

WHO GETS THE ORGANS?

by Jane Warmbrodt

How donor organs are distributed for transplantation across the country is of great concern to the medical community, the media, the public, and even the federal government. Rarely a week goes by that a fervent plea to "find my child" a heart, liver, or a kidney does not appear in the electronic or print media. We receive posters, letters and phone calls from desperate family members all pleading for a transplant for their loved one. In the minds of many, a well-run public relations campaign can make the difference between getting a transplant or not . . . between living and dying.

The criteria for organ distribution and recipient selection are based on clinical and medical decisions and not on whose story was on the six o'clock news. While it is true that the organ distribution system is imperfect and occasionally one individual receives special attention, it is the exception, not the rule. Often when the system is overridden it is because of extraordinary pressure brought to bear on transplant programs by politicians in an effort to appease their constituents, or because of well-intentioned but questionable prioritizing of patients by transplant programs.

There are two organ sharing systems in the United States, one for kidneys and one for extra-renal organs such as the liver and heart. The two systems differ in many ways. The kidney distribution system uses more complex criteria than the liver and heart distribution system, and is more difficult to manipulate or abuse.

KIDNEYS

Our center, the Midwest Organ Bank, which services the western half of Missouri and the entire state of Kansas, uses a complex and equitable organ distribution system. The following guidelines are used for prioritizing potential kidney recipients:



First Priority:

A patient in urgent need of a kidney transplant. The patient is medically unstable on dialysis, or can no longer tolerate dialysis.

Second Priority:

A patient who has a high level of antibodies with a negative screening crossmatch. It is more difficult to find compatible kidneys for patients with high antibody levels.

Third Priority:

A patient who has a 4-antigen HLA (human leukocyte antigen) perfect match with the donor. HLA or histocompatibility matching is done to identify genetic markers. Many transplant centers feel that the more closely these markers (or antigens) are matched, the chances of organ rejection are reduced.

Fourth Priority:

A patient who has a 2 DR-antigen match with the donor. Centers who are doing DR typing have experienced increased transplant success rates.

Fifth Priority:

A patient who received donor-specific blood transfusions in

preparation for a cadaveric transplant. Donor-specific blood transfusions have also proven to reduce the incidence of rejection.

If the kidneys cannot be placed according to the above priority system, they will be offered to the Midwest Organ Bank kidney transplant hospitals through a rotation system based on the last hospital to be offered a kidney.

The Midwest Organ Bank kidney transplant hospitals (St. Luke's/Kansas City, University of Kansas Medical Center, Veterans Administration Hospital/Kansas City, Research Medical Center/Kansas City, University of Missouri Medical Center/Columbia, and St. Francis Medical Center/Wichita) cooperate with each other providing back-up recipients in case of incompatible crossmatches with the primary recipients. A time limit of 90 minutes is used for their acceptance of the kidney before the Midwest Organ Bank moves on to the next hospital in the priority or rotation system.

Because of the ability to preserve kidneys for up to 72 hours before

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transplant, it is possible to share them with other transplant centers nationwide. If no one in the local system has a suitable recipient, then the Midwest Organ Bank contacts the computerized kidney sharing system, the United Network of Organ Sharing (UNOS), which is headquartered in Richmond, Virginia. The UNOS network has the name, blood and tissue type of virtually every potential kidney recipient in the United States. The UNOS computer will search the list and identify well-matched recipients for the kidneys—wherever that might be in the United States. The Midwest Organ Bank then sends the kidneys via plane to the center where those recipients are located. UNOS is truly a sharing system, and frequently a kidney is offered to the Midwest Organ Bank that was retrieved outside the procurement area. This kidney distribution system, over a decade old, is enforced, and has few imperfections. The Midwest Organ Bank transplant community has always been concerned with equitable distribution and periodically reviews and revises the system to ensure its efficacy.

LIVERS/HEARTS

The liver/heart distribution system is another matter. Currently it is possible to preserve a heart for only four hours, and a liver six to twelve hours. Because of inadequate preservation methods, there is not time to perform histocompatibility testing before a liver or heart transplant so we cannot use HLA or DR typing as selection criteria. In addition, liver and heart patients are typically "sicker" than kidney patients, and there is no back-up treatment such as dialysis for them. Patients who are waiting for a liver or heart will certainly die without a transplant.

There are only four strata to the priority system for liver and heart recipients, and the distribution system for these organs varies little nationally. The priorities the Midwest Organ Bank

uses are the same as those used in California or Pennsylvania, for instance. There are currently one liver and four heart transplant programs in the Midwest Organ Bank operating area. St. Luke's Hospital/Kansas City has performed liver transplants, and the four heart transplant programs are at the University of Kansas Medical Center/Kansas City, Menorah Medical Center/Kansas City, St. Luke's Hospital/Kansas City, and St. Francis Medical Center/Topeka.

A heart is offered first to the hospital that procures it, providing it is a heart transplant center with a recipient on the waiting list. That hospital will also be advised of other patients in the region who are in more urgent need of a transplant, and the hospital is encouraged to make the organ available to such a patient. If the donor hospital does not accept the heart for its patient, or has no patient ready to be transplanted, the Midwest Organ Bank uses a priority system for distribution:

First Priority:

Status 9 - This is the most urgent status. This status applies where a transplant recipient is rejecting the transplant, or a patient is on cardiovascular support in an ICU, with survival limited to hours or days.

Second Priority:

Status 1 - This patient is medically unstable, in the ICU. Survival is limited to days or weeks.

Third Priority:

Status 2 - This patient is stable, most likely not in an ICU, but is hospitalized. Survival could range from weeks to months.

Fourth Priority:

Status 3 - This patient is stable and is not hospitalized. Survival could range from months to a year.

If a donor heart is available that

matches 2 or more patients of the same status, priority is given to the patient who has been waiting on the list longer. If there are no local patients waiting, then another computerized sharing system (24-ALERT) based in Pittsburgh, Pennsylvania, is accessed. The heart is then offered to the patient in most urgent need at the center closest to the Midwest Organ Bank.

Liver and heart transplant survival rates are often 80% at the end of the first year post-transplant. That success rate is attributed primarily to the powerful immunosuppressant Cyclosporine. Cyclosporine seems to have reduced the need for histocompatibility, which results in a risk that heart transplant centers across the country may transplant a patient within their own program who is in less urgent need. There is potential for abuse of the 24-ALERT system.

There is currently no nationally accepted or regulated criteria used for the determination of patient status in the 24-ALERT system beyond the rather vague criteria discussed previously. The government is not involved in liver and heart transplants to the extent that it is in kidney transplants and has no authority to establish or regulate sharing criteria. There is no regulation authority other than the transplant programs themselves. While for the most part self-regulation works, when life and death decisions are involved, there is potential for subjective and sometimes unethical decision making.

The Midwest Organ Bank is fortunate because we have not had problems with abuses of the distribution systems. While the current national system of distribution bears scrutiny and improvement, it is the lifeline for thousands of patients. As transplantation develops and changes the system for distribution will change too, making uniform criteria and regulations essential.

Jane Warmbrodt is Director of Professional Education, Midwest Organ Bank.