Swedish Organ Transplant and Liver Center
Serving the Pacific Northwest and Beyond
In 1972, Swedish performed its first kidney transplant. That inaugural procedure was followed in 2003 with the first pancreas transplant and in 2011 with the first liver transplant. Today, more than 2,300 patients have come to us to receive an organ transplant. Our transplant program specializes in these three types of transplants. Through this kind of targeted expertise we are able to ensure patients receive the highest quality of care and have the best possible outcomes.

Swedish is one of seven adult kidney transplant centers and one of only three adult liver transplant centers serving the entire Pacific Northwest (Washington, Alaska, Idaho, Montana and Oregon). Over the years, our programs have grown, adding new medical staff and areas of expertise. We also opened the Swedish Liver Center and established the Liver Care Network to provide comprehensive hepatology care and to effectively manage patients with liver disease. We also opened the Swedish Liver Center and established the Liver Care Network to provide comprehensive hepatology care and to effectively manage patients with liver disease. To improve access and address patient convenience, we travel throughout the region and also incorporate telehealth as a means of facilitating local evaluations and follow-up care. Swedish’s affiliation with Providence Health & Services, which also offers transplant services at Providence Sacred Heart Medical Center & Children’s Hospital in Spokane, Wash., ensures a fully integrated approach to the services we offer.

In the four decades since that first transplant, our team has never wavered from its foundational goal of working closely with referring physicians to tailor services to each individual patient. Beginning with a patient’s first evaluation, we create the appropriate multidisciplinary team of experts to meet his or her needs. Along with the patient’s referring physician, the team may include specialists in transplant surgery, hepatology, nephrology, cardiology, endocrinology, infectious disease, bariatrics and psychiatry. Because waiting for and receiving a transplant is a life-changing event, our patients’ care teams also include nurse coordinators, pharmacists, dieticians, financial counselors and social workers. All members of a patient’s individualized care team bring years of experience and compassionate understanding, which ensures each patient who is scheduled for a transplant is as physically and mentally prepared as possible, and is fully engaged in the process.

As a nonprofit institution, Swedish often relies on the generosity of members of the community to help fund vital services. For Swedish Organ Transplant and Liver Center, donor support has made it possible for us to move into larger space in the renovated First Hill Medical Pavilion in Seattle. The new space will allow us to expand all of our vital programs and provide the best experience possible for our patients.

Despite increased awareness of the importance and urgency of organ donation, the need for life-saving transplants far exceeds the number of available organs. Many patients still wait one, two or even six or more years for an organ transplant. Over the years, we have become outspoken advocates for organ donation.

Through community outreach, education and organ care research, along with increased access, clinical expertise and patient-focused care, Swedish is giving patients a reason to hope.

Marquis E. Hart, M.D.
Director
Swedish Organ Transplant
More than 1600 people in Washington State are currently waiting for a kidney transplant. For more than four decades, Swedish Organ Transplant has been a regional resource for patients like these who have no other treatment option, other than long-term dialysis.

Using a multidisciplinary approach and offering a variety of innovative transplant options, the kidney transplant team has made it possible for patients with even some of the most challenging medical conditions to safely receive a successful kidney transplant.

Living Donor

About 41 percent of kidney transplants at Swedish are either related or unrelated living donor transplants. Living kidney transplants have the highest success rate of all transplant procedures. Additionally, unlike a deceased organ donation, recipients of a living kidney donation do not have to go on a waiting list and surgery can be scheduled at the convenience of the donor and the recipient.

Whereas a related living donor is often the first consideration for patients, Swedish has been a pioneer in the Northwest for kidney transplants from unrelated living donors. Often an unrelated donor is emotionally connected to the patient, such as a spouse, friend or co-worker; however, Swedish also offers a unique program for donors who are completely anonymous.
**Benevolent Donor Program.** Swedish’s Benevolent Donor Program (BCD) — the first of its kind on the West Coast — is a critical component to creating more connections between donors and recipients.

The transplant team at Swedish took more than two years to develop the BCD, which began in 2002. These donors are altruistic individuals who volunteer anonymously to give a kidney to a patient who is on the Swedish waiting list. Many benevolent donors are long-time blood donors, are on the bone-marrow registry or know of someone who has died waiting for a transplant. The BCD does not solicit organ donors. Rather, it provides the avenue for these extraordinarily generous individuals to give the gift of life. To ensure the safety of the donor and the recipient, potential donors must go through a stringent screening process.

**Paired Exchange and Chain Transplants.** Both paired exchanges and chain transplants allow patients to proceed with transplantation, albeit not with their original intended donors. In paired exchanges, two patients who are blood or tissue incompatible with their intended living donors swap donors in order to get a compatible kidney. A chain matches multiple incompatible donors and recipients.

Swedish performed its first paired exchange in 2006. Partnerships with other transplant centers and membership in the National Alliance for Paired Donation help facilitate these transplants. To date, there have been 25 paired exchanges and two chain transplants at Swedish.

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**A First in the Pacific Northwest**

In April 2015, Swedish announced the Pacific Northwest Regional Kidney Paired Exchange Program’s first three-way kidney transplant, which saved the lives of three patients. Six surgical procedures involving more than 30 medical professionals, four at Swedish and two in Oregon, were performed in a single day.

The steps that led to the successful three-way kidney pairing included:

**Step 1: The Mismatch**
- A daughter (Donor A) wanted to donate a kidney to her dad (Recipient A), but they had incompatible blood types.
- A brother (Donor B) hoped to save the life of his brother (Recipient B) with a kidney donation, but found his kidney would be rejected due to a positive blood reaction.
- A close friend (Donor C) agreed to donate a kidney to save a friend (Recipient C), but learned the kidney would be rejected.

**Step 2: The Match**
All three willing donors were paired with three other patients.

**Step 3: The Surgery**
- The father, currently living in Yakima, received a kidney from the friend in Oregon.
- The friend in Oregon received a kidney from the brother in Seattle.
- The daughter, also from Yakima, donated to the brother living in Seattle.

**Step 4: Post Surgery**
The patients are recovering and all are in good health.

Additional labels for the chart below — include the recipient/donor labels but add the following additional descriptions:
1. Recipient A: Father (Yakima, Wash.)
2. Donor A: Daughter (Yakima, Wash.)
3. Recipient B: Brother (Seattle, Wash.)
4. Donor B: Brother (Seattle, Wash.)
5. Recipient C: Friend (Oregon)
6. Donor C: Friend (Oregon)
Deceased Donor

Kidneys from deceased donors account for about 50-60 percent of our transplants. The success rate with deceased donor kidneys is very good, but patients who are not candidates for a living kidney transplant typically wait months or years for a good match.

Desensitization Program

About 30 percent of patients are sensitized to foreign tissue, which increases the risk of antibodies rejecting a donor kidney. Sensitization may occur as a result of previous contact with foreign tissue, such as during pregnancy, a previous transplant or a blood transfusion.

A cross-match test is performed on all donors and their recipients. Positive results indicate the presence of antibodies. Patients with positive results cannot proceed with transplantation because the antibodies will immediately reject the kidney. These patients often wait much longer for a kidney from a deceased organ donor or through a paired exchange. In some cases, however, carefully selected patients can go through a desensitization process to temporarily remove the antibodies. Typically, several treatments, as well as a course of anti-rejection medication during the desensitization process, are required.

Patients receiving a kidney from a living donor or carefully selected patients that are at the top of the deceased donor waiting list have the option of participating in desensitization.

Transplant of Obese Recipients

Swedish is one of only a few transplant programs in the country, and the only program in Seattle, that does not have a pre-determined body mass index (BMI) cutoff for kidney transplant recipients. We use the same criteria to evaluate obese (BMI of 30-40) and morbidly obese (BMI greater than 40) transplant candidates as we do non-obese candidates. In the case of high-BMI patients, we work closely with their primary-care providers and with bariatric surgeons at Swedish to identify the best possible treatment, including the possibility of transplant.

Research. In 2004, transplant surgeons at Swedish published the results of a study that compared kidney transplant results of morbidly obese and non-obese patients who received a transplant between 1996 and 2000. The results showed that morbidly obese transplant recipients had more complications, such as a greater risk of wound infections and readmission within the first six months, and longer hospital stays (6-8 versus 5-6 days). However, the study also showed that morbidly obese patients had similar survival rates as non-obese recipients. The surgeons concluded that survival and quality of life overcame any potential risk of complications and longer length of stays, which could be managed effectively.

BRENDA TURNS AROUND HER LIFE

“I was an obese teenager who was diagnosed with type 2 diabetes when I was 17 or 18 years old. Back then, it was difficult to manage diabetes. Instead of blood glucose meters, we used tablets to measure the amount of glucose in our urine. Unfortunately, by the time glucose shows up in your urine, you have a much greater amount in your blood. It was too easy for me to ignore my diabetes and the damage it was doing to my body.

By the time I turned 35, I was very sick and diabetes had taken a toll on my body, including my pancreas and kidneys. The day I started dialysis, I was also placed on the transplant waiting list. Two years later, I got the call. A pancreas and kidney were available at Swedish.

Fourteen years later, I am a testament to how a person with diabetes can turn around her life. I am blessed that I still have my eyesight and only have a little diabetic neuropathy. Today I don’t mess around. I sleep well, eat healthy and take my medicine religiously. I owe it all to my organ donor and to the doctors and nurses at Swedish who made my new life possible, to my strong faith in God and to myself.”

Brenda Bernstein
pancreas/kidney transplant patient

Vijay Vidyasagar, M.D., MPH, transplant nephrologist, and Nelson Goes, M.D., transplant nephrologist and medical director of the Kidney Transplant Program.
Multi-Organ Transplants

Although the majority of kidney transplants at Swedish are single organ, surgeons also perform kidney/pancreas and kidney/liver transplants. Pancreas transplants are primarily performed on patients with type 1 diabetes receiving insulin therapy. These patients often have chronic renal failure or end-stage renal disease, and are on dialysis. The patient assessment includes weighing the lifelong risks and benefits of immunosuppression therapy versus insulin injections and dialysis. More than 80 percent of pancreas transplants are performed at the same time as a kidney transplant. A healthy deceased-donor pancreas that can produce insulin can significantly improve the recipient’s quality of life.

The kidney transplant program at Swedish has a long tradition of excellence — excellent care and excellent outcomes. Patients from throughout the region and across the country acknowledge not only the program’s reputation, but also the long-term commitment to follow-up care, and turn to Swedish and its transplant team for this invaluable gift of life.

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<thead>
<tr>
<th>KIDNEY TRANSPLANT OUTCOMES</th>
<th>Observed</th>
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<tbody>
<tr>
<td><strong>One-Year Post-Transplant Outcomes</strong> (July 1, 2012 and December 31, 2014)</td>
<td></td>
<td></td>
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<tr>
<td>Adult graft survival (based on 219 transplants)</td>
<td>98.63%</td>
<td>95.37%</td>
</tr>
<tr>
<td>Adult patient survival (based on 188 transplants)</td>
<td>99.47%</td>
<td>97.87%</td>
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<tr>
<td>Pediatric graft survival (based on 2 transplant)</td>
<td>100%</td>
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<tr>
<td>Pediatric patient survival (based on 1 transplant)</td>
<td>100%</td>
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Source: SRTR December 2015 Release

“In 2004, I visited my doctor because I wasn’t feeling well and my skin was yellowish. I learned my kidneys were failing. I began a three-day-a-week dialysis regime, which quickly became my full-time job as I waited for a transplant.

The folks at Swedish said I couldn’t smoke and could only drink a small amount of alcohol, and they taught me how to eat right. They said we were a team. They would guide me, but I had to do my part. Together we made sure I was physically prepared for my transplant.

I waited six years before they found an anonymous living donor. After my transplant I felt a little better every day. And today, after six years, I’m as active as I ever was – maybe more so. My partner-in-life and I are now on the road full time in our RV, and I still kayak and hike. I do my blood work and stay in contact with my doctors while we are traveling.

I wake up each day feeling privileged and thankful for the gift I’ve been given. I appreciate everyone at Swedish who has been involved with my care. They are so dedicated. You can see their love and passion for what they do. They are a great support group – one I will have for the rest of my life.

Everyone has a choice. They can sit in a chair and feel sorry for themselves or they can get up and live. I choose to live. My five-year transplant anniversary was really special, but now I’m looking forward to the tenth!”

Larry Miller, kidney transplant patient

Sanjit Reddy, M.D., transplant nephrologist, and Nidyanandh Vadivel, M.D., transplant nephrologist and medical director of the Kidney Living Donor and Pancreas Transplant programs.
According to the American Liver Foundation, at least 30 million people — or one in 10 Americans — have some form of liver disease, and liver-related disease has grown as a leading cause of illness and death in the United States.

In 2011, Swedish established the Liver Center, which has grown significantly since then. Swedish liver-disease experts have access to the newest therapies and most advanced technologies to extend life and enhance a patient’s quality of life. In 2012, after completing the requisite number of liver transplants, the Centers for Medicare and Medicaid approved Swedish as one of four liver transplant centers serving adults in the Pacific Northwest.

The center thrives on collaboration, innovation and the acquisition of leading-edge technologies and therapies. The newest technology in the center’s diagnostic arsenal is transient elastography (FibroScan®). This completely painless, totally noninvasive diagnostic tool allows many patients to avoid invasive liver biopsies. It is a specialized ultrasound that measures the degree of liver scarring and stiffness. The immediacy of the results helps physicians stage the disease, formulate a diagnosis and treatment plan, and monitor disease progression.

With comprehensive strategies and state-of-the-art procedures, the Liver Center team is able to diagnose and treat the full range of hepatobiliary disease in the liver and biliary system, including conditions caused by viral, bacterial, parasitic infection, neoplasia, toxic chemicals, alcohol consumption, poor nutrition, metabolic disorders or cardiac failure. Liver Center specialists incorporate medical management and some of the most advanced technologies, which may include traditional or robotic surgery, to extend life and enhance a patient’s quality of life.

The center also has access to the latest direct-acting-antiviral (DDA) drugs for patients with hepatitis C. These medications, such as Harvoni® and Viekira Pak®, and others that are in the approval pipeline, have been shown to be highly effective, with cure rates greater than 95 percent. This type of research-based medical advancement, along with many ongoing clinical trials, provides clinicians a full complement of liver-disease management tools.
Despite many breakthroughs in the management of liver disease, however, liver transplantation continues to be the gold-standard treatment for some patients who have irreversible liver damage. It is the only option for patients facing imminent liver failure or end-stage liver disease, which is the final stage of many types of liver disease. Cirrhosis, viral hepatitis, genetic disorders, acute injury, metastatic liver cancer, autoimmune disorders, obesity, and toxins and drugs are factors that cause end-stage liver disease and liver failure. Therefore, the transplant team works seamlessly with the center’s liver-disease specialists to devise comprehensive, patient-centered assessments.

**Liver Transplant.** Thorough pre-transplant evaluations increase the likelihood of success. Assessments include clinical and psychological evaluations, as well as a determination of social and family support. Patients considered for liver transplantation must also have no active alcohol or substance abuse problems before they can be listed on the national waiting list.

In general, patients are evaluated at Swedish. However, Swedish has partnered with its Liver Care Network sister hospital, Providence Sacred Heart Medical Center in Spokane, Wash., to provide local assessments close to some patients’ homes. Rather than traveling to Seattle on multiple occasions, this allows a patient living in the Spokane area to be assessed and to receive ongoing follow-up care locally, while only traveling to Seattle intermittently for evaluation and for the transplant procedure.

**Liver Care Network.** The mission of the Swedish Liver Care Network is to improve liver health in the Pacific Northwest and eventually throughout the regions served by Swedish and Providence. The network initially began in partnership with Providence Sacred Heart in Spokane, but it has the long-term objective to integrate and coordinate liver disease management services across multiple Swedish and Providence hospitals. This integration will help standardize liver care, advance interdisciplinary research and education, and establish evidence-based best practices and treatment guidelines for common liver ailments, such as hepatitis C, fatty liver disease, liver cancer, and for patients pre and post-liver transplantation. The network will also facilitate continuity of care using the appropriate local and regional resources to support a care plan customized to each individual patient.

### LIVER TRANSPLANT OUTCOMES

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Source: SRTR December 2015 Release

“...I was diagnosed with hepatitis C while my wife, Kanji, and I were living in Japan. As my condition deteriorated, we decided to move back to the United States. The hepatitis C progressed into cirrhosis of the liver and then to end-stage liver disease. I was being cared for by a local doctor. However, by 2014 my condition had deteriorated so much my doctor recommended I go to Swedish because they were the best at treating liver disease.

When we arrived at Swedish the transplant team came into my room with big smiles on their faces to tell me that I had been added to the transplant list and that I was number one. I was so fortunate. I didn’t have to wait weeks or months or years like some people. My surgeons rejected the first two livers, but the third liver was perfect. And — here I am.

Time is much more precious now — every minute. I have hope in humanity by seeing these people I had never met before putting in so much time and effort to save a life, which happened to be mine. Thank you from the bottom of my heart.”

Don Elliget, liver transplant patient
Kris V. Kowdley, M.D., general and transplant hepatologist, and director of the Swedish Liver Care Network and Organ Care Research.

The Organ Care Research Department, which is dedicated to Swedish Organ Transplant and Liver Center, has an ambitious agenda that supports research in kidney, liver and pancreas diseases, and also in organ transplantation. Through this research, our patients may have access to alternative and novel therapies. Our organ care research team includes a research manager, research coordinators, a doctoral-trained scientist and a senior laboratory technician.

The space dedicated to research includes facilities for both laboratory studies and clinical trials, which gives Swedish the opportunity for bench-to-bedside research. Using a broad array of funding sources, including several grants from the National Institutes of Health, a major focus is in the areas of nonalcoholic fatty liver disease (NAFLD) and nonalcoholic steatohepatitis (NASH) at both the basic and translational level, as well as clinical trials in cholestatic liver disease and hepatitis C.

In addition to our focused areas of research, the program currently has ongoing studies in immunosuppressive agents and approaches in kidney transplantation, and novel therapies for liver failure. It is also developing liver, kidney and pancreas registries and repositories to archive tissue samples and clinical data, enhancing research into the diagnosis and treatment of diseases affecting these organs.

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It is more than just clinical expertise that has contributed to Swedish’s reputation as a top-level transplant program. It is also the cadre of dedicated health-care professionals who support and advocate for each patient from the initial evaluation, through the waiting and eventual transplant, and long after the patient leaves the hospital.

Nurse navigators, social workers, dieters, behavioral health professionals, pharmacists and financial counselors team up to ensure patients who need a transplant get on the right pathway and remain there throughout the process. There are many requirements that patients must meet before they can be placed on a waiting list. Barriers to candidacy, such as unstable mental health, limited or no care-giver resources, or drug or alcohol abuse, must be resolved. Many patients need professional help and guidance to be successful. Transplant social workers coordinate with Swedish and community resources to find the right mix of support services, including travel and lodging assistance when the patient comes to Seattle for the transplant. They truly become multidisciplinary advocates for their patients.