancreas transplant within six months," explains Michael. "That news gave me faith that it would happen."

On December 28, 2006 Michael received a call at 2:54 a.m. from the nurse at California Pacific Medical Center telling him that a kidney and pancreas had become available. Within three hours he was in San Francisco, getting prepped for his transplant surgery. "It is awesome what medical professionals can do," says Michael. "My quality of life is now excellent—I'm free! I don't mind taking pills or getting my labs done since that's better than four hours a day on dialysis," he says. Other benefits of the transplant include enjoying cake and soda—foods that were previously off-limits.

"Based on my experience, the nurses, doctors and even environmental service staff at California Pacific are number one!" Michael exclaims.

"Everyone was very nice and friendly during my eight days in the hospital, and I applaud them for their hospitality—it was a great experience."

Today, Michael still visits his friends in dialysis, trying to inspire them to consider transplantation. "I feel like I received this gift so that I can share my story with others and inspire them," he explains. "All things are possible in life, and one shouldn't just settle." Most of all, Michael is profoundly grateful for God and his family and friends, who kept him in prayer during this ordeal as well as his donor and donor's family, who made his transplant experience a reality.



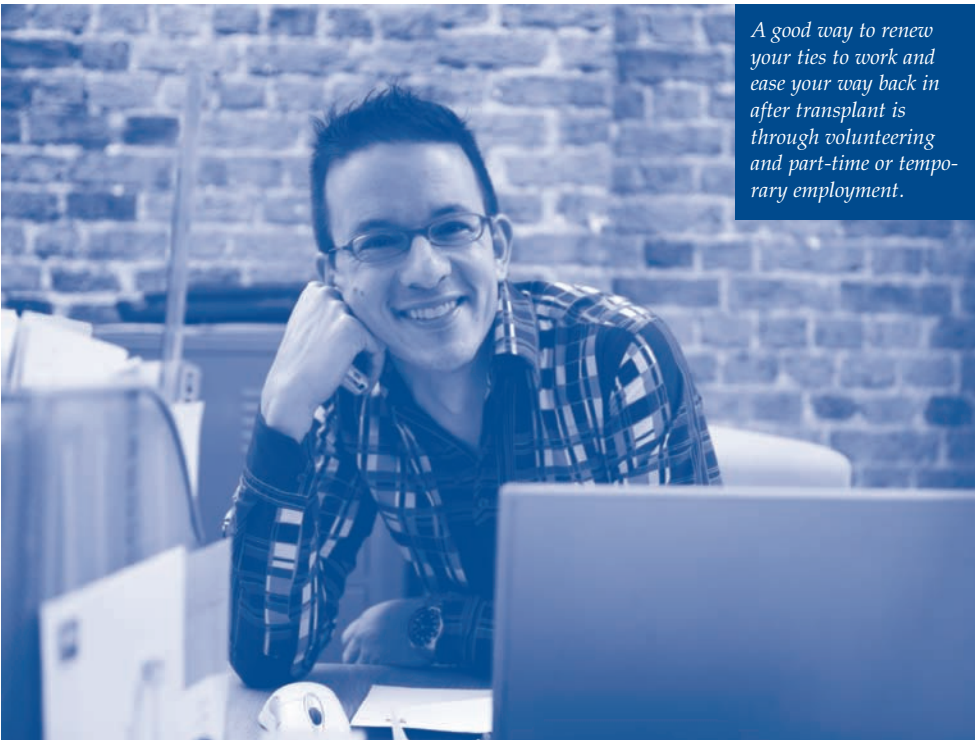
Kidney-pancreas recipient Michael Kennedy says "I feel like I received this gift so that I can share my story with others and inspire them."

Practice safe sex—Sexual activity can resume after one's surgical wounds are well healed, but practicing safe sex is essential. Pollock advises patients to urinate before and after intercourse to avoid urinary tract infections, and to wait one year after transplant before trying to conceive. "Some transplant medications are contraindicated for pregnancy, so it is important that you talk to your transplant team before trying to conceive," she says.

Labs and clinic visits keep your new kidney in check—Lab work is a critical part of the transplant process. Upon discharge from the hospital,

individuals need to go to a lab close to home twice a week for the first two months. Following this time, labs are still critical, but the frequency diminishes. Additionally, patients are expected to return to California Pacific in San Francisco two to three weeks after transplant to meet with the kidney team. Subsequent visits can be at one of our outreach sites.

For more information about what to expect following transplant, see our manual, "Living With Your New Transplant" at: <http://www.cpmc.org/advanced/kidney/patients/default.html>



A good way to renew your ties to work and ease your way back in after transplant is through volunteering and part-time or temporary employment.

activity. Some options in easing back into work life include:

- Work part-time or temporarily
- Volunteer
- Change careers starting with re-education
- Return to previous employer if you have remained in contact

Maintain Health Insurance

For all transplant patients, it is important to maintain health insurance coverage before and after transplant. Medicare only lasts 36 months after a kidney transplant, unless the patient has turned 65 or has another disabling condition which entitles him/her to it. After 36 months, patients are expected to secure private insurance through their employer, a spouse's employer or, if he or she qualifies, from Medi-Cal.

"Ultimately, it is the patient's responsibility to keep their insurance active, but the last thing we want to see is a person losing their kidney because they cannot afford their medications," says Alexandria Nicolai, LCSW, of California Pacific's Kidney Transplant Program. "As social workers, we do everything in our power to help counsel patients to find insurance and point them in the right direction for financial assistance."

Getting Back to Work After Transplant Surgery

Planning Ahead Will Help in Transition from Transplant Surgery to Employment

by April Ellis, MSW, Alexandria Nicolai, LCSW and Christina Szeto

ALTHOUGH GETTING BACK TO the daily grind at your job might not be at the very top of your to-do list following transplant, perhaps it should be. Job planning while on dialysis and staying in a positive mindset can significantly help your transition to post-transplant life. Outcomes for those who start the planning process early prove greater in terms of employment success and maintaining insurance.

"Following months on dialysis, transplant surgery, and ultimately recovery, many patients question whether they will be able to get employed after all that time off," says April Ellis, MSW of California Pacific Medical Center's Kidney Transplant Program. She says, "The good news is, everybody is employable."

Forward-Thinking Helps Process

Ellis encourages making small goals and using available resources throughout the entire process.

"Planning and dreaming while on dialysis helps to motivate patients in thinking about life after transplant. It is very important to remain forward-thinking," she says. Small goals on a daily basis can include assessing your skills and abilities, exercising regularly, making contacts, connecting with friends and family, or practicing interviewing. Dialysis unit and transplant center social workers are available to support and advise in the process.

Typically, some patients can return to work in six weeks after transplant. Initially, it may be necessary to engage in modified work

Here are some useful Web sites and phone numbers to assist you in your planning:

Web sites:

www.disabilitybenefits101.org
www.onestops.info
www.earnworks.com

Phone Numbers:

(all for California Pacific's Kidney Team)

Kidney Transplant Nurse Coordinators and Doctors—415-600-1000
Vocational Department—415-600-6521
Social Workers—415-232-1366

Surgical Obstacles to Kidney Transplantation

Keeping Your Weight in Check Helps Transplant Surgery

by William Bry, M.D. and Laura Miyashita

WHEN AN INDIVIDUAL undergoes a kidney transplant evaluation at California Pacific Medical Center, the Kidney Team reviews his/her past medical history to identify areas of concern. In some cases, issues arise that may interfere with the transplant surgery. Many of these issues are correctable with collaboration between the patient and transplant team.

Obesity Can Create Transplant Risk

“Obesity is a common problem affecting transplant surgery,” says William Bry, M.D., surgical director of California Pacific’s Kidney Transplant Program. “Severe and morbid obesity are associated with a lower chance of receiving a kidney, according to a recent study in the *Journal of the American Society of Nephrology*. While we are able to transplant heavier patients, it becomes too risky above a certain point,” he explains

Obstacles in transplanting obese patients include a higher prevalence of wound infections and difficulty in accessing and connecting the blood vessels to other structures during surgery because of excess fat and tissue.

“We use one’s BMI, or body mass index, as a rough guide to identify patients who need to lose weight before we can transplant them,” says Bry. The BMI combines a person’s weight and height to identify his/her ideal body weight and how high above it he/she may be. “Morbid obesity is defined by a BMI above 36, which is our cutoff for kidney transplant



“We want to see our patients succeed—even a modest weight loss of 20 to 30 pounds can make a big difference in our ability to carry out kidney transplant surgery.”

acceptability,” says Bry. He cautions that since people carry extra weight in different parts of the body, the BMI does not always correlate with the team’s ability to do the surgery. If the excess weight is carried in the stomach, surgery may not be possible; whereas it may be if the weight is evenly distributed throughout the body.

If weight loss is needed, the Kidney Team advises patients to work with their dialysis unit’s dietitian to develop a diet and exercise program. Additionally, California Pacific will provide free access to one’s local Weight Watchers program. “We want to

see our patients succeed—even a modest weight loss of 20 to 30 pounds can make a big difference in our ability to carry out kidney transplant surgery,” says Bry.

Vascular Disease Complicates Surgery

During kidney transplant surgery, the team connects one’s kidney to the circulation and bladder. If one has vascular disease or bladder dysfunction, it complicates this surgery. “Kidney failure is associated with many conditions—such as hypertension, hyperlipidemia, diabetes and alterations in calcium and phosphate levels in the blood—that promote vascular disease or atherosclerosis,” says Bry.

Obstacles, continued on page 7

To calculate your BMI, visit www.sutterhealth.org/health/bmi_calculator.html



SCIENCE CORNER:

The Panel Reactive Antibody Test

High Antibody Levels (PRA) Can Impact Waiting Time

by Steven Katznelson, M.D. and Laura Miyashita

PANEL REACTIVE ANTIBODY (PRA) testing is one of the more important tests routinely performed on patients awaiting kidney transplantation. For patients on dialysis awaiting transplant at California Pacific, your dialysis unit sends our transplant lab—the Histocompatibility Laboratory—a single red-top blood tube every one to three months. If you are awaiting transplant but not yet on dialysis, you should receive a blood tube kit regularly to send to our lab.

Test Measures Antibody Levels

“PRA testing measures the presence of certain antibodies that may exist in a patient’s blood,” says Steven Katznelson, M.D., medical director of California Pacific’s Kidney & Pancreas Transplant Program. “These antibodies are directed against foreign human leukocyte antigens (HLA)—the same antigens involved in matching recipients with prospective donors. Patients who have these PRA antibodies are termed ‘sensitized.’”

There are three main causes of PRA development:

- blood transfusion
- pregnancy
- previous transplants

Not all patients who have experienced one or more of the above will develop PRAs. The only way to find out is to perform this test.

High PRA Impacts 30% of Patients Awaiting Transplant

The percentage of patients awaiting kidney transplantation with high



Blood tubes are sent to California Pacific’s Histocompatibility Laboratory to measure the presence of certain antibodies. High antibody levels may mean a longer wait for a transplant.

PRA levels has decreased over the last two decades. This is to a great degree because of the development and use of erythropoietin (Procrit®, Epogen®, Aranesp®, etc.), which has decreased the need for transfusions among patients with end-stage renal disease.

Nonetheless, about 30% of patients awaiting kidney transplantation in the United States have high PRA levels. Although over time PRA levels may decrease, they may persist for a long time. Katznelson explains, “It is not possible to determine which of these antibodies will persist and which will not. This is one reason why regular testing is necessary.”

Longer Wait Times Addressed by UNOS

The presence of high PRA levels has a number of consequences. It is more difficult to find a compatible donor for patients with high PRAs. This unfortunately means that patients with high PRA levels will wait, on average, longer than patients who are not sensitized.

In order to better understand this, it is helpful to understand that PRAs are measured as a percent. As an example, a patient who has 70% PRAs will, on average, not be compatible for transplant with about 70 out of 100 potential donors in

New technologies exist that can help decrease PRA levels in some patients, rendering them more likely to be transplanted. This technique, called desensitization, uses certain drugs and/or plasmapheresis.

his/her blood group. Thus, the higher the PRA percentage, the harder it is to find a match. To help address this problem, the United Network for Organ Sharing (UNOS) has recently decided to award extra “points” to patients on the kidney transplant waiting list with PRAs at or above 80% so that these highly sensitized patients will have a fighting chance for a transplant offer.

“We also know that patients with high PRA levels for whom we have found a compatible donor are more likely to have acute rejection episodes,” says Katznelson. “For this reason, these patients are usually treated with an enhanced anti-rejection medical regimen while in the hospital to try to reduce their rejection risk.”

New technologies exist that can help decrease PRA levels in some patients, rendering them more likely to be transplanted. This technique, called desensitization, uses certain drugs and/or plasmapheresis. “Though exciting, this technology is beneficial to only a small number of sensitized individuals. We are hopeful that newer technologies will soon be discovered that will further diminish the impact of PRAs on kidney transplantation.”

Average Wait Times for Kidney Patients

by Laura Miyashita

ACCORDING TO California Pacific Medical Center data for kidney transplants that occurred in 2006 and 2007, the average wait time for a deceased donor kidney transplant is 3.7 to 4.5 years. For patients who qualify for an extended criteria donor (ECD) kidney, the average wait is one to three years. An ECD kidney is defined as a kidney from a donor over age 50 with two of three high-risk criteria:

- high blood pressure
- stroke or
- elevated creatinine level

Also included in the ECD definition is any donor over the age of 60.

		DONOR TYPE	
		Deceased Donor	Extended Criteria Donor
BLOOD TYPE	A	3.7 years	1.5 years
	AB	4.1 years	2.4 years
	B	4.5 years	2.8 years
	O	4.5 years	3.1 years

* Average wait time for patients receiving transplants from 2006–2007 combined, to reflect more accurate info for ECD kidneys.

Obstacles, continued from page 5

“All of these conditions must be under control to proceed with the transplant.”

If blockages exist in the arteries, there may not be enough blood flow to keep the kidney transplant healthy. “If there are signs of reduced circulation we may ask one to undergo diagnostic tests to see if the transplant will be possible,” says Bry. “If one’s circulation is impacted, we may need to take steps to improve it to safely accomplish the transplant surgery.”

Since smoking is a strong contributor to vascular disease, the Kidney Team requires that all kidney transplant candidates stop smoking. Studies have even shown that smokers have lower success rates with transplantation.

Bladder

If one’s bladder does not work before the transplant, its function will likely be impaired afterwards. Patients with bladder emptying problems caused by nerve damage, large prostates or infections need special attention to ensure a successful transplant. In rare circumstances, an artificial bladder may be constructed to help the new kidney. As with most things, identifying potential problems ahead of time and solving them helps ensure a complication-free transplant.

Your kidney transplant starts at the initial evaluation. By careful planning, the Kidney Team can anticipate problems which may arise later and correct them before surgery occurs. As the saying goes, an ounce of prevention is worth a pound of cure!

New San Francisco and North Coast Transplant Coordinator Eases Transplant Process

by Laura Miyashita



CALIFORNIA PACIFIC'S KIDNEY TEAM IS PLEASED TO WELCOME San Francisco and North Coast Outreach Coordinator Susan Reid, R.N. In this role, Susan works with staff and patients at dialysis units in San Francisco and the North Coast to provide education and assistance surrounding transplant.

Susan has worked at California Pacific Medical Center for more than 20 years and most recently served as a unit supervisor for Post Acute Services. In this role, she was responsible for the day-to-day operations of a 36-bed inpatient unit, including patient care and staff supervision. Susan has also held positions as a case manager and a discharge coordinator in the areas of medical-surgical, ortho-surgical and oncology. Susan received her nursing degree at Kentucky Baptist School of Nursing in Louisville, Kentucky.

If you reside in San Francisco, South San Francisco, Daly City, Marin, Petaluma, Santa Rosa, Napa, Eureka, Redding, Red Bluff, Clearlake or cities in that vicinity, or work at a dialysis unit in these locations, please contact Susan at 415-912-8845 or reids@sutterhealth.org for kidney transplant evaluations or further information about California Pacific's Kidney Transplant Program.

Susan Reid, R.N. works with staff and patients at dialysis units in San Francisco and the North Coast to provide transplant education and assistance.



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