

Forensic Aspects of Organ Transplantation

By FRANK J. KELLEY
Attorney General of the State of Michigan

In the fall of 1967 a man suffering from progressive heart failure entered a hospital in Cape Town, South Africa. Shortly thereafter, a young unmarried woman, about to die from causes other than heart defects, was admitted to the same hospital. Also present at the hospital was Dr. Christian Barnard, a surgeon with a deep interest in human heart transplantation.

The basic components for a landmark in medical history were present; a donor with a healthy heart, a potential recipient suffering heart disease, and a talented heart surgeon. Following the woman's death and consent to the operation by both the woman's father and the recipient, the first human heart transplant was undertaken.

The existence of this dramatic development in medical science was relayed rapidly around the globe. Television, radio and the press covered the daily events following the first human heart transplant. The news captured the imagination and attention of the general public. Overnight Dr. Barnard became a celebrity. He appeared on national television in this country and had visits with a number of world leaders.

As all of you know, the work of Dr. Barnard did not represent merely the creative genius of one individual. Rather, it was in large part the result of prior research and experimentation by many other members of the medical profession.

A Step Forward

The advent of heart transplantation, the most dramatic type of transplantation to date, is but one more step forward in the whole area of human homographs. Earlier pioneers transplanted corneas and kidneys. More recently, transplanting of livers and lungs has been attempted. But, it was the first series of heart transplants, with all attendant publicity, that made the public aware of some of the legal

and moral problems involved in the area of human transplants. News commentators, doctors, theologians and public officials began to speak of these problems.

It had long been recognized that a supply of cadavers and anatomical parts was necessary for medical research and education. Now, organs were also needed to supply the demands created by the development of transplanting techniques.

A Gallop Poll conducted shortly after the first human heart transplants revealed that most people were willing to donate parts of their body for these purposes. When asked whether they would be willing to donate their hearts or other vital organs to medical science, seventy percent of the civilian adult population said "yes." We now have a demonstrated need for organs, and a general willingness to donate them, and so the question arises:

What is the role of law in this process?

I submit that the *major* task of the law is to facilitate the supply of anatomical parts needed for medical education, research and transplant purposes. I will refer primarily to statutory law enacted by state legislators in our representative democracy. Moreover, I am referring to legislation enacted after doctors, lawyers and other concerned and informed citizens have played a major role in shaping its contents.

Supply of Organs

In dealing with the supply of necessary anatomical parts, there are at least three major areas of legal concern. First, the law should provide a legally authorized and regulated method by which living donors may donate all or a portion of their body for medical purposes. Second, the law should provide a recognized method by which *survivors* of a deceased person may donate all or a portion of the de-

ceased's body for the same purposes. And, third, the law should protect doctors and others involved in *removing* anatomical parts from legal liability. In accomplishing these aims, the law should strive to provide the maximum amount of certainty regarding the legal rights of all concerned.

As stated above, the major role of the law in this area is to provide a legal environment which facilitates the supply of anatomical parts needed for medical education, research and transplants. An examination of legal developments over the last fifteen years reveals that the law has made substantial progress in performing this function. As medical science has developed and refined transplant techniques, so the law has developed and refined legal mechanisms by which anatomical parts may be donated and doctors may perform removal operations without fear of legal liability. This corresponding development of the law may be illustrated by our experience in Michigan. Although there are obviously variations in the laws of the fifty states on this subject, the pattern of development in Michigan is representative, in a general way, of legal advances across the country.

Present Legislation

In Michigan we have had criminal legislation for many years making it a felony to mutilate any portion of a dead body without lawful authorization. Accessories to the crime are also included within the sweep of the law. Violations of this statute are punishable by a maximum of ten years imprisonment or a five thousand dollar fine. This criminal statute poses significant hazards for physicians performing removal operations without lawful authorization. It also represents potential problems for a surviving relative who purports to authorize the removal of anatomical parts without having lawful authority to do so. He be-

comes an accessory to the crime.

Apart from the criminal law, there is also civil liability. It was defined by the case of *Deeg v. City of Detroit*, decided by a unanimous Michigan Supreme Court in 1956. In the *Deeg* case, the original plaintiff was a wife suing for money damages based on the mutilation of her deceased husband's body. The husband had been the victim of a traffic accident. Following the accident, an unauthorized autopsy was performed on him to determine the presence of alcohol. During the course of the postmortem examination, certain organs of the deceased were destroyed.

The wife alleged that the mutilation of the body was done without her consent and violated her legal rights to possession and burial of the body. On appeal to the Michigan Supreme Court, the Court held: "* * * the unlawful and intentional mutilation of a dead body gives rise to a cause of action on behalf of the person or persons entitled to the possession, control, and burial of such body * * *." In reaching this conclusion, the Court was enunciating the common law rule that had been followed by the courts of other states.

In essence, the theory is this: The next of kin has a duty to bury the body. This duty creates a correlative right to have possession of the body as it was when death came. Unlawful and intentional mutilation of the body is a violation of this right, for which damages may be recovered.

The *amount* of money damages recoverable in such a case would be determined by a jury, on the basis of the mental anguish and suffering which the mutilation caused the next of kin. There is also the possibility of punitive damages, since this is an intentional, rather than a negligent, injury.

These criminal and civil sanctions, standing alone, would make removal operations legally hazardous if there were no clear guidelines concerning lawful authorization for such operations. Fortunately, guidelines *have* begun to emerge. The pattern of legal development has been to enact legislation providing that consent of either a living donor or the survivors of a deceased person is legally effective to authorize removal operations. Once consent has been obtained, by donation of all or a portion of the body,

the physician may proceed with removal operations without fear of criminal or civil liability for mutilation of a dead body.

New Legislation

In 1958 the Michigan Legislature passed a new act relating to the donation of human anatomies by living donors. Under this act, a person of full age and sound mind may give all or any part of his anatomy to any medical or educational institution or to any person. The donor may specify the purpose for which his anatomy is to be used. If he fails to specify a purpose, the donee may use it for any medical or educational purpose.

The donation must be made by a separate written instrument, not to be confused with a will, which the donor must sign in the presence of two competent witnesses who also sign. The written instrument should then be deposited with the donee, who is to retain it on file. The donor may revoke the gift of all or any part of his anatomy by demanding that the written instrument, along with any copies, be returned to him.

Upon the donor's death, the donee or his agent may claim the body for the purpose of removing that portion of the anatomy given the donee. When the entire body is given, provision is made granting the surviving spouse or next of kin an opportunity to provide a funeral service before the body is delivered to the donee.

This legislation also affords protection against liability in civil damage suits to doctors and medical and educational institutions. Provided the unrevoked gift is made as authorized in this act, they are free from liability for removal of that portion of the anatomy so given.

Not only does this Michigan statute facilitate transplant operations; it also facilitates a supply of bodies for medical education and research. It furnishes a legally prescribed method by which a living person may, if he chooses, donate his anatomy for medical or educational purposes. Finally, it provides protection from liability for doctors who remove portions of the anatomy given by this method.

Legislative Deficiencies

But the 1958 statute is not perfect; it has one substantial deficiency. It is silent on the subject of donations

of anatomical parts by a deceased person's *survivors*. If the decedent has not executed a written instrument prior to his death, this act provides no guidelines regarding consent by the next of kin to removal operations.

At the time of the first human heart transplant, in late 1967, approximately forty states had legislation authorizing and regulating gifts of anatomical parts by living donors. A few of these statutes, unlike Michigan's also made provision for donations by the deceased's survivors. But there were wide variations in the content and scope of these statutes. For example, the legislation in three states dealt only with donations for corneal transplants.

Fortunately, since 1965 the National Conference of Commissioners on Uniform State Laws, through one of its special committees, has given these problems intensive study. In doing so, the Commissioners have consulted widely with various medical groups such as the Committee on Medico-Legal Problems of the American Medical Association, the committee on Tissue Transplantation of the National Research Council, and others. This study and consultation has resulted in the drafting of The Uniform Anatomical Gift Act. This model legislation, completed in mid-1968, has been submitted to all the state legislatures for their consideration. It represents an attempt to provide a suitable and uniform legal environment for making anatomical gifts.

The Anatomical Gift

In Michigan the Uniform Act has been introduced in the legislature. It has passed one House with some amendments and is presently being considered by the other House. If it passes in both Houses, which is likely, it will replace the 1958 Michigan statute which I have been discussing. The proposed Uniform Act authorizes any individual of sound mind who has attained the age of 18 years to give all or any part of his body for any of the following purposes: medical or dental education, research, advancement of medical or dental science, therapy, or transplantation.

The gift may be made to surgeons, physicians, hospitals, medical or dental schools, banks and storage facilities, or to a specified individual for therapy or transplantation.

The gift may be made by will, in which case it becomes effective upon the death of the donor without waiting for probate. If the anatomical gift were not effective prior to probating the will in court, the purpose of the gift would often be thwarted because probate procedures take so long.

The donor may also make the gift by a document other than a will. The document must be signed by the donor in the presence of two witnesses who must also sign the document in his presence.

This document may be a small card designed to be carried on the person. This feature of the act should be very useful, since time is often of the essence in performing a successful transplant. In the event the donor dies away from home, there may not be time to determine the existence and location of a more formal document.

Delivery of the document to the donee during the donor's lifetime is not necessary to make the gift valid. In fact, the document or an executed copy may be deposited in a hospital, bank or storage facility for safekeeping and to expedite the operation after death.

The gift does not become effective until the death of the donor. Under the proposed act, he may amend or revoke the gift if he changes his mind prior to his demise. Revocation or amendment of the gift may be accomplished by execution and delivery of a signed statement to the donee. The donation may also be revoked or amended by an oral statement which is made in the presence of others and is communicated to the donee. *This simple procedure for revocation or amendment of a gift should promote the making of such gifts* since the donor knows that, in the event he changes his mind, his new intention may be easily effectuated.

Gifts by Survivors

The model act, in a significant advancement over most prior legislation, also provides guidelines for anatomical gifts by *survivors* of the deceased. This part of the legislation covers those situations in which the deceased did not make a donation of his body while living. The following classes of persons, *in order of priority*, may give all or any part of the decedent's body:

1. *The spouse.*

2. *An adult son or daughter.*
3. *Either parent.*
4. *An adult brother or sister.*
5. *A guardian of the person of the decedent at the time of his death; or*
6. *Any other person authorized or under obligation to dispose of the body.*

These persons may make the gift either immediately before death or after death. The gift may be made by a signed document, telegram or *recorded* telephone message. This provision is obviously very helpful in transplant situations, where time is a crucial factor.

The proposed statute provides some interesting and important rules for those gifts authorized by survivors. First, no survivor may make a gift if he has *actual notice* of contrary indications by the decedent. So, under this legislation, the right of a person to dispose of his body is made paramount and may not be overturned by his next of kin. Second, persons in subsequent classes may make the gift only when persons in prior classes are not available at the time of death. For example, a surviving parent cannot donate his son's body if the son's wife is available. But, if the wife is overseas, the parent may authorize the donation. Third, persons who have *actual notice* of opposition by a member of the same or a prior class may not make a gift. And, fourth, if the donee has *actual notice* of contrary indications by the decedent or of opposition to the gift by a member of the same or a prior class, the donee may not accept the gift. So, if the surviving parent has been told that the decedent's wife objects to a donation of the body or part of it, the parent cannot make the gift.

Legal Liability

The model act has an explicit provision regarding legal liability. It provides that any person who acts in *good faith* in accord with the terms of the act is immune from both civil and criminal liability. This section gives ample protection to physicians engaged in removal operations.

The wide scope of this protection may be illustrated by the following example: A surgeon performs a removal operation on the basis of a

signed document reciting that the donor is of sound mind and has attained the age of eighteen. However, in point of fact, the donor was not of sound mind, was only seventeen and his signature on the document was forged. Assuming the surgeon is unaware of these facts and acts solely on the basis of the purported authentic document of gift, he is protected against legal liability since he acted in *good faith* in accord with the terms of the act.

The Act makes provision for funerals which survivors may desire. However, the funeral may not interfere with medical requirements regarding the condition of the organ donated.

The model act does not attempt to define the time of death. That determination is left to the attending physician, as a medical judgment. The act *does* provide that, in the absence of a contrary authorization by the donor, the attending physician may not participate in the removal or transplantation of any part of the anatomy. Any potential conflict of interest, or even the appearance of a conflict of interest, is eliminated. This portion of the act should also help encourage a donation by a living donor, since it relieves him of any fear that the preservation of the recipient's life would be given precedence over preserving his own life.

Summary

In summary, the Uniform Anatomical Gift Act represents an effort by the legal profession, with the advice of the medical profession, to facilitate the medical and human need for anatomical parts for medical education, research and transplantation. The success of this attempt is ultimately in the hands of the fifty state legislatures. By the end of 1969 or 1970 it is possible that most of the states will have adopted the model act or substantially similar legislation.

There is one other aspect of human organ transplantation that is not covered by the Uniform Act, but deserves mention. The available data indicates that the demand for organs for transplant purposes substantially exceeds the supply of such organs. This raises the question of allocation of these scarce and precious resources among recipients. It also demonstrates the need for continued research and

PLAN TO ATTEND: EIGHTH INTERNATIONAL CONFERENCE ON EXTRA-CORPOREAL TECHNOLOGY

When? July 16-17-18, 1970.

Where? Roosevelt Hotel, New Orleans, Louisiana.

Sponsors? The American Society of Extra-Corporeal Technology and the Department of Surgery of Tulane University School of Medicine.

Featuring:

A refresher course in basics sponsored by the faculty of the School of Circulation Technology of Ohio State University!

A new discussion format with participants from all areas of medicine! A series of two lectures on communicating in medicine by Dr. Lois DeBakey!

A program for the family highlighted with tours and brunch at Brennan's.

A moonlight cruise aboard the riverboat, Mark Twain.

And More!

The theme for this year's Conference is PARTICIPATION. Join us in New Orleans, get involved, share your knowledge and hear the viewpoints of the medical community on topics of vital interest to the Technology! . . .

Meetings of Interest

May 1970

American Thoracic Society—Cleveland, Ohio, May 24-27. Information: 1740 Broadway, New York 10019

International Symposium on Vectorcardiography—Americana Hotel, New York City, May 15-17. Information: Long Island Jewish Medical Center, 270-05 -76th Avenue, New Hyde Park, New York 11040

Symposium on Cardiovascular Diseases—Saint Francis Hospital, Hartford, Connecticut, May 14-16. Information: 114 Woodland Street, Hartford, Connecticut 06105

Symposium on Medical Electrical Safety—Philadelphia, Pennsylvania, May 15. Information: Mr. Dave Kilpatrick, Biomedical Engineering Division, Michael Baker, Jr., Incorporated, 131 Belmont Avenue, Philadelphia, Pennsylvania 19127

June 1970

American Medical Association—Chicago, Illinois, June 21-25. Information: 535 North Dearborn Street, Chicago, Illinois 60610

July 1970

Eighth International Conference of Extra-Corporeal Technology—Roosevelt Hotel, New Orleans, Louisiana, July 16-18. Information: AmSECT, 287 East Sixth Street, Saint Paul, Minnesota 55101

experimentation with mechanical devices as replacements for certain organs.

This aspect of organ transplantation has invoked considerable interest and comment from many sources. Under the model act, the allocation of organs among recipients is, in effect, left to the physicians and medical institutions that are authorized donees. It is clear that initially the selection among potential recipients is a medical question, involving such considerations as matching relevant physical characteristics between donor and recipient to minimize rejection of the transplanted organ.

However, there will no doubt be instances in which two or more recipients are equally suitable from a medical standpoint. In such situations, the selection process involves moral and social values that will say much to future generations about the quality of our civilization.

I do not suggest that this area is

necessarily one that should be the subject of future legislation. However, I would suggest that those individuals and institutions that are involved in making these difficult choices should develop criteria in advance for making their choices. Moreover, the criteria that are developed and applied should meet the test of acceptance by the wider community of interested and informed members of the lay public. Otherwise, there undoubtedly will be attempts made to codify into law some criteria for choosing between potential transplant recipients.

In any field of human endeavor, new advances create new challenges. And perhaps the greatest advances create the greatest challenges. The responsibilities for meeting these challenges have fallen upon our two professions. I am confident that we will succeed so long as we keep the forum of debate open, and fill it with men of rational mind and sensitive conscience.

PERFUDEX

5% DEXTRAN 40*

IN

PHYSIOLOGICAL ELECTROLYTE SOLUTION

PERFUDEX Is Now Available
For Experimental Animal Use In

ORGAN CLEARING ORGAN PRESERVATION LIMB TRANSPLANTATION

PERFUDEX Composition Per 1000 ml.	Approx. Millequivalents Per 1000 ml.
Dextran 40* . . . 50.00 gm.	Sodium 138
NaCl 8.0 gm.	Potassium 6
KCl 0.4 gm.	Magnesium 2
Na ₂ HPO ₄ • 7 H ₂ O 87.5 mg.	
KH ₂ PO ₄ 62.5 mg.	Chloride 142
MgSO ₄ • 7 H ₂ O . 0.2 gm.	Sulphate 2
Dextrose U.S.P. . . 1.0 gm.	Phosphate 2

Osmolality: Measured value 295 mosm.
pH range: 5.0 to 7.0

PERFUDEX SUPPLIED

6x1000 ml. Infusion bottles per case.
Each with sturdy plastic suspension device.

*Same as that used for Rheomacrodex®

PHARMACIA LABORATORIES, INC.

"Originators of the Dextrans"

800 Centennial Avenue Piscataway, New Jersey 08854

(Circle No. 32)