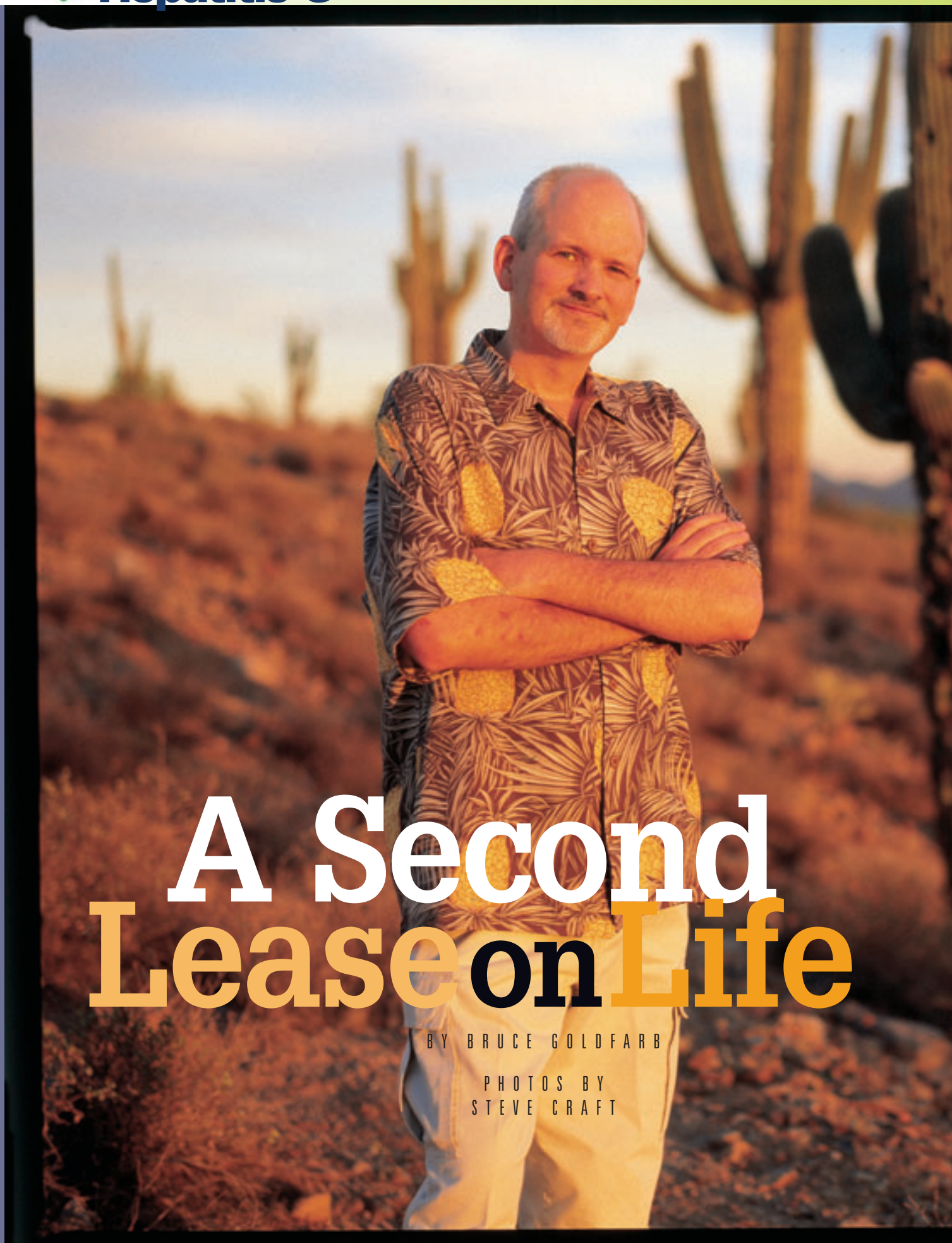
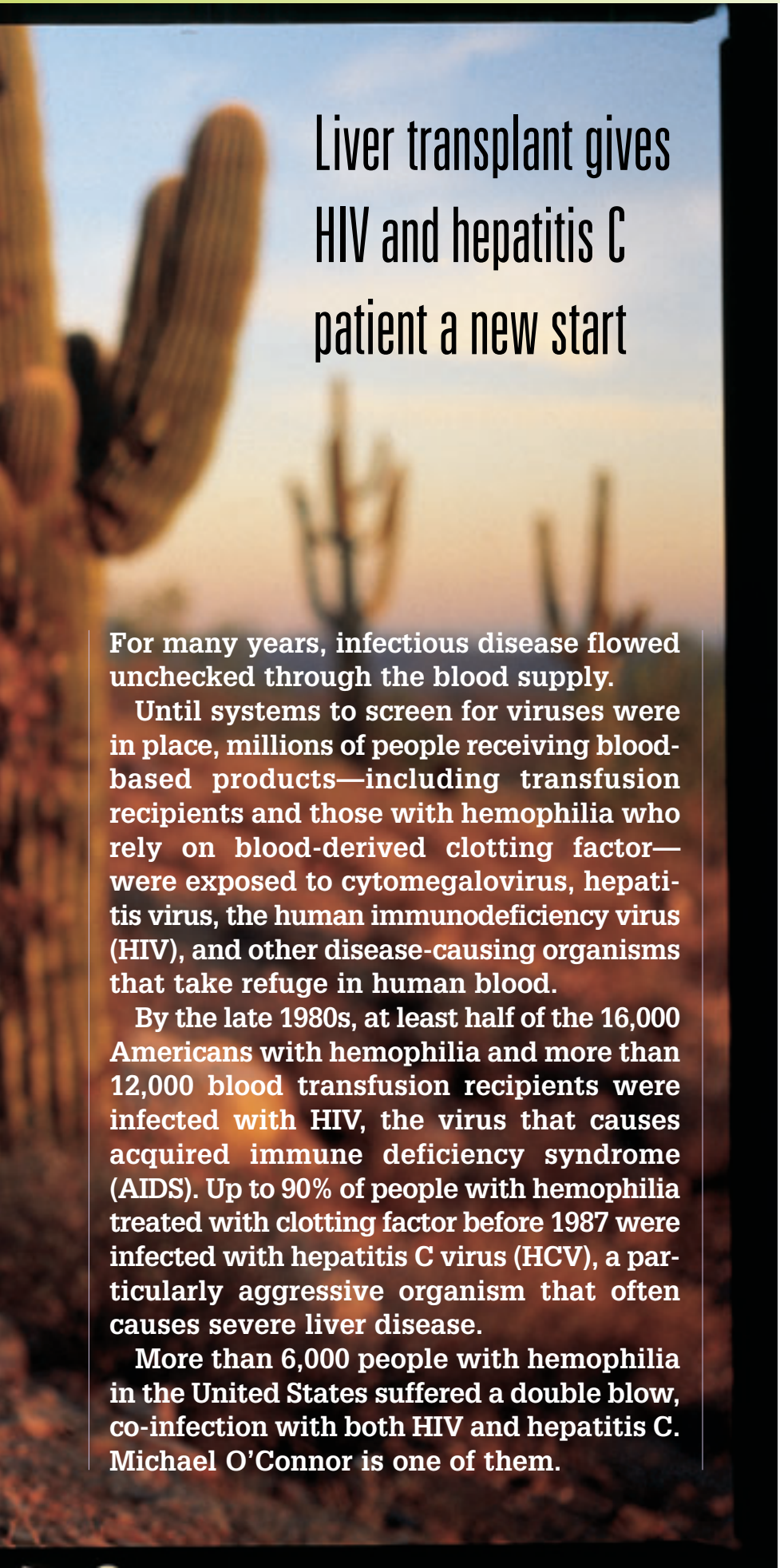


A Second Lease on Life

BY BRUCE GOLDFARB

PHOTOS BY STEVE CRAFT



Liver transplant gives HIV and hepatitis C patient a new start

For many years, infectious disease flowed unchecked through the blood supply.

Until systems to screen for viruses were in place, millions of people receiving blood-based products—including transfusion recipients and those with hemophilia who rely on blood-derived clotting factor—were exposed to cytomegalovirus, hepatitis virus, the human immunodeficiency virus (HIV), and other disease-causing organisms that take refuge in human blood.

By the late 1980s, at least half of the 16,000 Americans with hemophilia and more than 12,000 blood transfusion recipients were infected with HIV, the virus that causes acquired immune deficiency syndrome (AIDS). Up to 90% of people with hemophilia treated with clotting factor before 1987 were infected with hepatitis C virus (HCV), a particularly aggressive organism that often causes severe liver disease.

More than 6,000 people with hemophilia in the United States suffered a double blow, co-infection with both HIV and hepatitis C. Michael O'Connor is one of them.

The soft-spoken, 45-year-old Arizona resident is a medical pioneer of sorts. Among the first co-infected people with hemophilia to survive liver transplantation, his experience hints at the prospects for thousands of others facing the devastating effects of hepatitis C.

Almost Family

For O'Connor, who grew up outside Rochester, Minnesota, the prestigious Mayo Clinic was practically family. He began receiving medical care at Mayo Clinic when diagnosed with severe hemophilia A in 1959, at six months of age, when a bleeding tendency became apparent after his circumcision.

Over the years, treatment for hemophilia continually improved. As children, when O'Connor and other patients with hemophilia developed bleeding problems, they were treated with whole blood, which contained platelets and clotting factor. A concentrated form of factor VIII developed in the 1960s, cryoprecipitate, is produced by slowly freezing and thawing plasma. Plasma from thousands of donors is pooled to make a volume of factor VIII concentrate.

In 1982, O'Connor received a letter from the Mayo hemophilia treatment center informing him that he may have been exposed to an infectious agent believed responsible for a newly recognized entity—AIDS—that had emerged in certain populations, particularly homosexual men. One of the donors who contributed to a dose of factor VIII concentrate was infected with the virus later known as HIV, infecting O'Connor and an unknown number of others who received factor from the same batch.

Little was known then about AIDS except that it devastated the immune system, leading to rare and opportunistic infections and cancers such as Kaposi's sarcoma, and seemingly rapidly leading to death.

As a 22-year-old and married just a year, O'Connor struggled with the ramifications of the Mayo letter. "I was diagnosed early, when there wasn't a lot of information about AIDS," he says. "There was a lot of stigma because it was considered a gay disease."

Although the risks to partners and offspring were still largely unknown, O'Connor and his wife decided to have a baby, Mallory, now 18. Mother and child fortunately avoided being infected with the virus.

Michael O'Connor (left), two years after a life-saving liver transplant.

From Patient to Practitioner

After receiving his degree in health physics, O'Connor began working in radiation oncology at Mayo Clinic, relocating to Scottsdale, Arizona, when the institution opened a hospital there in 1987. He started up the radiation oncology department, while continuing to receive hemophilia care in Rochester during his frequent visits to the home office.

O'Connor was involved in the diagnosis and treatment of cancer patients, until word got around the medical center that he was HIV-positive. Co-workers questioned the propriety of having HIV-positive personnel in the operating room. "There were concerns about me working around open incisions, handling needles and sharp instruments," he says. "It started to get a little ugly, so I had to make a job change."

In 1994, O'Connor left the clinical arena for an administrative position at the hospital.

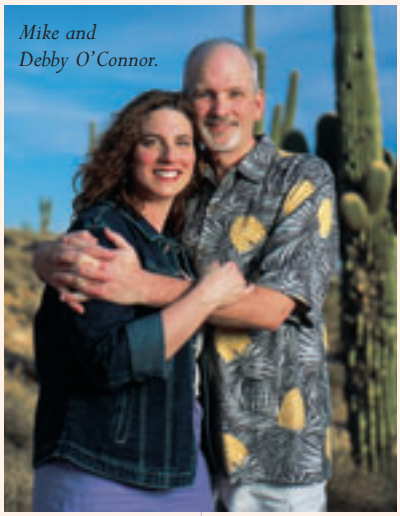
Advances in antiviral drugs soon transformed HIV infection. The survival of HIV-positive people improved dramatically. No longer a death sentence, HIV infection is now managed like a chronic illness. Like many HIV-positive people, O'Connor never developed an opportunistic infection or other serious symptom of AIDS.

What O'Connor didn't know was that through factor VIII therapy he was also infected with another deadly virus—hepatitis C.

Viral Co-Infection

Hepatitis C is the most common chronic blood-borne infection in the US. Almost 3.9 million Americans are infected with HCV, and about 20,000 new cases are reported each year, according to the Centers for Disease Control and Prevention (CDC).

In many cases, the virus causes few health problems. Up to half of people exposed to HCV are unaware that they are infected. "Many people are living with hepatitis C and don't even know it," says surgeon Chris Hughes, MD, of Mayo Clinic in Jacksonville, Florida. "In fact, their liver is barely affected by it."



Mike and Debby O'Connor.

About 75% to 85% of people exposed to HCV develop chronic infection. In the US, about 2.7 million people have chronic HCV infection, according to CDC. Nearly three-quarters of these people develop chronic liver disease.

The virus takes a more destructive course in many of those with chronic HCV infection, impairing the liver's ability to cleanse the blood. The skin and whites of the eyes of persons with hepatitis are often discolored yellow with jaundice. Hepatitis makes itself known by a rise in liver enzymes, which are measured by blood tests.

If HCV progresses and causes liver failure, it can lead to death if the liver is not transplanted for a healthy one. Every year, 8,000 to 10,000 Americans die from end-stage liver disease caused by HCV—a number experts expect to rise dramatically in coming years as the affected population grows older and has time to develop virus-related complications.

People who are co-infected with HIV tend to be affected more severely by HCV, says Guy Neff, MD, medical director of liver transplant services at the Health Alliance of Greater Cincinnati. Co-infected people "have a more aggressive course," he says. "They're more difficult to treat, more difficult to keep [the HCV] under control. The virus tends to proceed at a more rapid rate than in a non-HIV population."

The incidence of HCV-related liver disease among those who are HIV-positive has increased dramatically in recent years. According to Neff, hospital admissions for chronic viral hepatitis among HIV-positive people has increased from 9% to 16% since 1996, while deaths due to end-stage liver disease jumped from 9% to 45%. Liver failure is the leading cause of death among those co-infected with HIV and HCV.

Antiviral Therapy Effects

In 1996, symptoms of HCV reared their ugly head as O'Connor's liver enzymes rose precipitously and other symptoms became more apparent, particularly fatigue and depression.

O'Connor went on a course of antiviral therapy, a regimen of interferon and ribavirin in three weekly injections. "They make you feel like you have the flu," he says. The HCV infection failed to respond to the therapy, however, and the symptoms of liver failure grew worse.

"I was very fatigued, falling asleep at my desk," says O'Connor. "One day I went in to work, put my head down at 9 a.m. and woke up at 4. No one called me all day. I realized then that it wasn't fair to me or to the company." In March of 1997, he went on disability from Mayo Clinic.

Although increasingly distressed by liver failure, O'Connor remained active in the hemophilia community, serving as president of the Hemophilia Association in Arizona. At an association fundraising event in 1997, he met Debby, a development and public relations professional who became his second wife. The couple share a passion for summer camps for youth with hemophilia.

O'Connor's liver continued to deteriorate, and in May of 2000 he developed painful gallstones that required risky surgery to remove the inflamed gallbladder. He developed ascites, the accumulation of massive amounts of fluids in his abdomen. While in the throes of fluid accumulating in his abdomen, he nearly went into respiratory arrest.

As the inevitable became obvious, the O'Connors and their medical team began to contemplate liver transplantation—an option that until recently was not available to HIV-positive people.

Risky Live-Saving Surgery

End-stage liver disease caused by HCV is the most common reason for liver transplants among adults in the US. About 5,000 people received a liver transplantation in 2002, the most recent year for which data are available, according to the United Network for Organ Sharing, the nationwide transplantation coordinating center.

Today, more than 17,000 people are on the waiting list for a donated liver, and each year about 2,000 will die while still waiting.

Many surgeons opposed the notion of liver transplants for HIV-positive patients. The main objection was that allocating livers to HIV-positive patients may not be the best use of a limited resource. "Organs were so scarce that they shouldn't be used on somebody who is going to die," says O'Connor.

Doctors were also unsure how the body of an immune-compromised person would respond to a new liver and the accompanying life-long regimen of immune-suppressing drugs so the foreign organ is not rejected. They knew that if a person had HCV, the new liver would be infected as soon as the blood supply was connected. But HIV was a different matter entirely. "They thought [immune-suppressing drugs] would be a double-whammy that would kill them," says Debby O'Connor.

Pilot Study Availability

In 2001, when O'Connor's liver was in severe failure, only three medical centers in the country were performing transplants on HIV-positive patients: University of Pittsburgh, University of California–San Francisco and University of Miami. But, all had long waiting lists at that time.

By this year, a couple hundred HIV-positive people have received liver transplants, which are now performed at about a dozen medical centers across the country.

Then Mayo Clinic announced that its hospital in Jacksonville, Florida, would begin liver transplants with HIV-positive patients in a small pilot study of five subjects. The first patient, who was quite sick prior to surgery, died just before the six-month mark from "rapidly recurring hepatitis C," Hughes says.

O'Connor was the hospital's second patient. He and his wife went to Jacksonville for five exhausting days of appointments, interviews and assessments, with Debby taking the lead as her husband's advocate and medical manager.

Criteria for receiving a liver transplant were fairly strict. The patients must have had no history of opportunistic infection typical of AIDS and low "viral load" levels indicating that HIV was held in check.

"They wanted a well-managed and fairly healthy person with HIV who happens to be deathly ill with hepatitis C virus," O'Connor says. "You had to be the healthiest dying person ever."

In September, the O'Connor's received the call from the hospital—it was time for the transplant. Along with association executive director Michael Rosenthal, the couple flew to Jacksonville. "Mike was bright yellow, wearing a mask so as to not contract anything, in a wheelchair, with a service dog," recalls Debby. "We were quite a sight."

Within two weeks, O'Connor received the liver of a 17-year-old boy. Since the new, healthy liver now produced factor VIII, he was essentially cured of hemophilia.

Nine days after the surgery, the couple drove two hours to Orlando, Florida, where the National Hemophilia Foundation was holding its annual meeting. O'Connor's chapter was slated to receive several awards, including one for starting a summer camp in Arizona. "I was moving pretty slow, but I wanted to walk up and receive at least one of them," he says.

Mike and Debby were back home in Arizona in time for Thanksgiving. His HIV viral load remains so low that it is not measurable—"as good as you can get with HIV," he says. Since taking a course of the newer pegylated interferon and ribavirin, a more effective once-weekly injection, his HCV viral load has become undetectable.

By this year, a couple hundred HIV-positive people have received liver transplants, which are now performed at about a dozen medical centers across the country. Studies show that the outcomes are comparable to HIV-negative patients. "All the data show that they do quite well," says Hughes. New techniques have broadened the pool of available organs, including live donation and "split-liver" procedures in which one organ is given to two or more recipients.

Liver transplantation for those who are HIV-positive "is still considered experimental by a lot of insurers, but that's changing," says Neff.

The National Institutes of Health began a multi-site study of HIV-positive liver and kidney transplants at 13 medical centers in the US. About 120 people are expected to receive new livers in the study. Hughes hopes that the study is a start of wider acceptance and availability of liver transplantation for HIV-positive people in need.

The O'Connors have made it their mission to inform people affected with HCV to take care of the illness before chronic liver disease develops. Mike is just beginning a three-year term on NHF's Board of Directors. His pioneering continues.