My wake up call came in 1969 when I was 21. I went on a job interview with a big name company and was hired pending a background check and a physical. Unfortunately, the physical showed blood in my urine and I was not hired. The cause of the blood in the urine was Lupus, but at 21 that didn’t seem like such a big deal other than it caused me to lose a job I wanted.

Within a year I understood how significant Lupus could be. I lost total function of my kidneys and I ended up at Albert Einstein Medical Center in Philadelphia, which had two dialysis machines and eight kidney patients. At the time I was the only female patient. We didn’t have fistulas in our arms; we had shunts and we were on dialysis three times a week for six-hour treatments. The equipment looked like big washing machines.

I had a truly wonderful, supportive family that had always been and still are there when I need them. That year my brother Frankie, one of my three brothers, donated his kidney to me and it worked terrifically for three months. Then, either through a mass rejection or attack of Lupus, I lost the transplant.

It was another year on dialysis before a cadaver kidney was found. A fatal car accident took the lives of a mother and daughter. The donor family, who had thought of donation during the trauma of losing their loved ones, also stayed at the hospital to donate blood for my transplant. That was 1969 and at that time we were not permitted to have contact with the donor family and there were no organ procurement organizations.

“That was 1969 and at that time we were not permitted to have contact with the donor family and there were no organ procurement organizations.”

I thought often of the family but it wasn’t until 1994, when I was reading a newsletter from my transplant center and there was a reminder to thank your donor family, that I ever tried to make contact with my donor family. Twenty-five years later I found myself writing a letter that I forwarded to the now local OPO, who of course had no records of my transplant. With the information I was able to give them from the newspaper, however, they found the family and sent my letter.

After two weeks passed, I received a response from the sister of the young girl whose gift of a kidney I had received 25 years earlier. She and her dad were thrilled to hear from me and said they were not surprised that the kidney was still functioning as her sister had always been a fighter and loved life.

So here I am 33 years later enjoying life, married with a son and thankful and grateful for every day of my life.
Welcome to the 10th anniversary issue of Transplant Chronicles! In celebration of this issue we bring you a new look and the transplant history of different organs. I’ve been involved in transplant for 21 years and as I read these articles I think about all the changes I have seen over the years. Insurance now covers more transplants and there are more medications and anti-rejection protocols available. Successful transplant takes into consideration the quality of recipients’ lives: returning to work, school and normal activities as well as how the recipient is feeling mentally and physically. Living donation is an accepted and growing practice and is used not just for kidney transplant, but for partial lung, liver and pancreas transplant as well. While most living donors are family members of the recipient, the number of unrelated donors is growing. I have been with Chronicles since its inception and I too am amazed how Chronicles has grown with the help of you, our readers. Keep sending us ideas, articles, jokes, photos and poems. Chronicles is available to all transplant programs and individuals. Let us know if a transplant program or recipient you know needs copies by calling the National Kidney Foundation at (800) 622-9010. We look forward to another 10 years of bringing you the most current information in transplantation. Have a great summer and I hope to see you at the Transplant Games. I’ll be the one with 15 pediatric recipients in tow!

Beverly Kirkpatrick
for the Editorial Board

National Kidney Foundation Seeks Nominations for 2002 U.S. Transplant Games Awards

(New York, NY) The National Kidney Foundation is currently seeking nominations for three awards to be presented at the 2002 U.S. Transplant Games to be held June 25-29 at Disney’s Wide World of Sports™ Complex.

The American Society of Transplantation (AST) Award is presented to two athletes who have furthered the cause of donation in their return to health and productivity by raising awareness about the critical need for organ and tissue donation in their communities. The two categories are for athletes under and over the age of 18.

The Mickey Mantle Courage Award recognizes a transplant athlete who has overcome great challenges to participate in the U.S. Transplant Games. For more information on the AST and Mickey Mantle Courage Award or to request a nomination form, please contact the National Kidney Foundation Transplant Athletics department at (800) 622-9010. All nominations must be received by May 10, 2002.

The Musculoskeletal Transplant Foundation (MTF) DonorCARE Award will be presented to an individual or group that has provided consistent and comprehensive care to donor families. To receive more information on the MTF DonorCare Award or to request a nomination form, contact the MTF at (800) 946-9008. Deadline for nominations is April 22, 2002.

The U.S. Transplant Games is a biennial, Olympic-style event open to recipients of every type of life saving organ transplant, including kidney, liver, heart, lung, pancreas and bone marrow.
2002 is the tenth year of publication for *Transplant Chronicles*. Fittingly, it also marks the 40th anniversary of Murray and Merrill’s initial 1962 report of successful kidney transplantation between donors and recipients who were not identical twins. Before the experience reported in this landmark *New England Journal of Medicine* article, there was only limited success in human transplantation. Looking back, these 40 years easily segregate into four very different decades. The first, 1962-1972, witnessed growing enthusiasm for kidney transplantation to treat chronic kidney disease, and the establishment of transplant centers around the United States. Passage of the Social Security amendments of 1972 ushered in a new era, with Medicare eligibility enabling kidney transplantation to be offered to most Americans regardless of financial resources during the second decade. The introduction of cyclosporine in 1983 was another landmark, and over the next 10 years, success rates in kidney transplantation reached new heights: for the first time, it became possible to challenge the premise that dialysis was the best treatment for chronic kidney disease. The decade since 1992 has been equally momentous.

**Unprecedented success…** If you received a kidney in 1992, your chances of experiencing acute rejection at least once was 50 percent, and of losing your kidney during the first post-transplant year, about 20 percent. The median survival time for a cadaver kidney was eight years, and for a kidney from a living donor, 12-14 years. Now, only about 20 percent of recipients require treatment for rejection, over 90 percent keep their kidney at least a year and median survival time is 13 years for cadaver and over 20 years for living donor kidneys.

**Reflecting major advances…** More precise tissue typing and cross-matching have allowed better determination of appropriate donor and recipient pairs before transplantation. Newer immunosuppressive drugs (Neoral®, Prograf®, CellCept®, Rapamune®, Zenapax®, and Simulect™ were all approved between 1994 and 2000) are more effective in preventing rejection, with fewer side effects. The total dose of steroids (prednisone) which patients now take is a fraction of what was standard 10 years ago. Antibiotics are also less toxic and more effective. We can now successfully treat viral and fungal infections with potent medications (including Cytovene®, Ambisone®, and Abelcet®) that can eradicate the disease without compromising the kidney transplant, a goal only dreamed of in the 1980’s.

**Has changed the focus of clinical care…** It is no longer appropriate to dwell entirely on the transplant itself. Now, the principal factors determining how long the kidney will function reside outside the transplanted organ. What are the best doses of immunosuppressant drugs for recipients after five years? After 10 years? After 20 years? Who’s going to pay for these medications over such long periods of time? How can their side effects be minimized? Can we reduce the risk of heart disease? Is the blood pressure well controlled? How about the cholesterol level? How often should transplant recipients be screened for cancer? In 1992, the biggest challenges were rejection and infection. We now have the luxury to address these broader long-term issues that must be overcome if our patients are to do even better.

**And created new challenges.** Now that kidney transplantation is successful most of the time, and prolongs life for those with kidney failure, how are we going to find suitable organs for more than 50,000 Americans who need them? Improving access for people with chronic kidney disease to transplant centers and finding enough organs to meet the need may be our greatest current challenge. Fortunately, more and more patients are referred for transplantation early in the course of dialysis. Cruelly, the supply of cadaver kidneys is not growing, and average waits for a suitable kidney exceed five years at many transplant centers. There is now greater emphasis on utilizing living kidney donors, and advances such as laparoscopic nephrectomy have made the outlook for these generous people brighter than ever before. However, now more than ever, those of us involved in transplantation must effectively communicate to all our brothers and sisters in this great country the overwhelming benefit that comes from donating organs in the event of a loved one’s untimely death.

Yes, the last decade has been one of huge scientific advances with growing numbers of restored lives in kidney transplant recipients. What lies ahead? Hopefully, whoever is writing this column 10 years from now will be able to look back on even more dramatic successes.
When I used to think of donating, I thought of donating money to the poor or clothing to the homeless. Last September, the word “donating” became an extraordinary and personal experience. My name is Philip Cochrane, and I live in Salt Lake City, Utah. I recently had an experience I feel necessary to share.

In February of 2001 my father-in-law, Scott Parry, became very ill. He couldn’t work or even get out of bed some days. After many tests he was diagnosed with complete kidney failure induced by diabetes. Without functioning kidneys, Scott would eventually die of kidney failure. His only option was to be put on kidney dialysis.

Scott had little time for other things, including work and spending time with his family. It was a devastating time for him and our entire family. To ease the pressure on my mother-in-law, my wife and I decided to move in to their home and help with Scott’s care. Living with his illness every day made me realize just how hard it was for him to go through this trial. Scott wasn’t getting any better. He was losing weight, becoming very weak and he was still very ill. The doctors finally told him dialysis wasn’t working and it was time to find a kidney donor. The search began for a matching kidney. Members of Scott’s family were tested but none of them were a viable match, so we began looking to others, but we couldn’t find anyone with the same blood type. The very next day at dinner, my mother-in-law, Kris, who is also a nurse, mentioned that there were rare occasions when people of opposite blood types have matched, but she quickly laughed it off because it’s so rare. The conversation turned into a joke about how I could be the match. Of course it was impossible—Scott and I have opposite blood types. He’s O positive and I’m A positive. Despite the joking, I knew for a fact I was going to be the match.

The next day, I called the transplant team at LDS Hospital in Salt Lake City, Utah, and asked to be tested. The nurses reminded me of the rarity of this match, but said they would be happy to test me. They took about 10 vials of blood and told me it would be a week before the test results were in. The week went by and I received a phone call at about 11:00 A.M. on a weekday from Glenda, a nurse on the transplant team. She could barely speak. She was in shock. She said she couldn’t believe she was making this call. I was a perfect match and I was going to be the donor. She said the match was one in 20 million people and it was a miracle.

As soon as I got off the phone, I called my wife and in-laws to tell them the good news. It was an incredible moment. They couldn’t believe what they were hearing. It was the best news I have ever told anyone. After a brief physical, and more tests, the transplant date was set for October 3, 2001. Time flew by and the next thing I knew, I was in the hospital being prepped for surgery.

A few hours later, I found myself waking up in the recovery room with my wife and family by my side. Scott was still finishing up in surgery when I woke up, but the doctors said his body had already accepted the kidney, and he could plan on having a perfectly functioning kidney for at least the next 15 to 20 years.

It’s been three months, and Scott is doing extremely well. He’s gained weight, he’s back to work and he looks like he did five years ago.

He still has a journey ahead of him. He initially needs to take a plate full of pills every day to prevent rejection and other complications caused from his diabetes. In time, some of the pills will go away, but it’s a small price to pay for the quality of life he’s gained. As for myself, I feel great. I am thrilled to have had the opportunity in my life to donate one of my organs to someone in need. I truly believe everyone should become more aware of living organ donations. Most people will never receive the organ they need and will end up losing their lives because of it.

Here’s a quote from the National Kidney Foundation: “Living donation is a beautiful and selfless gift made from the donor to the recipient with no expectations of material compensation. If you would like to be an ‘anonymous donor,’ contact a local transplant center or your personal physician.”

Philip Cochrane is the senior associate for a debt management/financial services company in Salt Lake City, Utah. He and his wife, Heather, have been married for two years and have their first child on the way. Philip enjoys snow skiing, fly fishing, wakeboarding and spending time with his family.
Liver Transplantation: How Far Has It Come?

By Adela T. Casas-Melley, MD

The birth of liver transplantation began in the 1950’s with experimental transplants being performed on dogs. Most of this work was done without anti-rejection drugs. In 1963, trials began for the use of prednisone and azathioprine as anti-rejection drugs in kidney and liver transplants. Dr. Thomas Starzl, a pioneer in liver transplantation, performed the first human liver transplants using these medications in 1963. None of the patients survived. Between 1963 and 1967, the surgical technique was improved and antilymphocyte globulin was introduced. The first successful clinical experience with liver transplantation was accomplished by Dr. Starzl in 1967. These patients received a combination of azathioprine, prednisone and antilymphocyte globulin and had a one-year survival of 28 percent. Between 1967 and 1979, Dr. Starzl improved the one-year survival rate to 34 percent.

Then came the introduction of cyclosporine. The first clinical trials of cyclosporine began in 1979 and a new era of transplantation began. The first successful clinical experience with liver transplantation was accomplished by Dr. Starzl in 1967. Between 1963 and 1967, the surgical technique was improved and antilymphocyte globulin was introduced. The first successful clinical experience with liver transplantation was accomplished by Dr. Starzl in 1967. These patients received a combination of azathioprine, prednisone and antilymphocyte globulin and had a one-year survival of 28 percent. Between 1967 and 1979, Dr. Starzl improved the one-year survival rate to 34 percent.

In 1989, Dr. Christofl Broelsch, a transplant surgeon from the University of Chicago, took the technique of splitting liver grafts one step further and developed the technique for living donor transplantation. With this technique, a family member can donate a portion of his or her liver for the patient awaiting transplantation. At the time, the technique was limited to infants and children because of the size of the portion of liver removed. The technique was very successful. Numerous children have been transplanted using this technique with very good results. The complication rate among the living donors has been small. This technique added a new number of grafts to the pool of organs available for transplantation.

The number of living donor transplants remained rather steady in the 60-70 transplants a year range until 1999 when Dr. Amadeo Marcos developed the technique of living donor liver transplantation suitable for adult transplantation. In this technique, a much larger portion of the liver is removed (60 percent) from the living donor for use in the patient awaiting transplantation. In the hands of good technical surgeons the procedure is quite successful. The risks for the donor are higher than those for the donor for infants and small children, and there is a higher complication rate in the recipient; however, it cannot be denied that in the year 2000 almost 200 adult living donor transplants were performed and the number significantly increased in 2001. These are patients that might have never been transplanted had this technique not been developed.

Despite all of these improvements and techniques we are unable to keep up with the demand for liver transplantation. There are presently 17,000 patients on the list awaiting liver transplantation. Despite over 4,800 liver transplants being performed annually in the United States we are unable to make a dent in the waiting list. In fact, for every patient that we transplant two new patients are placed on the list. Improving organ donation is a major hurdle in the future advancement of liver transplantation.

What is coming in the future? Every year new drugs are added to the list of medications we use for the treatment of rejection. New techniques are added to improve the surgery, the outcomes or to decrease complications. Transplantation is a constantly growing and improving field. Investigation into areas to improve the body’s acceptance of the new organ without the use of anti-rejection medications is ongoing. Transplantation without rejection and without medications is the goal. The sky is the limit.
Rachael Jones was the mother of a new baby girl, Darrica, and an active nine-year-old boy, Marquis. Her family had much in common with most young families, but there was one major difference in their routine. Every Monday, Wednesday and Friday, after Marquis left for school, Rachael and little Darrica headed for a local dialysis unit. While Rachael dialyzed, Darrica slept in a bassinet by the secretary’s desk.

Rachael had kidney failure, caused by a condition called focal necrosis. She had been through severe complications with both her pregnancies—complications that taxed her kidneys and threatened the lives of her unborn babies. Now, her ongoing dialysis was putting a strain on her and on the children. She no longer had the time or stamina to work. Forced to give up her job at a light bulb factory, she had to rely on Social Security Disability benefits for support. Rachael had lost her old habit of taking life for granted. Many times she found herself asking, "Why me?"

When Rachael’s doctor at Vanderbilt Medical Center asked her if she would be interested in having a kidney transplant, Rachael knew that she was being offered an opportunity for a better life. She replied, "Yes, I really want a transplant!" Rachael had two older sisters and they both came to Vanderbilt to be tested. "One of my sisters couldn’t donate a kidney because she had high blood pressure," explains Rachael, "and it turned out that my other sister wasn’t a match." Rachael’s parents were both disqualified because of their own health problems. "I was depressed after they had been ruled out," recalls Rachael. "I was really discouraged."

Rachael didn’t think of asking her younger brother Charlie. She and Charlie had drifted apart and she seldom saw him. So she was surprised and moved when one day he called her to offer his kidney. Rachael went with Charlie to Vanderbilt to get him tested and waited nervously for the results. A few days later, Gaye Kelly, a transplant coordinator at the hospital, called the waiting siblings with good news. "These are great results," she said. "He’s a perfect match!"

To prepare for surgery, Charlie and Rachael went through counseling and had three days of examinations. Rachael explains, "This actually gave us a chance to get back in touch. We hadn’t spent much time together since we were kids. Going through this, we really bonded again." The night before the surgery she and Charlie had a big dinner with the whole family. The day of the surgery the two of them went to the hospital together and prayed. Rachael asked Charlie if he was sure he wanted to give her his kidney. He answered, "Yes. I’m doing this for you and your life and your kids."

The transplant was a success. Rachael had her health back and was free from the draining routine of dialysis. She was busy with Marquis and Darrica, and involved in church activities. She was closer than ever to her brother, Charlie. The only thing she needed now was a job. "My sister was also looking for work," she says, "so I told her that I was going to go with her and start job hunting and going on interviews," says Rachael. Although Rachael applied to several places, she didn’t get any calls back. She became discouraged again. By this time, she had been out of work for three years. As she explains, "When you’ve been out of work for three years, people are scared to try you."

Then one day she got a call from a vocational counselor at the Vanderbilt Transplant Return-to-Work Program, asking if she needed help finding a job. "I didn’t know anything about the program. I wondered how the counselor knew I was looking for work. I decided to go ahead and try it," she says. Rachael’s goal was to find an office job, like a secretary or a receptionist. "I’d worked factory jobs before, and that just wasn’t happening for me," adds Rachael, "but I’d always dreamed of a job where I could dress up—wear dresses and earrings and keep my hair nice."

Thanks to the help of her vocational counselor, Rachael soon found a full-time position as a file clerk in the Adult Primary Care Department of Vanderbilt Medical Center. She took to her work with excitement. First she put the file department in order, and then she took on some of the receptionist duties. "I love my job!" she says. As a future goal, she is considering stepping up to a front desk position, registering patients. "But as for now," she remarks, "I’m just really happy where I am."

"Yesterday was the second anniversary of my transplant," says Rachael, "It just so happened to fall on a Sunday, so we went to church. We had a big family dinner in the evening. We celebrated like it was a birthday party." Summing up, she adds, "My life is turning out the way I wanted it. It’s moving slow, but it’s coming. My goal now is to purchase a home for my kids, so I can have something secure for them. I’d like to have my own yard. If I keep working and keep on striving for it, I’ll get it."

Joanne C. Ball is the program director of Vanderbilt University Medical Center’s Return-to-Work Program in Nashville, Tennessee.
Health Insurance: Changes Over the Past Ten years

By Alexander H. Whiteaker

The 1990’s saw incredible changes in health insurance for all Americans. Perhaps more so for transplant recipients. Most recently, the federal government extended Medicare coverage for immunosuppressive drugs for recipients of organs beyond the three years previously given to kidney patients. However, this extension does not apply to those whose medcicare coverage is solely based on End-Stage Renal Disease (ESRD). While this writer certainly prays that the ESRD transplant community also benefits from the extension (through a change in the law at some point soon) there is no doubt that for thousands of us, the additional coverage is a great relief because of the expense of the covered medicines and the critical need for them.

While the changes in Medicare and the widespread agreement of the states to pay for organ transplants through Medicaid programs are tremendous advances, on the private side the changes are nothing short of shattering.

In the early 1990’s, many insurance companies only routinely covered kidney transplants. During the last 10 years the demand for organs has grown, and the wait lists have exceeded the numbers of donors, because of the gradual acceptance of organ transplantation as therapeutic treatment for organ failure. Heart and liver transplant survival rates have approached those of kidney transplants and insurance companies now regularly provide coverage for transplants and the ensuing drug regimens.

Of course, many recipients must return to work. The states and federal government have enacted many laws that protect our rights to coverage and in some cases give us new rights. Most of us know about COBRA (the Consolidated Omnibus Recovery Act), which mandates continuation of coverage for persons who become disabled from work and who are covered under group health plans. COBRA was a big step forward when enacted in the 1980’s. It did little to ensure coverage for persons returning to the workforce or those changing employers who would otherwise be entitled to coverage with their new employer.

In 1996, President Clinton signed the Health Insurance Portability and Accountability Act (HIPAA). Along with the above mentioned increased Medicare coverage and acceptance by the insurance industry of transplants as routine, this act has ensured that many thousands of recipients have far less risk of losing coverage due to their health.

HIPAA limits or eliminates waiting periods and exclusions for preexisting conditions. Thus, people can leave one employer and be covered for all provisions of a new policy – in most cases – or return from disability and have their COBRA or Medicare count towards eliminating any waiting period for coverage. HIPAA also mandates that states require insurance companies issuing group policies to make available individual policies to terminating employees. Formerly covered employees are now almost always guaranteed some kind of medical coverage.

Other changes that benefit the transplant community include state regulations affecting claims processing, audits of insurance companies, expanding legal rights against HMOs and insurers and the creation of special state sponsored plans for child health care. At the federal level, there are strict laws prohibiting employment and employee benefit plan discrimination against the disabled (Americans With Disabilities Act and HIPAA), special rights to require employer coverage of employees’ children, mental health parity, mandatory minimum coverage for hospital stays for childbirth (Newborns’ and Mothers’ Health Protection Act of 1996) and reconstructive surgery for mastectomies (1998).

Where do we go from here? Congress will pass a patient’s bill of rights within the next few years. It is anticipated that we will have the right to sue health plans in state court for bad decisions. It is likely Medicare will be extended to cover drugs for ESRD transplant recipients not already covered. Insurance companies are paying and will pay more to cover the costs of living donors – live donation is now being routinely performed for kidney transplant and is becoming more common in liver transplant.

Here are some suggested resources for finding out about your rights and coverage: Employees should always ask for a copy of the entire policy that covers them. Do not just rely on plan booklets. Read carefully. Everyone should know his or her rights and potential coverage under Medicare. Contact the Social Security office near you. Other government agencies offer information and help. Such agencies include Medicaid offices, legal aid societies and public advocacy offices. If covered under employer plans you might also call the U.S. Department of Labor with problems or questions in addition to the state insurance department. There are lots of private and non-profit organizations such as the National Kidney Foundation (www.kidney.org), American Liver Foundation and American Heart Association. If you need an attorney, call your local bar association. Read about extended Medicare coverage for immunosuppressive medications at www.transplantrecipients.org.

Do not assume that you are covered. Always read your policy and talk to your employer and health care insurer/HMO. If you have a coverage dispute, policies have procedures that must be followed and most states require the companies have in place an appeal procedure. Before going to court, you must exhaust your rights under the plan. To find detailed information on the laws discussed here try www.findlaw.com, which has links to government and other sites, stories, articles and more.

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Heart Transplantation as Therapy for Severe Heart Disease: Changes Over the Last Decade

By Robert C. Bourge, MD, and Barry K. Rayburn, MD

Since the first heart transplant operation in December of 1967, we have seen what was initially a medical curiosity become a relatively commonplace surgery in a relatively large number of transplant centers throughout the United States and the world. Unfortunately, transplantation is not a "cure" for severe heart disease. It does offer, for carefully selected patients, an improvement in quality of life, life span, and for most, a significant improvement in quality of life. During the 1980’s, we saw a marked improvement in survival post-heart transplantation, due largely to the introduction of new chronic immunosuppressive drugs (including cyclosporine). In the 1990’s we saw a continued improvement in survival, in large part due to a lower incidence of heart rejection as a result of the introduction of additional new chronic medications to prevent cardiac rejection, including mycophenolate mofetil (CellCept) and sirolimus (rapamycin, Rapamune) and its derivative (RAD-SDZ, currently under investigation in heart transplant patients). In addition, we have seen the introduction of daclizimab (Zenapax) and basiliximab (Simulect), which may be used just before and then for a few days to weeks after transplantation to further prevent rejection. These drugs seem to allow more patients to successfully be tapered off of long-term steroids, thus lessening the medical complications associated with their use, including osteoporosis, diabetes and obesity.

The therapy of acute heart rejection has also seen significant advances in the last decade. We now have new and more powerful agents for the therapy of rejection including Thymoglobulin. Acute therapy for severe rejection has also been improved by the more widespread use of techniques, such as plasmapheresis and immunoabsorption, where antibodies causing rejection are actively removed. Preventive measures to reduce the chance of recurrent rejection such as photopheresis have also gained more widespread acceptance.

Heart transplantation is often referred to as the "last resort" in the therapy of severe, or so-called "end-stage" heart disease. Part of the reason for this description is the fact that heart transplantation may only be offered to a small minority of potential recipients due to the shortage of donor organs throughout the world. In this country, the number of heart transplants per year peaked at approximately 2,300 in the early 1990’s, and remains at about 2,100 – 2,200 per year. This is despite a relaxation in the criteria of acceptance of a donor to include older donor hearts. It is estimated that we could more than double the number of heart transplants if all potential donor families gave permission for heart donation. Unfortunately, the number of patients with advanced heart disease is rising significantly, as the occurrence of heart disease increases with age, and our population is aging.

Fortunately, the therapy of advanced heart failure has improved significantly over the last 10 years. Indeed, many of the patients who were routinely transplanted early in the 1990’s are currently treated with medications, devices to treat life threatening arrhythmias (implanted defibrillators) and surgical therapies. These measures result in improved quality of life and life expectancy rivaling that of the transplant recipient for many of these patients. The more widespread use of medications such as ACE inhibitors (captopril, enalapril, lisinopril, ramipril, and others) and beta blockers [carvedilol (Coreg), metoprolol-XL(Trandate-XL)], have been shown to not only improve heart function, but to improve survival. More enlightened transplant centers combine an advanced heart failure treatment program, including an active transplant program, with an emphasis on transplanting only those patients who really need transplantation. This practice includes placing previously listed patients on an inactive status if their heart disease improves to the point that the risk of transplantation is higher than the risk of continued medical therapy. Unfortunately, due to the shortage of donor organs, and the desire to do an adequate number of transplantations, some programs "pre-list" patients for heart transplantation because of the possibility of a long wait for an organ, and then may transplant a patient who is less sick too early. This practice actually lengthens the waiting time for donor hearts, and may shorten the overall survival of an individual patient who is transplanted too soon.

Hope for the patient with advanced heart failure has also been improved by the use of ventricular assist devices (VADs) and, more recently, the total replacement heart (ABIOMED Heart). VAD technology is moving from intermediate survival technology utilized as a bridge to

Continued (on page 14)
State of Donor Registries in U.S. Confused at Best With Little Evidence of Positive Impact Forum Finds

By Jim Warren, editor and publisher

O_f all the issues surrounding organ and tissue donation and transplantation in the US, perhaps the most confounding is the question of donor registries. Twenty-eight states don't even have one, and those that do have no national funding (some have no funding at all), little uniformity, no linkage and no common accepted definition of consent versus intent. Most important, it is not known whether registries even make any difference at increasing donation.

Participants invited by the US Department of Health and Human Services (HHS) to a Donor Registry Forum Nov. 29-30 spent two intense days bandying about such nebulous questions and developing recommendations for HHS to consider. When the dust cleared, attendees had settled on the following "Catch 22" decision—establishment of a national donor registry is off the table at this time, but the 28 states without a registry should not proceed to develop one until national minimum guidelines are established. And, in a final fit of decision making, the group recommended that a national study be conducted to address all the issues raised above plus a bucketful of others.

"We want you to discuss registries with each other, don't get mad at each other, and come up with a set of recommendations," HHS Secretary Tommy Thompson told the more than 100 participants representing organ procurement organizations (OPOs), state governments and a few tissue and eye procurement organizations. "We will follow your lead and come back to you. We want to be your partners in working this out."

At the end of the two days, participants had clearly raised more questions than they answered, i.e., they adamantly rejected any thought of establishing a national donor registry (we want your money but not your divine intervention)—although what to do with the 28 states without a registry remains unanswered—and reaffirmed the reality that to date the data shows that the establishment of registries has had little or no impact on increasing organ donation.

"What difference do registries make? This is a puzzle for us," Russell Hereford, HHS inspector general, told participants. "Most say it helps them do their work, partner better with hospitals, but it is not clear if registries work or if they make a difference." Hereford's comments were important because his office is currently putting the finishing touches on a report on registries due out in the spring of 2002.

Richard Luskin, executive director of the New England Organ Bank located in one of the 30 states without a registry, Massachusetts, raised the question that was central to the debate over registries when he asked, "Do they actually make a difference or do we get people we would have gotten anyway?"

There are currently four different bills in Congress containing different provisions for the establishment of donor registries. None is expected to pass in its current form, but they do provide a framework for future legislation once HHS has determined what action, if any, to take.

The provisions range from The Motor Donor Act (S.788 and H. R. 2645) introduced by Sen. Charles Schumer (D-NY) and Rep. Leonard Boswell (D-IA), which calls for the establishment of a national organ and tissue donor registry to the Organ Donor Enhancement Act (H.R. 955) introduced by Rep. Jay Inslee (D-WA), which calls for establishment of a nationwide centralized living donor registry for tracking living donors annually, but does not address developing an organ/tissue donor registry.

There was general agreement that HHS should develop model legislation utilizing the best of the four bills and that each of the four is lacking in some fundamental way.

After much debate, the participants arrived at a set of recommendations to be forwarded to Secretary Thompson sometime early next year. While the language of some of the recommendations is sure to change, here are the recommendations in general:

★ The government should establish minimum guidelines that must be included in state registries—states considering establishing a registry would have to meet the guidelines to be eligible for federal funding.

★ The issue of donor intent versus consent must be clarified. The Secretary should request the Institute of Medicine (IOM) to conduct a study on this issue and several others including what a signed donor card means.

★ State autonomy to establish a registry must be respected and all states should be encouraged to develop a registry.

★ No national registry should be

Continued (on next page)
considered at this time. It is important the Secretary clarify that the government is not talking about establishing a national registry.

The national role must be defined. Congress and HHS must decide what the role should be.

A national report on organ donation in states that have registries and those that don't should be published annually.

Congress must provide initiatives to establish registries including funding.

A process for evaluation and accountability must be developed.

There was wide agreement that every citizen in the US should be provided the opportunity to join a donor registry. The question of how to give that opportunity to residents in the 28 states without a registry at this time remains to be answered.

Perhaps equally as important was a statement by Stacy Schmidt, Chair of the Association of Organ Procurement Organization's Registry Task Force, who told the participants at the beginning of the meeting that a donor registry is designed as a place to go to become a donor, not to decide if they want to donate.

AMA delegates narrowly defeat bid to study financial incentives for organ donation

Delegates attending the American Medical Association's (AMA) winter meetings in San Francisco voted to table a plan to study what effect financial incentives would have on organ donation.

Following a lengthy debate over the Council on Ethical and Judicial Affairs' recommendation that the AMA support pilot studies to determine if covering funeral expenses or giving tax benefits impacted donor rates, a slim majority of the 538 delegates voted to table the matter for at least six months.

Explaining the recommendation Frank Riddick, Jr., MD, council chairman, said, "We have a nationwide crisis and altruism doesn't seem to be hacking it right now."

Riddick's council urged the AMA to initiate a scientific trial on what effect offering financial incentives might have on increasing/or decreasing organ donation. The council's report noted, "There seems to be no compelling reason why viable solid organs should be treated differently from less complex tissues [like blood and reproductive materials] on moral grounds. Moreover, donation itself implies a property right in organs."

Buoyed by the slim margin of defeat, proponents of the pilot studies say they will raise the issue again at the AMA's June 2002 meeting in Chicago.

Congress passes HHS funding bill with $5 million increase for donor initiative

With what many observers called surprising ease, the US Congress passed the 2002 Labor, HHS, Education Appropriations bill on December 20th. The $116.3 billion appropriation includes a $5 million increase in support for the Department of Health and Human Services national organ donor initiative.

In a statement praising the agreement HHS Secretary Tommy Thompson specifically pointed out the funding for the donor initiative. "The agreement [would] increase support to organ transplant programs in the Health Resources and Services Administration by $5 million, providing greater impetus behind the Secretarial 'Donate Life' organ donation initiative, which was launched in April 2001," Thompson said.

The agreement also provides $23.3 billion (14.7 percent increase over 2001) in spending for the National Institutes of Health (NIH), $4.3 billion for the Centers for Disease Control and Prevention (CDC), and $229 million for the Agency for Healthcare Research and Quality (AHRQ).

AST launches program to remove financial disincentives for live donors

The American Society of Transplantation (AST) has launched a nationwide effort to get private companies to change employee policies to remove any financial disincentives for employees seeking to become a live organ donor.

AST is asking its members to participate in recruiting companies and organizations in their states to develop organ donation leave policies similar to those already adopted by the Federal Government, many state legislatures and private companies and institutions.

"As you may be aware, the Federal Government has changed its 'employee leave' laws to provide its workforce with a more adequate amount of time to recuperate from the organ donation process," AST said in a letter to members signed by Laurence Turka, MD, president, and William Harmon, MD, president-elect. "In addition, many state governments have also acted to amend their leave policies to remove any financial disincentives for employees seeking to serve as an organ donor."

The letter explained that the Organ Donor Leave Act signed by President Clinton in September 1999 extended the amount of paid leave for the purpose of being a live donor (kidney, liver, lung) - to up to 30 days. Turka and Harmon also noted that more than 20 state legislatures are moving toward passing such laws, and listed states that already have such laws, including: Colorado, Delaware, Florida, Maryland, Missouri, New York, Virginia and Wisconsin.

The AST's "sample leave policy" included in the letter to members includes:

"Eligibility - paid organ donation leave is available to regular full-time and regularly part-time employees only; part-time and temporary employees, and employees on
Larry Kramer, 66, who needed the transplant because of end-stage liver failure caused by hepatitis B, was the tenth patient with HIV to be transplanted at UPMC since 1997. (Transplant News, September 18, 2001)

"Our experience with liver transplantation for hepatitis B has been excellent and the use of new anti-hepatitis B medications should prevent the redevelopment of hepatitis B in Mr. Kramer," said John Fung, MD, chief of the UPMC division of transplantation who led the surgical team.

Kramer's screenplay for the 1969 film Women in Love was nominated for an Academy Award. He also wrote the plays "The Normal Heart" and "The Destiny of Me," as well as books on AIDS and gay activism.

According to the United Network for Organ Sharing (UNOS), since 1988 33 liver transplants have been performed in HIV-positive patients in the US. Of the 4,954 liver transplants performed in the US in 2000, 11 were HIV-positive patients.

Cloned pigs with rejection gene eliminated raises hopes for breakthrough in xenotransplantation

In a significant step toward enabling animal-to-human transplantation without organ rejection, scientists at two rival biotechnology companies announced last week that they had cloned pigs that are missing a gene that triggers rejection by the human immune system.

Immune system rejection has been a huge barrier to xenotransplantation. The theory behind these recent cloning experiments was to create a supply of identical pigs lacking the problematic gene. Until now, scientists have been able to add genes but not remove them, explained Randall Prather, PhD, a University of Missouri reproductive biologist who led a research team from Immerge BioTherapeutics in Charlestown, MA.

On January 3, researchers at the University of Missouri at Columbia, in collaboration with Immerge BioTherapeutics, a joint venture between Novartis and BioTransplant Inc., reported in the journal Science that they had successfully cloned four miniature pigs lacking a copy of the 1,3-galactosyltransferase (GGTA1) gene. This gene produces a sugar that is immediately recognized as foreign by the human immune system. Its presence in every cell of a pig’s body has precluded the use of swine organs in humans, as any graft would be quickly rejected. The piglets, all female, were born in September and October and appear healthy.

A day earlier, PPL Therapeutics, the Scottish company that created Dolly, the world’s first cloned mammal, said it had cloned five pigs that also had one copy of the GGTA1 gene knocked out. The animals were born on Christmas Day at PPL’s US branch in Blacksburg, VA.

Pigs have garnered the most attention as potential sources of organs for humans because they are biologically similar to humans but not as similar as monkeys or apes, which are reservoirs of human disease.

Despite this advance, however, significant obstacles remain before pig organs are ready for human testing.

First, researchers must breed animals that lack both copies of the GGTA1 gene. The Immerge BioTherapeutics group said it hopes to have “double-knockout” pigs born within the next year or so. The researchers plan to accomplish this by further manipulating the genes inside cells or by mating some of the newborn single-knockout animals, which can give rise to double-knockout offspring. Organs from animals completely devoid of the culprit gene then will be transplanted into non-human primates to see how long they survive and identify mechanisms of the primate immune system that interfere with the transplants’ longevity.

"This is a major step forward, although these pigs have had only one pair of genes knocked out which means they still produce Gal," David Cooper, MD, former president of the International Xenotransplantation Society, told Transplant News. "We're going to have to wait for the other gene to be knocked out before we have a pig that doesn't express Gal which can be either by a second cloning procedure using a cell from the present pigs, or by breeding. Repeat cloning would be quicker but there are technical difficulties while breeding would take much longer."

"In any case, it will be at least 12 to 18 months before we have a pig that could be used as a donor for testing in a nonhuman primate model," Cooper.
Public advisory panel recommends ban on xenotransplant human trials in Canada

After nearly two years of deliberation, a public advisory group is recommending that Canada not allow xenotransplantation involving humans at this time until many "critical issues" are resolved. The major issue, according to the group, is the health risk an individual would be taking in receiving an animal organ.

"When considering whether to proceed with xenotransplantation, Canadians consistently raised issues around health risks, strategies to address the organ shortage, and legislation and regulations," observed the Canadian Public Health Association’s Public Advisory Group on Xenotransplantation, in the report’s executive summary.

Health risk "was generally expressed as concern about the risk of zoonotic disease from infection by known and unknown viruses, and the fear that this could lead to a large-scale epidemic," the report said.

More than 62 percent of respondents to a variety of surveys said they felt the risks of xenotransplantation outweigh the benefits, the summary noted, adding that women were "significantly more likely than men" to feel that way.

Canadians who supported going forward with xenotransplantation said "stringent and transparent" legislation and regulation must be in place before human trials begin.

"Strict regulation of research practices (both human and animal), public education and designated centers of expertise are measures that could be taken that would most reassure Canadians about xenotransplantation," the summary noted. In addition, a legal framework including research protocols, an accountability structure, multidisciplinary ethics committees, a ‘watchdog’ responsible for good clinical practices and a procedure for informed consent must be in place.

California inmate receives heart transplant, igniting debate over who should receive scarce organs

A 31-year-old California prison inmate serving 14 years for robbery is thought to be the first person to receive a heart transplant while in a state prison. The inmate, whose name is being withheld for reasons of medical confidentiality, received a heart at Stanford Medical Center on January 3. State prison officials said the inmate suffered from a viral heart condition, which became critical, necessitating the transplant.

The prisoner was transferred to the Stanford Medical Center from California’s prison system medical institute in Vacaville. He received the heart from an unknown donor and has been returned to Vacaville.

The transplant, estimated by officials to cost in excess of $1 million with follow-up care, sparked a debate over whether there are limits to the type of care that should be given to ailing prisoners.

Russ Heimerich, a spokesperson for the California Department of Corrections, defended the transplant, saying the department has lost several lawsuits over inmate care. "We don't have a policy per se," Heimerich said. "We have a requirement, based in law and in losing many, many lawsuits, to provide necessary care to inmates."

Heimerich cited a 1976 US Supreme Court ruling declaring it "cruel and unusual punishment" to withhold necessary medical care from inmates and a 1995 federal court decision ordering prison officials to give a

kidney transplant to an inmate whose request initially had been denied.

The United Network for Organ Sharing (UNOS), the organization that maintains the nation's waiting lists, says excluding an inmate from receiving a transplant is not "ethically legitimate."

"Unless a person's status connotes some exclusionary medical criteria such as their environment isn't conducive to appropriate aftercare prohibited by law from including social criteria in organ allocation policy," Anne Paschke, a media spokesperson told Transplant News. "The National Organ Transplant Act specifies that the Organ Procurement and Transplantation Network establish 'medical criteria' for organ allocation. It's been UNOS' position that 'social criteria' per se be excluded from medical criteria and therefore are not permitted in consideration of organ allocation."

Initial reactions to the transplant were mixed. "You have to wonder if a law-abiding taxpaying citizen drew one last breath while Jailhouse Joe was getting a second wind," Steve Lopez, a columnist for the Los Angeles Times wrote.

However, Dr. Lawrence Schneiderman, a medical professor at the University of California, San Diego, supported the transplant. "It's reasonable to think the benefit we are giving him will be experienced by him with plenty of life left," he told the Associated Press. "Medically, we have no reason to deny him. Socially, he violated society, but not so severely that he gives up his right to experience medical care."

Schneiderman emphasized that "doctors don't have the right to make social decisions. If it's a limited resource, our choice should be who will it help the most."
Aerobic or cardiovascular exercise uses your large muscle groups in rhythmic motions for increasing periods of time. Walking, cycling, swimming, water and low impact aerobics, marching, dancing, stepping, cross-country skiing and rowing all fit under this umbrella. The intensity should be maintained for at least 10 to 15 minutes, without undue fatigue. The best aerobic exercises should maintain intensity at a constant level. This is especially true for individuals who are just beginning an exercise program, or for those who may be experiencing symptoms of cardiovascular disease. To maximize safety, you should adequately warm up prior to aerobic exercise, and then cool down at the end of the session. There are three important characteristics of exercise to be considered.

The frequency, duration and intensity are all interrelated and must be monitored and adjusted in order to maximize health benefits.

**Frequency**

Three to five times per week is a good start. Exercising one or two times may maintain fitness, but does not provide enough stimuli to achieve significant gains. On the other hand, performing the same repetitive mode of training can cause over-use injuries. Cross training (doing different activities) has been found to be the most effective with fewer injuries.

**Duration**

To maximize the benefits, try to progress to 30 minutes of continuous activity. When you first begin a routine be realistic and do not overdo it. Begin with five minutes, if this is all you can tolerate. Each session or every week, try to add a minute or two to your session. Increase your time, according to your tolerance. Don’t push yourself too hard. Exercise should become a life long habit, so go slow. It’s about participation, not perfection.

If your goal is weight management, aim for longer than 30 minute sessions. The longer you exercise, the more calories you burn. However, keep in mind that you should only do what you can tolerate.

**Intensity**

Moderate levels of exertion are appropriate and will do the trick. Begin with a warm-up and end with a cool down. The level of exertion should be one at which you are:

- Breathing some what heavy, but not out of breath.
- Feeling warm and breaking a sweat. The fitter you become the more you sweat.
- Pushing yourself a little, slightly beyond what is comfortable.
- Stopping the exercise and having your heart rate and pulse come down within 30 to 60 seconds of ending your session.

**Exercise Session**

Warm up for three to five minutes and include low level exercises like marching, dancing, big rhythmic movements and knee and arm raises. It is important to increase your body temperature before stretching your muscles.

- Stretch to your first point of tension and hold it for 15 to 30 seconds.
- A conditioning period should begin slowly and work up to 30 to 60 minutes of exercise.
- Try some moderate or semi-difficult levels of exertion.
- Cool down for about two to three minutes.
- Try some easy, light or low levels of exercise.

In health & happiness,
Vanessa A. Underwood
transplantation, to more long term "destination" therapy meant to someday supplement transplantation as a therapy for heart failure not responsive to intense management.

The 1990’s saw great improvements in the advancement of medical and surgical modalities to improve the quality of life and survival of patients with end-stage heart disease, but advances under investigation have the potential to improve things even further. Hopefully, measures to improve public awareness of the need for organ donation, and possibly the development of genetically engineered animals that will allow xenotransplantation (transplantation from an animal into a human) will allow more people to benefit from the life-saving therapy of heart transplantation.

Dr. Bourge and Dr. Rayburn are both transplant cardiologists. Dr. Bourge is currently chief of cardiology and Dr. Rayburn is medical director of the heart transplant program at the University of Alabama at Birmingham, one of the nation’s oldest heart programs.

Recipe From Our Dietitian

Kim Rast, RD

High Protein Milkshake

1/2 cup whole milk
4 teaspoons sugar
1/4 cup nonfat dry milk
1 cup ice cream

500 Calories, 19 gm protein

can add additional flavorings or fruit

Carolyn M. Ellis is a native New Orleanian and has been mother and grandmother to many children. She is a good friend of kidney patient, Charlie Anderson, who finds strength in her poems.

Do You Think?

By Carolyn M. Ellis

Do you think that I could ever be
A Captain sailing on the sea
With the stars in the heavens guiding me?
Do you think?

Do you think that maybe some day soon
I could fly straight to the moon?
Could I be there and back by noon,
Do you think?

Do you think that one day I could go
To the top of the alps all covered with snow
And be back before anyone would know?
Do you think?

Do you think that one day I could fly
A plane far up high in the sky
Going up, up, up until I’m really high?
Do you think?

Do you think that one day not so far
I could maybe be a football star?
I’d score the points to win the game
And everyone would know my name.
Do you think?

Do you think that maybe in the Spring
When I’m not doing anything
I’d be starring in the center ring
While the audience breathlessly
Watched me swing?
Do you think?

Do you think that one day I am meant
To maybe be the President?
If my mom would give me her consent.
Do you think?

Do you think that if I work and plan
I could be a fireman?
I’d be right there to lend a hand.
Do you think?

Do you think that if you’re ever ill and
Need someone to give you pills
I’d be the one who sends the bills?
Do you think?

I think that I cold probably do
Anything I really wanted to.
I think I can and so could you.
Do you think?
As organ transplant waiting lists grow, the length of time that patients wait increases. This is particularly true for those patients waiting for donated kidneys. Currently, there are over 50,000 people waiting for a kidney transplant in the United States. In major urban areas, it is not uncommon for someone to wait three or more years for an available kidney from a brain-dead organ donor. Consequently, transplant surgeons routinely recover organs from living donors whether related or unrelated to the recipient. Friends, co-workers and others have come forward to give a kidney to another. It is also now possible for a living donor to give a portion of his or her liver or pancreas to help another. A whole lung or even a lobe of a lung can be recovered from a living person and given to another. Because of risks to the donor, living "extra-renal donors," are not as common as live kidney donors. Typically, the donor is a parent giving his or her child in a life-saving situation. As the shortage of donated cadaver organs has worsened, transplant surgeons and critical care medicine specialists are returning to an historical source of organs for some relief. A procedure known as non-heart beating donation is again being practiced.

Prior to 1968, all organ donors were considered to be non-heart beating organ donors. That year, the Harvard criteria for brain death determination were developed and promulgated. By the late 1970’s, the criteria had gained wide acceptance among the medical establishment and state lawmakers. Nearly every state now has a brain death law on the books. Some of these laws model the Uniform Determination of Death Act developed during the early 1980’s. Adoption of brain death laws meant that (at that time) kidney donors did not have to be declared dead based on cardiac criteria before the organs could be removed. Organ donation could then occur while the patient was maintained on a ventilator with an intact heartbeat until just seconds before the organs were removed.

Today, non-heart beating organ donors are those patients who can not be declared legally brain dead. Typically, these patients have suffered severe brain injuries yet they retain some minimal lower brain function. This is usually manifested by a weak breathing effort that must be supplemented by a ventilator to prevent cardiac arrest. If the family of such a patient has made the decision to terminate life-support and also wishes their loved one to be an organ donor, it may be possible. Determining factors include the strength of the patient’s heartbeat and breathing effort. If in the opinion of attending critical care medicine specialists, the patient will experience a cardiac arrest within sixty minutes of withdrawal of ventilatory support, he or she may be a candidate for non-heart beating organ donation.

The scenario for non-heart beating organ donation is as follows: with the family’s informed consent, the patient is taken to an operating room and prepped for surgery. With transplant surgeons on "stand-by" in a nearby area, the patient is removed from the ventilator. Once cardiac arrest occurs, the patient is declared "dead" by his or her attending physician. Once death is declared, the transplant team moves to the table and the organ recovery begins and proceeds as it would for a traditional brain-dead organ donor.

With swift surgical action and expert technique, it is possible to recover viable kidneys and livers for transplantation from these patients. For the family grieving the loss of a loved one, this form of organ donation can bring some comfort. For more information about this form of organ donation or to receive sample hospital policies on this procedure, contact Iowa Donor Network at 1-800-831-4131.

When our youngest child was killed in a tragic car accident, I wasn’t sure I could go on without him. Truthfully, I don’t know that I really wanted to go on living. Organ donation allowed a part of our precious child to continue to live and believe me, I needed that for a long, long time.

I never really had the need that so many donor families have, to meet the recipient of Kyle’s organs, but in Colombus, Ohio, at the 1998 games, I had the chance to see a young man compete at table tennis. I have no idea who he was but after watching for five minutes, he had become "my recipient" and I cheered as loudly as anyone when he scored a point. Why didn’t it matter that he wasn’t actually Kyle’s recipient? He became Kyle’s recipient because he was alive and playing table tennis—because somewhere, someone like me, gave him a second chance of life.

Vicki Crosier is the Immediate Past Chair National Donor Family Council and a donor mom.
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uring the last several decades, advancements in the field of immunosuppressive pharmacology have been made that have significantly improved the clinical success we see in transplant recipients today. Drugs have been developed over the years that “turn down” the body’s own immune system in more specific ways and with fewer side effects. As we look to the future for the development of newer and better immunosuppression, it is important to examine the past and how these important discoveries have had an impact on transplant clinicians and patients.

In the early 20th century, scientists did not know much about the immune system and the manner in which it is used to defend against infectious organisms or recognize foreign tissue. Because of this, many transplants rejected and failed in this earlier period. In 1900, the first major breakthrough in immunology took place. Scientists found that there were different types of blood and they had to be matched in order to be compatible with one another. This led to fewer adverse reactions in patients receiving blood products.

The next relevant finding occurred in 1916 when scientists discovered the genetic makeup of an individual affected transplant rejection and survival. In 1944, the immunobiology of acute rejection was recognized by clinicians. This was a huge discovery that allowed investigators to believe that organ transplantation would be possible. In 1954 the first successful kidney transplant took place with the Berrick twins at the Peter Bent Brigham Hospital in Boston, Massachusetts. It was during this time period in the 1950’s that drug therapy became an integral part of the prevention of organ rejection.

The first group of drugs used for immunosuppression were the corticosteroids. These drugs mimic a hormone which is already produced in the body called cortisol. From the first corticosteroid to today’s prednisone, this class of drugs blocks the early steps in the inflammatory cascade that are responsible for organ recognition by the body and also rejection of a transplanted organ. They are a very effective group of drugs but they are not without side effects. Several adverse effects occur with corticosteroids. These side effects can include increased blood sugar, indigestion, problems with bone mass, increased cholesterol levels, increased appetite and changes in body fat. Despite all of these problematic side effects, the corticosteroids remain a mainstay in immunosuppression treatment.

The next big advance in drug therapy occurred when a drug entitled azathioprine (Imuran®) came on the market in the year 1962. This drug was unique in that it acts on cells of the immune system (B and T lymphocytes), the cells ultimately responsible for rejection. The drug has fewer side effects than the corticosteroids with the main ones being nausea, vomiting, diarrhea and lowered blood counts. With the combination of azathioprine and corticosteroids, more transplants were able to be performed. The first liver transplant took place in 1964 and the first heart transplant in 1967. Many years elapsed before any other breakthrough discoveries occurred.

In 1978, a drug was approved for use that is considered by many to be the cornerstone of immunosuppression. This drug is known as cyclosporine (Sandimmune®, Neoral®, Gengraf®, SangCyA®). Cyclosporine was first isolated from a soil fungus in the early 1970’s. Researchers concluded from studies that the drug had the ability to selectively inhibit the cellular immune rejection response. This drug proved to be the first one to substantially prevent or delay the rejection process in the transplant recipient. Despite its clinical superiority, the drug is not without side effects. Side effects can include tremors, excessive hair and gum growth, high blood pressure, increased cholesterol and kidney toxicity (especially in large doses). Another problem with cyclosporine is that the original formulation (Sandimmune®) was erratically absorbed into the blood stream which resulted in varying blood levels and clinical response. Because of this, blood must be drawn in order to provide consistent blood levels of the drug and make proper dosage adjustments. This drug also has numerous drug interactions. A new formulation of cyclosporine was created in 1995 entitled Neoral®. This formulation improved the problems with inconsistent absorption seen with Sandimmune® which made it more effective than its predecessor. Cyclosporine is still frequently used in many transplant centers in combination with other drugs.

Catalyzed by the success of cyclosporine, researchers were striving to find new and better ways to enhance the immunosuppression of drugs in order to decrease rejection and also to reduce if not eliminate the adverse effects from immunosuppression therapy. In 1985, monoclonal antibodies were introduced to the clinical world. These antibodies were bio-engineered. A drug entitled muromonab CD3 (Orthoclone OKT-3®) was developed to be used for the prevention and treatment of acute rejection. It is successful in reversing rejection in many patients. Side effects are usually the most severe for the first few doses that are given in the hospital. Most of these

Continued (on page19)
Ask any woman and she will tell you that there is a physical part of her body that she doesn’t particularly like: it could be her nose, her chin, her hair, her weight and the list goes on and on. Kidney transplant recipients are no exception.

My understanding came many years ago, when I met “Amber.” She was the beauty queen who lived next door. “Amber” won several beauty pageants and was even a runner up in the Ms. America pageant. I, on the other hand, did not have the long legs or society’s version of the “perfect body.” Kidney disease stunted my growth. (I’m 4’10”). I was on dialysis for 12 years having had three kidney transplants. I understand the roller coaster ride of fluctuating weight. After a transplant, the medication can cause uncontrolled hunger and makes it difficult to maintain a set body weight. At times my closet had four different sizes in it.

Prednisone can make your face puffy and leave a little pouch of fluid at the top of your back. This leads to constant changes in appearance that may be difficult to accept. Not to mention the number of scars my body has. I have had 34 surgeries to date.

Amber and I were an unlikely pair, but we did have one thing in common. We both focused too much attention on our bodies. Amber often criticized the way her stomach and thighs looked. She also refused food and exercised continuously — all in an effort to obtain the “perfect body.” I found it hard to believe that this beauty queen couldn’t see herself as others did — absolutely gorgeous.

It was during my friendship with Amber that I learned a very valuable lesson. I could not allow my appearance to control the way I felt about myself. I realized that physical beauty was not the answer to happiness and I began searching for the positive inner traits that I possessed. I soon discovered that I had more to offer than I ever could have imagined. People see us how we see ourselves.

One of the greatest challenges of living happily with kidney disease is accepting your changing body — especially since the changes often are not of the welcome variety.

Kidney disease stunted my growth. (I’m 4’10”). I was on dialysis for 12 years having had three kidney transplants. I understand the roller coaster ride of fluctuating weight. After a transplant, the medication can cause uncontrolled hunger and makes it difficult to maintain a set body weight. At times my closet had four different sizes in it.

Tips to rid yourself of the Body Image Blues:

[*Get Dressed*]
Combat the temptation to get down and stay there, I made it a habit to dress up occasionally or at least wear something besides my robe, sweats or other “icky” clothes.

[*Honor Your Scars*]
Every scar has a story, and for people with kidney disease, oftentimes the story is about how the procedure, that left the scar, saved your life.

[*Exercise and Eat Right*]
Proper nutrition and exercise always makes you feel better. Figure out what motivates you and do it.

[*Get Involved*]
Do things that you enjoy and discover your strong points and talents.

[*Help Others*]
Volunteering is a special gift we can give ourselves, especially when we are feeling down. There is no better way to feel better about yourself.

Since I stopped beating myself up for what I don’t look like, my life has taken on new meaning. Today at age 35, I believe that I am appreciated for who I truly am, and not for what I look like.

I have had my kidney transplant for over 12 years. I have been happily married to Dean, a wonderful man, for five years and he loves me completely (scars included). I tease him at times stating, “Will you still love me when I am skinny?” I still take steroids, but I am now convinced they are the secret to youth. (The puffiness they cause takes all the wrinkles out of your face!)

Love yourself unconditionally. We are valuable as individuals, and not just for our appearance. This is a crucial step to living a fulfilling life.

Lori Hartwell has lived with kidney disease for over 30 years. Her book titled Chronically Happy — Joyful Living In Spite of an Illness will be available in the summer 2002.
Michael has had few complications since his transplant in November of 1999, and is now a “healthy” eight-year-old with an adult-sized perspective on appreciating life. The most disturbing stretch of road for us has been the transition from chronic illness to gradually returned stamina as it relates to school. Seventy percent of adults are considered healthy enough to return to work, but 50 percent do not. Children, whose job is education, have no choice but to return to school, regardless of the physical challenges of their condition.

Many physicians encourage patients to return to school six weeks post-transplant. The rationale is not academically driven. They view school as the appropriate societal placement for children. They see kids thrive when they’re off the couch at home and integrated again with peers.

Educators sometimes view the return to school as one-dimensional, focusing on missed academics. A physician understands that this places unrealistic expectations on an already challenged child, but because regaining physical health is of utmost importance, they’ll still refer the child back to school. In Michael’s case, our pediatric nephrologist was open to initiate communication with the school to help develop achievable goals. This action on the part of the doctor is the single most effective way to support your child as he or she begins to face the many physical, emotional, social and academic challenges upon a return to school after transplant.

Do not hesitate to be politely assertive in making recommendations to your child’s teacher. There are many small modifications he or she can make to spiral your child upward toward success. Begin to build a binder, including your child’s medical information and articles such as this one, to document the needed support. You may want to ask your doctor to request the special education classification of POHI (Physically or Otherwise Health Impaired). An approximate three-year window under the POHI label requires that your child’s school make the unique compensations necessary. For example, a non-academic hurdle that ultimately affected academic performance for Michael was fatigue. Walking to and from the bus stop required too much physical endurance. The POHI label insured that the bus would pick him up and drop him off closer to our home. (Please note that in your state the special education classification may go by another name such as physically impaired. In any case each state is mandated to offer such a program for these children.)

Instructional expectations can be temporarily lessened offering quiet time coping tools such as writing or drawing in a journal, reading silently or independently playing an academically developing game like “Memory,” until stamina (the ability to focus and to stay on task), is more achievable.

Modified homework expectations are appropriate until home medical regimens, such as compliance in taking medications and blood pressures are established. These are often stressful for the child shortly after transplant. Time spent on these, plus homework may add stress to the time at home after a full school day. Down time is essential.

Begin to develop a relationship with the school principal because he or she can be a constant from grade to grade. The progression from compromised health and severe surgery to renewed wellness is a long and gradual road. The principal can be a mediator as your child moves into new classroom expectations each school year. Since emotional health promotes physical health, it is critical to gain understanding and support from your child’s school.

Michael’s medical and educational teams were both instrumental in bringing him to health and normalcy. Your transplant hospital may have a program available where the hospital staff will make a visit to the school to educate the staff and the students of the class that your child is returning to about transplantation. As parents, it is still up to us to close the circle and facilitate communication for the optimal care of our child.

Two years later, we are amazed at how many minute steps it has taken to see his huge growth. Our doctors didn’t tell us how much effort we would have to put into keeping educators inline with the long-term perspective.

You are your child’s greatest advocate. You are the leading partner within your child’s educational development. Be the expert you are!

Karen DeVries, kidney donor and mother of two (including Michael), teaches developmental kindergarten in Rockford Public School in Michigan. She is a development education Master’s candidate.
side effects are manifested as flu-like symptoms: headache, fever, chills, nausea and diarrhea. These generally go away in a few days when the patient’s immune cells are depleted to a very low number.

The 1990’s were a great decade for new pharmaceutical advancements. In 1995, two major drugs were approved by the Food and Drug Administration, tacrolimus (Prograf®) and mycophenolate mofetil (CellCept®). Like cyclosporine, tacrolimus was also discovered from a soil fungus. These drugs work very similarly to each other, however tacrolimus is much more potent than cyclosporine. Unfortunately, tacrolimus also has adverse effects attributed to it. These include nausea, vomiting, diarrhea, increased blood sugar levels and possible kidney toxicity.

Mycophenolate mofetil is a drug that was developed to take the place of azathioprine, a drug which had been around since the 1960’s. It prevents organ rejection by selectively inhibiting the growth of lymphocytes. These are cells of the immune system which attack foreign objects in the body. Adverse effects with mycophenolate mofetil include diarrhea, upset stomach and decreased blood counts.

In 1997 and 1998, further monoclonal antibodies were introduced, daclizumab (Zenapax®) and basiliximab (Simulect®). These drugs are termed IL-2 receptor antagonists and are bio-engineered from mice and human antibodies. Their mechanism of action is to decrease T-cell activity against transplanted tissue and are used along with cyclosporine and corticosteroids in order to prevent acute rejection. Daclizumab and basiliximab are very well tolerated without significant adverse effects.

Finally, in 1999 a drug whose compound was found on the remote Easter Island in 1964 became available for use in the United States. It is known as sirolimus (Rapamune). This drug is also used in combination with cyclosporine or tacrolimus and corticosteroids to prevent organ rejection in solid organ transplants. T-lymphocyte activation and production is blocked with this drug. Some of the adverse effects include high blood pressure, headache, increased cholesterol levels, nausea, vomiting, diarrhea, problems with wound healing and decreased blood counts.

Also in 1999, another new drug was approved by the FDA for use in the prevention and treatment of acute rejection (antithymocyte globulin-rabbit or Thymoglobulin®). Thymoglobulin was shown to be more effective than its predecessor ATGAM (antilymphocyte globulin-horse) in the treatment of acute kidney rejection. Thymoglobulin and ATGAM are known as ‘polyclonal antibody’ preparations.

Thymoglobulin, like OKT3 can cause flu-like symptoms, can reduce blood counts, etc. These side effects are usually worse early in the treatment course and become less noticeable as the treatment progresses.

From corticosteroids to bioengineered antibodies, immunosuppressive drug therapy has developed tremendously over the past 50 years. Patient and organ transplant survival is becoming more and more successful with the use of these treatments. Researchers continue to search for new compounds that have less adverse effects associated with them and that are more effective than the current therapies. The progress made in the development of immunosuppression has furthered our understanding of the immune system in general, a process that has not only benefited transplant patients but patients with cancer, HIV, infection and autoimmune diseases.

As more progress is made in the 21st century, clinicians are closer to finding ways to induce immune tolerance, potentially without drug therapy at all.

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There are lots of reasons to donate a vehicle. Funding kidney research and patient care are only a few. Make your car a Kidney Car. Cars that save lives. For more information, call 1-800-488-CARS.
The first successful pancreas transplant was performed in 1927 on a dog. In 1966 the first human pancreas transplant took place at the University of Minnesota. The glucose levels were immediately normal and the patient was free of insulin infections. Unfortunately, the patient died of rejection and infection within two months. Between 1966 and 1973, 13 more pancreas transplants were done, but only one worked for more than one year. There were many complications, including rejection. A few more transplants were done in the 1970’s, but most failed due to complications from the way the procedure was done and from rejection. Commonly, leaks occurred at the site of the stitches.

As early as the 1970’s islet cells were being studied for transplant. Islet cells are taken from a pancreas and injected into the recipient. Insulin comes from cells in the islets. Surgery is not required for this and so it reduced some risks for patients. As with most other early transplant procedures the results were poor in both animal and human transplants. All of these patients still required insulin injections.

By 1978, more pancreas transplants had been done, surgeons were now more experienced and there was an increased understanding of the immune system. Pancreas transplant survival was at 21 percent by 1982, and 42 percent by 1986. Important also was the availability of cyclosporine in 1983. Rejection was now more easily prevented.

Over the past 10 or more years pancreas and patient survival rates have continued to increase. The statistics from 2000 show a dramatic improvement, with graft survival at 81 percent and patient survival at 96 percent. A few transplant centers in the U.S. are performing islet cell transplants. The results are promising.

Even today, pancreas transplants are still considered to be experimental by some health insurance providers. Only in the last few years has Medicare provided payment for pancreas transplants. Before approval of the transplant most providers require proof of unstable glucose levels and/or lack of symptoms of low glucose levels.

Most transplant centers perform pancreas transplants with a kidney transplant, or later after a kidney transplant. Type 1 diabetics without kidney disease who are frequently unaware of very low glucose levels are candidates at certain centers. The risk of surgery and immunosuppression for these candidates must be less than living with this chronic disease.

Studies show that Type 1 diabetics receiving a pancreas and kidney transplant at the same time will do better than those having only a kidney transplant. The new pancreas protects the new kidney from the effects of diabetes. Insulin injection, frequent blood monitoring and dietary restrictions are no longer required. The purpose of pancreas transplant is improvement in quality of life. Now, thanks to the pioneer researchers and brave recipients this is a reality.

Cathy Morrison, MSN, CRNP is a nurse practitioner on the kidney/pancreas transplant team at Albert Einstein Medical Center in Philadelphia, PA.