On a friday evening in late January, Carol Palumbo sat up in bed on the sixth floor of the Milstein Hospital Building at the Columbia-Presbyterian Medical Center in upper Manhattan, waiting for the most important phone call of her life. Carol, a 46-year-old hairdresser and divorced mother of one, had been on a waiting list for a heart transplant for nearly two and a half years, and had spent the last month and a half in the hospital because her heart had become too weak to sustain her without the help of intravenous medication.

Life with a failing heart is tenuous. You often feel breathless exhaustion even at rest. You gain weight without eating, your body's water pools at the extremities, bloating them for lack of a strong enough circulating pump. In the weeks before she was admitted to the hospital, Carol had to sleep sitting up or else drow in the unpumped blood and fluid that collected in her lungs whenever she lay back.

Her hands and feet, she said, were always cold. Her complexion was gray, her ankles swollen. Her speech was perforated with urgent, shallow breaths. Daylight looked paler to her. Yet in the general diminishment of all her body's functions, odd ones had rallied to compensate -- her sense of smell, for one. Otherwise faint, apparitional days were cluttered with too-strong odors; perfumes and colognes seemed more substantive to her than their wearers.

On the United Network for Organ Sharing's national computerized transplant-candidate list, Carol had been designated "Status 1" -- her case was most urgent. And now, it seemed, her wait was about to end. A few hours earlier, a transplant coordinator at Columbia-Presbyterian, one of the country's most active heart transplant programs, had phoned to say that a suitable heart may have been found and that Carol should just sit tight for confirmation.

"Where am I gonna go?" she asked, casting a disgusted glance at the intravenous rigging that, for the past six weeks, had been running her life. A six-foot-high metal pole on a tripod wheel base, it had a computerized "telemetry box" attached to it to monitor the steady flow of a drug called dobutamine directly into her dying heart, coaxing it to contract. "I hate this thing," she said. "This isn't living."

Just three years ago, Carol was living what she describes as a normal, active life. The middle child in a family of seven, she owned and ran her own beauty shop, Carol's Hair Place, in her hometown of Brewster, N.Y. "I kept in good shape," she told me the first time I met with her at the hospital. "I used to work out on a treadmill and do five-mile speed walks after work to get all those ladies' voices out of my head."

But in the winter of 1994 her heart began to fail. She found herself becoming short of breath just from washing a customer's hair. The first doctor she visited told her it was all in her head. Another treated her for asthma. On the advice of a friend, she eventually went to a hospital in nearby Danbury, Conn., where tests revealed that she had advanced dilated cardiomyopathy, a disease of the heart muscle that causes it to distend and lose its contractility. Her heart was nearly three times its normal size and working at about 20 percent of its capacity. The condition is often difficult to diagnose. It can be inherited, but there was no history of it in Carol's family, and she showed no indications of the other ailments typically associated with dilated cardiomyopathy, like hypertension or valvular disease. In May 1995, her case was referred to the Columbia-Presbyterian Heart Failure Center, where tissue biopsies revealed that a virus -- perhaps tuberculosis, perhaps a common cold -- had attacked her heart, doing irreparable damage to the muscle.

Carol's cardiologist, Dr. Donna Mancini, who is also the medical director of the transplant program at Columbia-Presbyterian, had her evaluated for a heart transplant, and over the next two years, Carol was listed as a Status 2 candidate, meaning that she was able to wait for her heart outside the hospital, living a limited life on a variety of medications. She wanted to work but couldn't; she met and became engaged to a 36-year-old construction worker named Jimmy Tierney. But this past December, in a rush to buy Christmas gifts and arrange a party for her daughter April's newborn baby girl, her heart began to fail completely, and she was forced to go to the hospital.

"I was real upset," she said, still waiting for the phone to ring, "it being Christmas and all." She shook back a full head of blond hair and stared out the window at the snow just beginning to fall through the strung lights of the George Washington Bridge. "It's sad all around when you think about it. I mean, this is a sick way to get better, someone having to die for me to get a heart. But then I'm not living, either. I'm kind of backed into a corner here."

There are many forms of severe heart failure and no real remedies for any of them. Cardiomyopathy is a general diagnostic term for disease of the heart muscle. There is dilated cardiomyopathy; hypertrophic cardiomyopathy, in which the walls of the left ventricle, the heart's main pump, and of the inner-septum muscle, which separates the heart's right and left chambers, thicken and impede the heart's pumping action, and what is known as restrictive cardiomyopathy, in which the heart's ventricular walls become excessively rigid, preventing the chambers from adequately filling with blood.

These conditions are often idiopathic, meaning of obscure or unknown origin. Sometimes they are a result of a genetic flaw, and other times the secondary result of other disorders, like high blood pressure, valvular disease, viral infection or cardiac ischemia -- insufficient blood flow to the heart muscle because of blockages in the blood vessels, the very blockages that cause heart attacks. Heart failure is often the end result of a number of heart attacks.

A variety of inflammatory diseases affecting the pericardium -- the moist, fibrous, two-layered sac that surrounds and protects the heart -- can also result in heart failure. A person can, for example, develop "bread-and-butter heart," in which the inflamed pericardium is covered by a thick, fibrous exudate resembling, as it is described in Stedman's Medical Dictionary, what is
"produced by separating two slices of buttered bread"; or "hairy heart," in which that fibrous exudate takes on a fuller, "shaggy" appearance; or "frosted heart," in which the pericardium develops a thick white coat like cake icing, or "armored heart," in which the pericardium calcifies as a result of chronic inflammation.

Infants might be born with a "three-chambered heart." Pregnant women can develop, for unknown reasons, irreversible heart failure or "peripartum cardiomyopathy" in the last month of pregnancy or the first few months after delivery. And sometimes a heart can be done in by environmental and behavioral factors. "Beer heart" and "alcohol heart" are common dilated cardiomyopathies resulting from the toxic effects of excessive drinking. "Beriberi heart" is a form of cardiomyopathy caused by a vitamin-B deficiency. A "tiger" or "tabby-cat" heart is one striped and crippled by fatty deposits, whereas "dynamite heart" occurs when blood vessels dilate from exposure to nitroglycerin and then contract when exposure is discontinued, reducing the heart's blood supply.

In almost all instances of heart failure the course of the disease is progressive and the prognosis poor. Often the effects are not even felt or diagnosed until the condition has reached an advanced stage, at which point medication only forestalls the heart's deterioration and helps to alleviate the symptoms. There are four classifications of heart failure. A person with Class 1 gets symptoms from vigorous exercise. Class 2 and 3 patients get them with moderate to very mild activity. People with Class 4 heart failure experience symptoms even when they're at rest. For such patients, a heart transplant eventually becomes the only option, and one that has become feasible only in the last 10 years or so.

As recently as the late 1970's, heart transplant surgery was generally considered to be a failed experiment. In 1968, the year after Dr. Christian Barnard performed the first heart transplant, the six-month survival rate was only 22 percent. Patients consistently succumbed to infection and their own immune systems' rejection of the transplanted heart. Life magazine's Sept. 17, 1971, issue featured a story entitled "The Tragic Record of Heart Transplant Patients." On the cover were photographs of six recent heart transplant recipients with a caption explaining that within six months of when those pictures were taken, all of those patients were dead. More than 100 centers around the world were performing heart transplants the year after Barnard pioneered the procedure. By the mid-1970's, there was only one, at Stanford University Medical Center.

It was the development in the early 1980's of the immunosuppressant drug cyclosporine that reinvigorated the entire field of organ transplantation. "It dramatically improved a patient's chances of survival," Dr. Robert Michler, Carol's surgeon at Columbia-Presbyterian and the surgical director of its heart transplant program, said in his office one day. "And then, as programs like Stanford's and ours continued to plow ahead with the transplant operation, we got more methodical and thoughtful about how to perform it, how to select patients and how to suppress the immune system and to diagnose and fight infection. Now rejection is no longer synonymous with death. It's part of the life of every transplanted organ, and in 90 percent of the cases it can be treated by adjusting the medications a patient takes at home."

Eight of 10 heart transplant recipients now survive at least one year. The 10-year survival rate is about 60 percent. In 1977, when the Columbia-Presbyterian program began, only three heart transplants were performed at the hospital. Now the number is about 85 a year. In all, more than 900 patients have received new hearts there, among them the first baby, back in 1984, and, last fall, just as the New York Yankees were closing in on their World Championship, Frank Torre, the older brother of Joe Torre, the Yankees' manager.

Today, some 2,200 heart transplants are done nationwide each year, but an estimated 45,000 Americans annually could benefit from the procedure. The lack of donors and the natural limits on the number of accidental deaths, the predominant source of donor hearts, keep the supply far short of the demand. The scarcity of donor organs compels programs like Columbia-Presbyterian's to implement a thorough evaluation process in order to select recipients who have the greatest chance of long-term survival. Every Friday morning various members of the Columbia-Presbyterian Heart Transplant Team, which includes surgeons, cardiologists, transplant coordinators, a number of medical consultants from psychiatrists to neurologists, as well as social workers and transplant nurses, gather to discuss prospective candidates. A number of so-called exclusion criteria have been established to narrow the field. Patients must be under 65 and free of other potentially compromising disorders, like diabetes and neurologic disease, and any dysfunction of vital organs, like the liver, kidneys and lungs. Excessive obesity and signs of "active mental illness or psychosocial instability" also exclude a candidate from consideration, as does any evidence of heavy smoking or recent drug or alcohol abuse.

In addition to the full physical examination that all potential candidates undergo, they are also screened by a psychiatrist and by a social worker, who helps assess, among other things, a patient's medical insurance and financial resources. The average cost of a heart transplant is $148,000, but with the added expense of an extended hospital stay like Carol's just to wait for a heart, and the $30,000-a-year cost of medications, the total package can easily come to a half-million dollars. Those who don't have the coverage don't make the cut.

Early last month there were 3,774 registrants for heart transplants on the United Network for Organ Sharing's national waiting list. Given the frailty of their health and the shortage of donor organs, approximately 30 percent of those listed won't make it to their next heart. In fact, patients are now more likely to die waiting for a heart than they are within the first two years after receiving one, a reality not lost on someone like Carol Palumbo.

On New Year's Eve, Carol came down with a bad case of flu and developed a fever of 104. With her weak heart, she had a difficult time fighting off the infection. The following week, another Status 1 patient wasn't as fortunate. "He got a fever like mine," Carol said. "It went to pneumonia, and he couldn't fight it off. I got very upset over that. You get to know these people."

The ordeal of waiting to receive a new heart before their old ones fail completely tends to bring Status 1 patients close together. They live suspended in a twilight world at once created and circumscribed by the advances of modern medicine. Refined...
drugs like dobutamine bolster the beating of hearts that would otherwise have given out long ago, while the vastly improved prognosis for heart transplant recipients buoy the hopes of those who might otherwise have given up long ago.

Confined to their hospital floor and never far from the attendants who sit at the central bank of nurse-station monitors that track heartbeats, the Status 1 patients do "laps" together in the hallway with their intravenous telemetry poles or wheel down to sit in the solarium. In their world, rainy nights in the solarium are the most alluring.

"A bunch of us pole pushers will gather there," Bill Wilson, a 33-year-old construction contractor waiting for a heart transplant, said one day. "We'll look out over the wet city streets and, you know" -- a mischievous smile crossed his face -- "wait for stuff to happen." This was Wilson's second wait for a transplant. The first heart he received was now succumbing to the coronary-artery disease that, for reasons still unclear to experts, eventually affects nearly all transplant recipients.

"I remember when I first got here," Carol said to me in her room that first day we spoke, "the others would say to me, 'Well maybe we'll get some bad weather tonight, make the roads slick.' I'd be appalled. Then after three or four weeks I found myself thinking the same way. Like tonight, Super Bowl Sunday. I'm not even gonna watch the game, but I'll be sitting here in bed thinking, 'Hey, Super Bowl, lots of people partying...'. It's awful."

Every Monday afternoon, Status 1 patients attend an education class and support-group meeting to learn about and discuss different aspects of their upcoming surgery. A larger version of this meeting is held each Thursday in the Clark Conference Center on the first floor of the Milstein Building for all the Status 2 transplant candidates and for any post-transplant recipients who wish to come and share their experiences and feelings about living with a new heart. In addition to these support groups, pre- and post-transplant patients have access to a special team of heart transplant psychiatrists, social workers and nurses, and they receive a weekly newsletter called Heart Talk.

The program's comprehensiveness at once underscores the physical complexities of heart transplant surgery and the abiding symbolic power of the heart. People receive transplanted livers, kidneys and pancreases, organs just as indispensable to life, and yet there are no pancreas newsletters.

"It's amazing, the emotional weight the heart carries for people," said Marla Knoll, one of the transplant program's social workers and the editor of Heart Talk. "When we get calls from relatives of a deceased individual whose organs were donated, they only ever ask after the heart. They say, 'Where did my baby's heart go?'"

It was just half a century ago that battlefield surgeons first ventured surgical procedures on the heart, an area of the body previously deemed both physically and spiritually inviolable. And while we've come a long way from thinking of the mango-shaped muscle beneath our breastbones as "the seat of the emotions," and while we've become accustomed by now to all manner of heart operations, somehow the human heart retains a certain aura -- still has a strong hold on our psyches.

More than just the accumulated lore and imagery (heart references fill nearly five index pages in Bartlett's Quotations), it is the heart's ongoing, which is to say, currently beating, centrality -- the simple fact that it alone among all our organs palpably moves -- that seems to so move us. Cardiologists spend the better part of their careers demonstrating and assuaging the legions who rush to their offices because of a few skipped beats, flip-flops or fast-paced flurries by reminding them that their heart is "just a pump."

Still, it is the virtuosity of that pump, the fact that it is wired to our nervous system and therefore moves in subtle concert with our moods, that it changes rate and output in accordance with our shifting physical and psychological states -- the very dynamic that inspired all the associations between the heart and the emotions in the first place -- that continues to beguile us now. Transplant candidates often ask how the operation will affect their emotions, if they'll feel things in the same way that they once did.

Such questions turn out to have some basis in science. A transplanted heart can be attached to all of a person's vital plumbing but not to the nerves. Thus, in the process of receiving a new pump, a heart transplantee is also effectively severed from that lifelong to-and-fro between the heart and the brain -- from all the physical correlatives that have long informed our most tired emotional cliches: "My heart leaps up when I..." "Be still my heart" and so on. A transplanted heart, severed as it is from the parasympathetic vagal nerve -- which, like an engine idle, keeps our hearts between 60 and 80 beats a minute when we're at rest -- constantly goes at about 100 beats a minute. Severed as well from the sympathetic nerves that speed our pulse during periods of exercise or moments of excitation, a transplanted heart remains unmoved until blood-borne chemical hormones like adrenaline can work their affect. A transplanted heart, in other words, is an unsubtle heart.

I talked with Bill Wilson about this at one of the Monday-afternoon Status 1 support-group meetings. When he was 23, Wilson's heart, like Carol Palumbo's, was attacked by a virus. A year later he received a new heart, which is now failing him. Of course, someone who gets nine more years of life from a new heart is not apt to sit around bemoaning that heart's insensitivities, particularly a young man like Wilson, who, as he recalls it, was not exactly a model post-transplant citizen.

"A few months after my surgery," he said, "I was racing through the woods on my motorbike and I went back to working construction. But it's not like I used drugs or alcohol or anything. I was just, you know, being a kid."

He paused a moment, searching for a way to describe how his transplanted heart felt when it was still healthy. "You do feel a difference," he said, referring to the loss of nerve connection. "When I exercised, I'd have to work up to it slowly because the heart takes a while to get going and then it takes a long time to settle down. But another thing I noticed is that it was a lot harder to scare me. Like if a friend snuck up from behind and said, 'Boo!' I'd just kind of quietly turn and say, 'What are you doing?'"

There were six Status 1 patients at that afternoon's support-group meeting, held in a conference room just opposite a nurse's station. They were seated around a long oval table, telemetry poles at their sides. Carol and Bill Wilson, her closest partner-in-waiting, sat together.
"Did you hear about Watson?" he asked her as he was settling into his seat. He was referring to Tom Watson, one of their fellow pole pushers. "He got his heart last night." "I know," Carol said. "Just after midnight. Hear he's doing great."

Ann Lawler, a social worker, opened the meeting by introducing Kim Hammond, a transplant coordinator. Hammond discussed the risk of postoperative infections that transplant recipients face because of the high doses of immunosuppressant drugs that they must take to ward off rejection of their hearts. She listed the things to be avoided when they leave the hospital: flowers, construction debris, humidifiers, potato skin spores, cat litter boxes. "Even a child's tears can be dangerous," Hammond said, "if that child has just had an immunization with a live virus."

Everyone was taking notes. It was as though they were preparing for a trip to a foreign country, trying to establish what if anything will be familiar to them when they get there. Carol asked about sushi and raw clams, her favorite foods. "Absolutely not!" Hammond answered. "No raw foods." Someone asked about sunny-side-up eggs. There was a long discussion about sunny-side-up eggs. "No," Hammond said. "Only fully cooked eggs."

At one point, a small, middle-aged woman with close-cropped black hair came into the room, sat down at the table and introduced herself as Tom Watson's wife. Everyone applauded. "His color is great," she said, talking very excitedly. "It's great all over. Ten weeks he waited in the hospital. He was very sick. Now he's sharp. He's been talking all day. He won't shut up. Never in your wildest dreams can you imagine." More applause. Then she held out a piece of paper. "Tom put this in my hand. He said this is the number to play in the lottery -- 9117. Nine months, 11 days, 7 hours. That's how long he waited to get his new heart."

When Lawler turned the meeting over to the patients and asked them to discuss their feelings, no one said anything. Carol, not known for her reticence, had already told me about how she used to come to meetings like this full of anger and 'curse out' the doctors who took so long to diagnose her illness. Now she says that she has become more resigned to her fate and just wants to get on with things. "I want everything yesterday," she suddenly announced to the group in her typically gruff manner. 'I fight with the nurses. I'm a real pain.' Everyone laughed.

"I think it's this waiting," she continued. "And the fear of the surgery. You can't keep your focus. You try to watch a movie, and then your mind starts to wander: Why did this happen to me, what's it going to be like afterward?"

There were solemn nods around the table. For a moment, with everyone sitting beneath IV poles, the clear lines dangling down, they looked like a group of sickly paratroopers readying themselves for a jump into the unknown, into someplace on the far side of their native hearts. Some of the poles had little mementos attached to their tops. It was the first time I had noticed them: Bill Wilson's gray metal hand with a bright-red heart mobile slowly turning through the hollowed-out palm; Carol Palumbo's wooden heart trimmed with painted flowers and a pink ribbon around the words 'Friends are angels in disguise.'

As Carol spoke, Mark Peterson, the photographer for this story, climbed up on a chair and, teetering on his tiptoes, strained to get an overview shot of the room. Later, when the meeting ended, I glimpsed Carol, Bill Wilson and a few of the other patients together by the door, laughing. After the room cleared, I asked Ann Lawler what the joke was.

"When the photographer was up on the chair," she said, "they were all thinking the same thing: If that guy falls and dies, who gets his heart?"

It was nearly 9 on that night in late January when the telephone finally rang again in Carol's room. It was Dr. Michler. Carol held the receiver, listening for a moment, her expression blank, her mouth slightly agape. Then she said, "Yes, I'd love to," hung up and turned to her fiance, Jimmy. "He asked me if I'd like to see him tonight," Carol said. "I guess this is it."

By 11, with the snow still falling, the sixth-floor solarium was full. Carol's three sisters -- Susan, Marie and Bonnie -- were there; her younger brother Joseph; her daughter, April, and James Kenny, an old friend. Her fiance had just returned with a pizza and calzones. Bill Wilson had wheeled down from his room. Carol sat in her hospital gown, chewing gum, her hands clasped in her lap as she waited for the gurney that would take her down to the fourth-floor operating room. "I'm really buzzing," she said, a dazed, faraway look in her eyes. "What time is it?" "Two minutes later than the last time you asked," her brother Joseph told her.

Six floors down, through the glare-smeared grid of wet city streets, an ambulance siren grew louder. "Shh," Jimmy said. "You think that's the one with Carol's heart?" "No," Carol said. "Shouldn't it be here already?"

Carol's prospective heart belonged to an upstate New York woman in her mid-30's who had suffered a brain aneurysm earlier that day and been declared officially brain dead. (A recently passed Federal law designed to facilitate the process of organ donation obligates a hospital to notify its local organ procurement organization when a patient under 75 has been declared brain dead. A respirator keeps the person's heart, lungs and other organs functioning.) When New York Regional Transplant (N.Y.R.T.), the organ procurement organization that covers the New York City area, received the call that day from the hospital in which Carol's donor lay, it dispatched a representative to talk with the deceased's family about donating her organs. Once N.Y.R.T. received the family's consent, the organization consulted the United Network for Organ Sharing's computerized list to see who best matched up with the blood type and size of the donor's heart.

The network uses four criteria in determining who gets the next available organ. The first two determinants are blood type and heart size. A man can get a woman's heart and vice versa, but a 6-foot-4, 300-pound man, for example, could not survive with the heart of a Calvin Klein model. The third is the severity of illness. The fourth is order of listing. If two Status 1 patients are eligible for the same heart, the one who has been on the list longest gets it. The N.Y.R.T. coordinator reviewed the list and the call went out to the transplant coordinator at Columbia-Presbyterian to say that there was a match for Carol, even though, by all the above mentioned criteria, Bill Wilson, the same blood type and essentially the same size as Carol, was first in line for her heart. Carol was, in fact, listed as Bill's backup. Bill, however, being a retransplant patient, requires what is known as a special 'cross-match' -- a heart that won't be rejected by the increased number of antibodies that have built up in response to his first transplant.
Cross-matches typically have to involve nearby donors because of the time-consuming preoperative tests that have to be done on the new heart.

"She didn't want me to know about her getting the heart tonight," Bill whispered as Carol was taking one last phone call in her room and her friend James was madly rubbing off the red toenail polish that the operating room nurse declared must go before Carol could be wheeled down to surgery. "She thought I'd be mad at her or something," Bill explained. "I told her it's not her fault. I just need a heart from 'the hood' I guess. Some young triathlete, I hope. This next one's gotta go the distance. I don't want to do this again."

Near midnight, a nurse signaled that it was time to go. "Michael!" Carol shouted into the receiver at her sister Bonnie's husband, who had phoned to wish her luck. "Gotta run. Got a pressing engagement with a new life."

Everyone followed alongside Carol's gurney, down the hallway, past the other Status 1 patients' rooms, dark but for the pinched, fluttering light of bedside TV's. Out by the nurses station, we turned in the direction of the main bank of elevators. Bill Wilson left off there and turned to start back to his room. "She'll be mint by morning," he said. "Guess I'll have to find some new pole pushers." Heart transplant surgery is, by definition the sum of two surgeries, exquisitely timed. Even as Carol Palumbo waved goodbye to her fiancé and the rest of her family before being wheeled through a set of swinging doors marked "Open Heart Sterile Core," there was a brain-dead woman on a table in an upstate New York hospital room, breathing on a respirator, teams of surgeons crowded around her body, preparing her different organs for extraction. They are known as harvest teams.

Shortly after Dr. Michler's phone call that night, a team of Columbia-Presbyterian heart-harvest surgeons was dispatched to Albany by Learjet. For the next three hours the surgeons had numerous phone conversations with Mich-ler, allowing him to coordinate the progress of his operation with theirs. The primary goal in heart transplant surgery is to limit as much as possible the "ischemic time" -- essentially the amount of time that the donor heart is out of a body, without blood. After about four hours, tissue begins to suffer damage.

At 12:20 A.M., word came from the harvesters that they had just seen the heart, and that it appeared to be healthy. Michler then gave the go-ahead to the anesthesiologist to start putting Carol to sleep. People with sick hearts do not recover easily from anesthesia, so transplant surgeons like to be fairly certain that an operation is going to proceed before putting a patient under. "There's often incredible drama in this," Michler said as he scrubbed at a sink just outside operating room No. 22. A tall, boyishly handsome man of 42, he has a soft, very deliberate way of speaking. "What happens," he continued, striding into the O.R. in his bright green clogs -- preferred because they help relieve back strain -- "is that I'll wait for the harvest team to call back and tell me when they're about to extract the heart. That's when I'll make my incision."

Carol was now asleep on the operating table, an iodine-stained square of her exposed chest framed by deep blue surgical blankets. Alongside the table, a perfusionist monitored the heart-lung bypass machine, a six-foot-long metal cart with a crowded console of dials and circular windows and tubes running to the operating table. For much of the surgery, the machine will circulate and oxygenate Carol's blood -- will essentially live for her.

Standing at the operating table, Michler prepared to make his first incision. He turned to look at the clock. It was 12:30 A.M. "They should be back with the heart shortly after 1," he said. "By then, I'll have her hooked up to the heart-lung bypass machine and be ready to cut her heart out."

One night late last year I had the opportunity to accompany one of Columbia-Presbyterian's organ-donor teams on a heart harvest. The head of the team that night was Dr. Jim Slater, a 34-year-old cardiac surgeon in the last year of his residency. We met at 2 A.M. in front of the Milstein Hospital Building. A white sedan with the words "Organ Transplant Unit" written on the side was parked directly in front. The driver, a Long Island fireman named John Bezares, was waiting behind the wheel to take us to our destination, a hospital in northern New Jersey.

Slater and I went up to the O.R. locker room to change into surgical scrubs and were joined there by a second-year intern named Joe De Rose. Once we were all scrub-clad and ready, De Rose placed a blue Gott picnic cooler on a wheeled cart and held open the lid as Slater tossed in large, clear bags of saline solution and something called cardioplegia fluid, a chemical compound with high concentrations of potassium used to stop the donor's heart before it's cut out. At an automatic ice machine opposite one of the fourth-floor nurses stations, we filled the cooler to the brim and were on our way by about 2:30.

The designated recipient of the heart we were on our way to retrieve was a Status 2 patient who still hadn't arrived at Columbia-Presbyterian by the time we had departed. Slater was in no particular hurry. As we made our way over the George Washington Bridge, he said, "We may have to stall a bit on our end before we take the heart out so the surgeons at this end can get the patient ready."

Because of the impromptu nature of a heart harvest, there was no time that night for me to get the necessary press clearance at the hospital where the donor's body lay, so I was asked not to identify either the institution or any of the personnel I encountered there. "If anyone asks," Slater said, "just say you're an observer." "And if I'm asked to hold something?" I asked. "Hold it." De Rose wheeled the blue Gott cooler into the operating room. I followed behind him and Slater. All around the operating table, harvest teams -- liver, kidney and pancreas -- were pressed, elbow to elbow, working. I seemed to have just stopped in my tracks because Slater took my arm and led me around to the end of the table, to the covered head of a young woman, dead of a brain aneurysm, her body split open, the lungs rising and falling, the heart beating. The surgeons were speaking in a clipped, purposeful monotone. One harvester, reaching deep inside to get at the pancreas, sent a tide of light blue intestine riding up toward the heart where Slater had already set to work, he and the liver harvester opposite him, cutting away at the connective tissue around the organs, readying them for extraction. A tiny corner of liver was snipped off and sent out for biopsy. "I can't use this,"

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the pancreas harvester suddenly announced. "It's too fatty." Slater stepped away from the table to use the telephone on the wall by the door. He called the operating room at Columbia-Presbyterian. They weren't nearly ready for him.

Just then the liver surgeon looked up and asked Slater if he could give a good estimate of when he would be "cross-clamping." Cross-clamping refers to the moment just before the heart is extracted when the donor's aorta is closed off so that no more blood flows into the heart. Then, through a pen-size needle stuck into the aorta just below the clamp, the heart is infused with the ice-cold cardioplegia fluid, which arrests the organ.

Slater, a slight man with a placid demeanor, told the liver harvester that he could not give him a time. 'I'm so tired of this game,' the liver surgeon said, throwing up his hands. 'It's always the same with you heart guys.' "This," Slater suddenly boomed, "is no game, doctor," and now the two harvesters were arguing. They took it out into the hallway for a few moments. I could hear Slater explaining about Columbia-Presbyterian's in-sistence on minimizing ischemic time, and about the recipient in this case having been out of the hospital and also being a "re-op"-- meaning he had previously had surgery, a heart bypass, and would therefore take longer to prepare on the operating table because of the built-up scar tissue. The liver harvester seemed unimpressed. Slater said he thought it might be a discussion for another time, and then walked back into the O.R.

It was nearly an hour before we got the go-ahead to harvest, time that drew on interminably, the woman lying opened there before us. It felt as if we were in a room far beneath the earth, far beneath daylight and thought and beliefs, beneath the workings of the brain that complicate us. That was all dead now. This was the elemental limbo of organs and of organ letting, an ultimately brief abeyance in whatever ritual of death and mourning this woman's family wanted for her, in order that someone else in the waking world, if we could ever get back to it, might continue living there.

Slater timed the injection of the cardioplegia fluid just so, wanting, he later explained, to infuse the heart at a point of positive energy: the blood having just been pumped out so that the heart would take in fully the very liquid that would arrest it. As Slater worked to cut the aorta and the coronary artery, De Rose poured bags of cold saline all over the outside of the heart to preserve the outer tissue, bloodied saline solution cascading off the table, running under our shoes.

In a moment, Slater had the heart cupped in his hands. He walked it to the end of the table and placed it in a metal bowl where he and De Rose did a quick examination -- "Just to make sure that we have everything," he said. The heart was then placed in a clear plastic bag filled with more ice-cold saline solution. It was tied off and then double-bagged. De Rose put the heart into the cooler. Slater thanked the O.R. attendants and other doctors. The liver surgeon looked up from his work a moment and said, very civilly, "Yeah, thank you, guys."

Back out on the highway, we were doing 90 miles per hour, our sirens blaring, the heart in the trunk, the morning sun climbing up behind New Jersey's smokestacks. I asked Slater about the tussle back in the operating room, if there was any medical reason for the liver surgeon's anger over the delay. "Not really," he said. "When someone's brain dead, certain changes do happen in the body, which require changes in the medications we're giving to the donor. After a time those medications might do damage to a liver, but that really didn't come into play there. That was just your typical surgeon's type-A personality on display."

We slowed down at a tollbooth. It seemed odd to me, given our cargo, that we were stopping to pay tolls. "Are you kiddin'?" John Bezares shouted. "Five-hundred-dollar fine."

At 12:49 a.m., Jennifer Cortazzo, a cardiac transplant coordinator, walked into O.R. No. 22 and announced to Michler that the plane bearing Carol Palumbo's new heart had just landed at Teterboro Airport in New Jersey. "It will be here in 15 or 20 minutes," she said. Michler nodded. He had just sawed through Carol's breastbone, pried and clamped apart the opposing sides of her rib cage. Then he cut through a layer of fat and protective tissue, exposing her diseased heart.

It occupied nearly the whole of her chest, seemed to balloon more than beat. I have held a healthy, working heart in my hand. During the first heart transplant I ever observed, the surgeon, upon completing the operation, suddenly took my hand and placed it inside the patient's open chest. I was expecting to feel a kind of gelatinous warble, but got instead these hot, firm, repeated blows against my palm, the force resonating up my arm. I can feel them still.

Shortly after 1 A.M., the doors to O.R. No. 22 swung open. The blue Gott cooler was brought in. "It was a beautiful arrest," announced Dr. Octavian Min-avor, the head of the harvest team. "Terrific," Michler said. He inserted a cannula near the base of Carol's vena cava, the main vein bringing blood into her heart, then attached to the top of the cannula the lines from the heart-lung bypass machine. We watched Carol's blood drain down, the machine's circular console window a bright, multicolored reticulum of veins and arteries clasping a deep magenta viscous fluid. We watched Michler's heart cupped in his hands. I opened the heart-lung bypass machine. We watched Carol's blood drain down, the machine's circular console window a bright, multicolored reticulum of veins and arteries clasping a deep magenta viscous fluid. We watched Michler's heart cupped in his hands. I opened the heart-lung bypass machine. We watched Carol's blood drain down, the machine's circular console window a bright, multicolored reticulum of veins and arteries clasping a deep magenta viscous fluid.

Michler put a clamp on her aorta and cut it. He cut the remaining vessels, and then with both hands took hold of Carol's heart. Through a layer of fat and protective tissue, exposing her diseased heart.

Just as he was about to set the heart into her when he paused, turned and walked back to the side table. He placed the donor heart in the silver bowl and positioned it beside Carol's. "This will make a great picture," he said. "I'll use it for my lectures."

He brought it to a side table and placed it in a metal bowl. An attendant unwrapped the donor heart. Michler reached in and took it from the bag. He washed the heart in a bowl of cold saline, then walked with it over to Carol, lying there, her chest empty. He was about to set the heart into her when he paused, turned and walked back to the side table. He placed the donor heart in the silver bowl and positioned it beside Carol's. "This will make a great picture," he said. "I'll use it for my lectures."

I stared down, first at the healthy heart -- a bright, multicolored reticulum of veins and arteries clasping a deep magenta core -- and then at Carol's, which, I had to look again to be sure, was still moving in a shallow pool of blood, heaving slowly, like a beached fish. 'You see that?'" Michler said excitedly. "It's still struggling for life."

Before implanting the new heart, Michler trimmed it at the top so that its parts would meld better with their corresponding connecting points in Carol's body: the cuffs of her old heart's upper chambers, the aorta and the pulmonary artery. Then he started sewing. In the past, all four of the connections would be made before blood was allowed to flow into heart. But Michler recently modified the surgery so that this now happens after only two connections. "It dramatically reduces the ischemic time," Michler
explained. "We connect the aorta and right atrium, then release the clamp on the aorta and let blood flow down into the coronary arteries and start to reanimate the heart."

At 2:05 a.m., there was a marked hush in O.R. No. 22. "This," Michler said, "is the moment of truth." He reached down and removed the aortal clamp, and as he did, I found myself recalling something Dr. Slater had told me during the drive back from my heart-harvesting excursion to New Jersey. "It's no small thing we do to these hearts," he had said. "We stop them, hold them like a baseball, freeze and pack them and sometimes they don't start up again."

We all stood in silence above Carol. Nothing was happening. I imagined the warm blood rushing against her heart's iced walls. Michler reached in and gave some gentle, coaxing squeezes. He let go. We watched, waiting to see if this muscle would, in a sense, remember. And then, with the same slow primordial lurching of the excised heart -- only now in the direction of life -- it did. Without the nerves or any of the illusory emotional connections that attend them, with nothing but a cellular disposition to beat, the foreign heart filled with foreign blood, and all the parts responded familiarly.

"There it goes," Michler said, his voice nearly a whisper now. He had told me in his office weeks before that even with all the transplants he has done -- Carol's was, in fact, his 251st -- this was the moment he could never quite get over. "The anticipation is there every time," he had said. "And then the heart starts beating, and all the anxiety dissolves into this incredible sense of satisfaction. The sight of that heart assuming the functions of another person's body. It's the accumulation of so much knowledge, so much science and hard work, and each time I witness it, it just boils down purely and simply to a miracle."

Michler sewed in the right atrium and pulmonary artery. The heart beat irregularly for a time, and then it took off, pumping fiercely, 90, 100, as high as 145 beats a minute before slowing down back down again to 99. All the while Carol's blood pressure remained disconcertingly low. "She's so dilated," Michler kept saying, her veins having waited open so long for blood that now they were not giving it back readily enough. He tried to remedy the problem with medications. He then instructed his assistants to set Carol's heart rate at 99 with a tiny wire electrode attached to the muscle. It would be kept there for the coming days to help train the heart, suggest to it the rhythm it would soon be assuming on its own. It was now nearly 2:30. A backup surgeon came in to close Carol's chest and finish up with the surgery. Michler removed his surgical headlamp. "Ischemic time?" he asked. "Two hours, 41 minutes," an attendant told him. "Good," he said. "I'm going to see to the family."

HOWEVER REFINED and relatively routine transplant surgery has become, it is hardly an ideal solution. People do not just change hearts as they might a car engine and then take off with the mileage figures set back on their odometers. The reality is that while a successful heart transplant immediately rescues recipients from the awful, netherward slide fo heart failure, it also delivers them into a whole new struggle, a life compromised by the constant threat of infection and rejection, and all the subtler physical and psychological effects - still little understood by doctors - of living with a heart that has been severed from its natural conversation with the brain.

For the first month after surgery transplant recipients undergo a weekly heart biopsy, in which a small bit of tissue is taken from the heart and examined for signs of rejection. Rejection episodes usually have no symptoms, so biopsies have to be performed throughout a transplantee's life, every two weeks in the second month after surgery, monthly for the next half-year and eventually once a year.

Among the medications Carol has to take five different immunosuppressants, all of which have prodigious side effects. A long list of these in the 51-page Patient's Guide to Heart Transplants, which Carol took home with her, includes liver and kidney dysfunction, tremors, nausea, bone loss, fluid retention, stomach ulcers and mood swings. Five different antibiotics have to be taken to guard against the increased risk of infection created by all the immunosuppressants; five drigs to fight high blood pressure, and a number of vitamin supplements and blood thinners and antacids to counteract all the other side effects.

"My great hope for the future is that we'll one day be able to unlock they key to immunospression so that our patients won't require all the drugs," Michler told me. It was past 4 in the morning. He was sitting up in his office after Carol's surgery, sipping ginger ale and listening to Mozart - his standard post-op coolout before going back down to the O.R. to check on his patient and make sure all is well. "The immune system is a marvelously complex thing that responds to a whole array of threats. And yet the mechanisms of each response, although they do overlap, have slight variations. The ability to unlock the specific workings behind the rejection of organs will allow us to prevent that rejection and still retain a person's ability to fight off other threats."

Michler is currently involved in extensive laboratory studies using tissue samples from both a patient's old heart and the donor's heart to try to comprehend, on the biomolecular level, the immunologic response that causes the coronary arteries of transplanted hearts to constrict and eventually fail. This is the No. 1 cause of death following transplantation. As a short-term remedy to this problem, Michler has performed coronary-bypass surgeries on transplanted hearts - a first - and has also used something called transmyocardial laser to make tiny holes in the heart muscle in order to increase the flow of oxygen. "These are the kinds of studies and procedures we must try, because we just don't have enough hearts around to keep retransplanting people," he said.

Among the other options being pursued is a potentially breakthrough procedure developed by Dr. Randas J.V. Batista, a surgeon who works in a small rural hospital in southern Brazil. The procedure, stunning in its simplicity, involved cutting out a triangular-shaped section of a dilated ventricle, thus reducing its size and restoring its contractility. The operation is being done on a trial basis at the Cleveland Clinic and elsewhere, and Michler feels it can eventually become part of a new, multifaceted approach to heart disease, an approach that advancements in medicine now allow and which the dearth of donor hearts necessitates. Other options are likely to be: the permanent use of mechanical heart devices; the use of baboon hearts in children as bridges to their donor hearts, and the use of hearts from "transgenic" pigs - pigs that have been genetically altered to grow hearts
more human than porcine. (The first implant of a transgenic pig heart is expected to take place in England sometime next year.)

"There may come a time," Michler said, "when we are changing pig hearts in people like we would a mechanical part."

Before going back down to the O.R. to check on Carol that morning, Michler showed me a drawing sent to him by one of his transplant patients, a 6-year-old. It was a simple figure of a boy, his body split down the middle by a dark line. The left side depicted him with his old heart still in his chest, his arm and leg withered, his face said. The right side portrayed him after surgery, filled out, smiling, bolts of energy radiating outward from his body. "I love that picture," Michler said.

SITTING UP IN HER room in the hours before her surgery, Carol had looked over at her finance at one point, crossed her old heart and swore to him that she would be his date at the heart transplant program's fifth annual Valentine's Day party - traditionally celebrated two weeks after the actual holiday and attended exclusively by transplant recipients and their families. Carol made good on the promise. Just 25 days after receiving her new heart she was dancing with Jimmy in a makeshift ballroom in the Milstein Building's Clark Conference Center. "I can really feel it pounding away in here," she said, sitting back at her table, her hand fluttering above her chest.

Carol had been out of the hospital only a week, her departure delayed by a worrisome biopsy result and a frightening fainting episode three days after her operation. She had got out of her bed and was on her way to the bathroom, when, as Michler later surmised, the combination of her low blood pressure and her new heart's inability to modulate its pace brought on a severe dizzy spell. "I was terrified," Carol said. "That was the worst thing I've been through. I was sure I was going to die, but Mr. Michler kept holding my hand, saying: 'I've got you. I've got you.'"

The day she finally went home, Jimmy carried a bag with her clothes and medication and the teddy bear the hospital gives heart transplant patients to hold to their sore chests and help absorb the pain. Carol held a fistful of heart balloons. When she passed through the front door of the Milstein Building, she paused and took a deep breath of the outside air, her first two months. She took another. Then she walked out past the building's overhang and let fly all of her balloons, little sun-glinting hearts disappearing into the skies above Manhattan.

Hearts were everywhere at the Valentine's Day party - heart tablecloths and streamers and centerpieces that looked like miniature hot-air balloons, the bright-red foil-wrapped gondoliers sprouting tiny heart balloons beneath the great big one that loomed above each table. Most guests had honored the party tradition of wearing red and white. The band played mostly heart numbers: 'I Left My Heart in San Francisco,' "Heart and Soul" ...

More than 100 transplant recipients had shown up. They were easily identified by the spangled red hearts pinned to their dress straps and suit lapels. Columbia-Presbyterian has done so many transplants by now that the party organizers who were handing out the spangled hearts at the door actually had to ask people as they came in whether they had hand a transplant or not. Upon hearing the question, each "have not," almost to a person, clutched a hand over his or her natural heart as though to make absolutely sure that no one had taken it.

Seated at Carol's table with her and Jimmy were Tom Watson and his wife. One table over was Seamus Healy. A runner-up for the Irish Olympic Bicycling Team back in 1955, Healy, 65, got his new heart on Oct. 25, 1994. "My old heart was mush," he shouted over the band. "I got a young teen-age girl's heart now. I pray for her every morning. She's my angel. How can I forget her?"

All the people I met at the party spoke in the same reverent tones about the angel in their chests, about this gifts, this responsibility they now bear, and the little prayer they say to this other person inside them. It was as though they were part of some strange new cult, the tribe of the transplanted. Somehow the very presence of all those people living new lives with other people's hearts seemed only to underscore our biological commonality and interchangeability; seemed to offer the starkest proof possible that the heart, after all, is just a pump. And yet what was most evident as the party unfolded is our abiding impulse to mythologize the heart, to reinforce our physical selves with a larger spiritual significance. "I had a talk with her the night after my surgery," Betty Diotauiuti, 53 and a year into her new life, said about her new heart and its donor. "I said, 'I hope you're not a sleepwalker.'"

Near the end of the evening, Carol and her fellow spangled-heart wearers were brought together at the front of the room for a group photo. All eyes turned their way. I could see here and there above the tables the telemetry poles of the Status 1 patients who had been allowed off their floor for the occasion, all of them staring up front at the gathered members of this tribe they hoped to be joining soon. As the cameras flashed, the wife of the Status 1 patients seated closest to me began to cry. She rubbed her husband's arm and kept telling him not to worry, that he would be getting his new heart real soon.