Equity in the selection of recipients for cardiac transplants

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The problem of perceived inequities in the distribution of hearts and other solid organs for the purposes of transplantation. In recent years there has been a great deal of discussion of problems in the allocation of hearts and other organs for the purposes of transplantation. \(^1\) Charges of bias and discrimination have haunted those involved in the procurement and distribution of organs. Many observers of the transplantation field have worried about making organs procured in the United States available to recipients who are not American citizens, \(^3\) while others have bemoaned the practice of shipping kidneys procured in the United States overseas to those institutions willing to pay for them. \(^4\) Likewise, there have been many criticisms leveled at the everyday practice of most transplant centers of requiring those needing transplants to prove their ability to pay for such surgery in advance of any determination of their eligibility. \(^6\)

Not all of the criticism has concerned the selection of adult recipients. An enormous controversy surrounded the initial decision at Loma Linda University Medical Center in California to reject a newborn infant, identified in the popular media as Baby Jesse, as a candidate for a heart transplant. The medical center cited “psychosocial” factors as the grounds for the decision not to accept the infant into the experimental infant heart transplant program at the medical school. \(^7\)

Upon hearing of the decision, the child’s family apparently enlisted the help of a local “Right-to-Life” organization to create a media campaign with the goal of pressuring the medical center to reverse its decision. Charges were made that the infant had been rejected as a candidate simply because his parents were not married. The media gave a great deal of play to the story that Baby Jesse had been rejected as a cardiac transplant candidate solely for the reason of illegitimacy. \(^8\)

In fact, the hospital had followed what is standard practice in every cardiac transplant center in considering psychosocial variables as a part of determining suitability for heart transplantation. \(^9\) In the case of any potential cardiac recipient, or, for that matter in the case of any candidate for any form of solid organ transplant, an attempt is made to assess the psychological ability of the potential recipient to tolerate major surgery as well as a long period of intensive hospitalization. Moreover, the availability of family members or friends to provide outpatient assistance and the ability of the patient to maintain an appropriate diet, drug regimen, and rehabilitative program are carefully weighed in eligibility determinations at Loma Linda and every other institution with a transplant program in the United States.

Of course, the fact that psychosocial factors play a role in determining eligibility for transplant candidacy in all American transplant programs does not in itself demonstrate that such a practice is morally defensible. But the fact that such factors are routinely considered while the revelation of this fact provoked as much controversy and misunderstanding as occurred in the Baby Jesse case shows that those involved in cardiac transplantation and other forms of organ transplantation have not been successful in educating the public as to the rationale for the criteria applied in patient selection. Indeed, it might be argued that far too little effort has been made to open the process of patient selection to public scrutiny, with the result that the sort of controversy that arose in the Baby Jesse case could well be repeated at other transplant centers in the future.

Another reason for concern about equity in the distribution of organs for the purposes of transplantation arose in the Baby Jesse case. Once a decision had been made to consider the infant eligible for a transplant, the parents then turned to the national media for assistance in locating a donor for their child. In one of the strangest episodes in the history of organ procurement, the parents were promised a donor heart on national television by the parents of an infant in Michigan who had been diagnosed as brain dead. It was subsequently learned that another child suffering from a congenital malformed heart similar to that affecting Baby Jesse had been waiting on a national computer...
registry for a donor heart. It appeared that Baby Jesse’s parents had been able to obtain priority for their child as against this other equally needy infant by manipulating the press to draw attention to their own baby. 10

The issue of publicity and “mediagenicity” in obtaining access to organs is not restricted to the realm of cardiac transplants. Children requiring liver transplants and adults seeking bone marrow transplants have sought publicity to ensure that they would receive priority for any donor organs or tissues that might be made available. Although transplant surgeons and other health care professionals disclaim the importance of publicity in selecting particular candidates for transplants, there are at least a few cases in which those families able to obtain publicity for their plight appear to have been able to secure organs or tissues for loved ones ahead of other families who were unable or unwilling to mount publicity campaigns of their own. 11 Although rare, the Baby Jesse case and others like it contribute mightily to the perception that inequities exist in the procedures for distributing scarce life-saving organs for transplantation.

The growing belief that serious inequities exist in the distribution of solid organs for transplantation is especially troubling in light of the fact that organ procurement in the United States is based on altruistic, voluntary donation. Unlike many European nations, which have chosen to assign the authority for obtaining organs and tissues to medical professionals, organ procurement cannot proceed in the United States without the signed written consent of the prospective donor or, in lieu of documentation of intent to donate, written consent of family members or a legal guardian. 12, 13 Since federal and state laws prohibit the sale of organs for the purposes of transplantation, 14 organ procurement is entirely dependent on the willingness of Americans to assist one another by means of altruistic acts.

Altruism, however, is a fragile foundation on which to base organ procurement. If an increasing number of Americans develop the opinion that those involved in the distribution of organs and tissues are anything less than scrupulously fair in the methods used to select candidates, the impact on the availability of hearts, kidneys, livers, and other organs and tissues for transplantation or research could be disastrous. 15

Why is inequity in the distribution of organs a problem? The belief that money, age, the ability to pay, publicity, political clout, or handicapping conditions might play important roles in determining eligibility for transplantation should be of concern for reasons beyond the threat that such beliefs pose to the integrity and efficacy of the present system for obtaining organs and tissues. Transplantation of hearts, livers, and other life-saving organs has assumed an important symbolic status in our society.

Organ transplantation is still viewed by many members of the public and some health professionals with a mixture of awe and uneasiness. 15-18 The ability to use the remains of one person to extend the life of another touches on deeply held feelings about personal identity and the dignity of the human body. The significance assigned to the practice of organ transplantation by the popular media and many religious groups cannot be understated. 19

Cardiac transplantation looms as especially significant because the organ involved has obvious symbolic significance in our own culture. Moreover, since the procedure can be life saving and life extending, it is accorded a special status in the expression of public attitudes concerning the right to have a heart transplant. 16

Despite the fact that there is much rhetoric in the speeches of politicians, media pundits, and health care planners concerning the need to achieve cost containment in our health care system, public opinion polls show that Americans feel very strongly that life-saving treatments ought be provided to all who might benefit from them regardless of the individual recipient’s ability to pay. Community pride and support for heart transplant centers is not based on the provision of life-saving operations for the wealthy and insured but on provision of care to desperately ill patients regardless of their ability to pay.

Since not only public voluntarism but public money is involved in the support of cardiac transplantation, particularly in the form of research grants through federal sources, members of the public feel that the use of a “green screen” requiring that those in need have the ability to pay for surgery should not be used to ration hearts and other scarce solid organs. Because public money helped underwrite the medical research that has resulted in the success rates currently being attained at many medical centers with cardiac transplant programs 3 and because public altruism is necessary for such programs to have a supply of organs available for transplantation, cardiac and other forms of solid organ transplantation have a unique moral status in our society.

Public attitudes on transplantation differ sharply with those on other forms of medical care. Whereas our society seems willing to tolerate enormous differences in the amount and type of medical care available to its citizens based in part on economic differences...
among those seeking care, the “public” nature of cardiac transplantation seems in the eyes of many to exempt this particular form of therapy from the forces of the market so much in evidence in other parts of our health care system.1,19

If it is true that cardiac transplantation has a unique moral status in terms of the perceived legitimacy of claims by those in need regardless of their ability to pay, then inequities in the distribution of hearts for transplantation, whether real or the product of fertile imaginations in the media, will elicit far more outrage than for other therapies that are also scarce, expensive, and life saving. The attention devoted to heart and other forms of organ and tissue transplantation by the media and federal and state legislators confirms the special status of transplantation within our health care system.

The fact that those in need of cardiac transplants usually undergo a significant period of impairment and debility before reaching the stage at which a transplant is considered heightens the special status occupied by cardiac transplantation. Since no permanent artificial organ substitute is presently available, as is the case in kidney transplantation, those suffering end-stage cardiac disease are faced with impending death in a manner that evokes a powerful psychological and emotional pull on providers and the general public.

Cardiac patients, unlike the statistical victims likely to be claimed by natural disasters or traffic accidents, are real, identifiable human beings with whom one can sympathize. The reality of an identifiable pool of chronically ill patients who are facing death unless a transplant can be attempted reinforces the special moral status occupied by cardiac transplantation compared with other types of preventive or therapeutic services, where those in need may be identified as a group only by a bar or dot on a statistical chart.

The complexity of allocation decisions. The paradigmatic example of allocation decisions most often cited in discussions of the ethics of allocation in transplantation is a case in which two or more persons are in direct competition for a particular heart, pancreas, liver, or kidney. Philosophers and theologians like to construct hypothetical examples in which a mother of two who is on welfare is competing against the president of a large university and a retarded adolescent for the same donor heart.20

Those familiar with the kinds of allocation decisions faced by surgeons and other health care professionals in the domain of cardiac transplantation know how unrealistic such hypothetical cases are. It is rare that two or more individuals are equally well suited as candidates for a particular heart at a particular medical center. Even if one extends the scope of such hypothetical cases to include candidates on waiting lists for cardiac transplants at centers all around the United States, it is rare that factors such as size, blood type, tissue type, comorbidity, and prognosis do not point in the direction of one candidate against others as the most likely choice for a particular transplant.

Where such hypothetical cases stray furthest from the reality of the decision-making process is in their insistence that allocation decisions involve only a single decision step. Allocation decisions in the field of cardiac transplantation, and in the allocation of solid organs in general, must be seen as involving at least four separate decision levels: (1) Which organs are available and suitable for transplantation? (2) Who will be considered eligible for transplantation? (3) Who will be considered a candidate for a cardiac transplant or other organ transplant at a particular medical facility, (4) Who will receive a particular organ that becomes available at a particular time at a particular hospital or medical center?

It is this last question that has dominated much of the writing and argument about the ethics of allocation in the field of transplantation. Unfortunately, the emphasis on this last decision-making step tends to distract attention from the role played by value choices at decision-making points that precede the ultimate choice of a recipient.

Many philosophers and theologians have insisted that ethical factors should be taken into account only after medical determinations of need have been made by health care professionals who possess the requisite expertise.21,22 I believe that ethical and value choices are most important early on in the decision making process. Ironically, by the time a particular donor heart becomes available for transplantation, there is little for the philosopher to do except watch as physicians engage in an assessment of who is most likely to benefit from an operation. Such decisions, although not by any means devoid of values, are heavily laden with technical and scientific judgments to which moral theory has relatively little to contribute.

Allocation is a much more complicated process than is suggested by abstract hypothetical cases that are intended to highlight aspects of the process of moral reasoning rather than clinical realities, or human interest stories so much in evidence in the popular press that focus on the plight of individuals awaiting heart transplants. There are many value judgments that precede the decision of what to do with a specific donor heart when it becomes available.
What organs are available for transplantation? Perhaps the most crucial decisions concerning the allocation of hearts and other solid organs for the purposes of transplantation are the determinations of public policies and medical criteria for procuring organs. The United States has for many years had a public policy, exemplified in the Uniform Anatomical Gift statutes of all 50 states and the District of Columbia, that relies on voluntary, free, and altruistic donations to obtain hearts and other transplantable organs and tissues.12

This policy, which might be referred to as “encouraged voluntarism,”16, 14 emerged in the 1960s in response to a number of societal concerns about organ donation. During the 1960s the primary organs transplanted were kidneys and the major source of such organs were living related donors. Courts and legislatures were especially concerned that those persons involved in the donation of a kidney for the purposes of transplantation be protected against coercion on the part of family members or health care professionals. As a result, great emphasis was placed in various court decisions made during this period on informed consent and free choice as key moral norms that ought to protect prospective donors against attempts to coerce a donation.

During this period a number of reports appeared in the popular press revealing that some researchers had taken tissues from cadavers for research purposes without obtaining permission from either the donor or the donor’s family or legal guardian. Much concern was expressed about the need to guard against the surreptitious removal of cadaver tissues and organs. Again, informed consent and voluntary, free choice were seen as the best ethical mechanisms for protecting the rights of individuals to retain control over the disposition of their bodily remains after death.12

Although many involved in the field of transplantation believe that the Uniform Anatomical Gift Act evolved as a policy response to the need to obtain a greater number of organs and tissues for transplantation, this is not the case. In fact, the Uniform Anatomical Gift Act evolved as a means to protect potential donors against coercive abuse or surreptitious invasions of bodily privacy. The strong emphasis on informed consent, voluntarism, and free choice in our public rhetoric concerning organ donation emerged from a climate of concern about possible abuses of vulnerable donors, not as a mechanism for ensuring a reliable and efficient supply of organs for those in need.

If the creation of a policy for the efficient procurement of organs and tissues had been the sole value driving policy, then surely a different approach would have been taken toward the ethics of organ procurement. The most efficient way to procure organs would simply be to give physicians the authority to remove useful organs and tissues at the time of death and before cadavers are released to family members or legal authorities for burial. A somewhat less efficient but nevertheless powerful system might have presumed that donation was permissible unless written documentation to the contrary could be produced or family members or guardians raised an objection at the time of death.9 If the primary goal of public policy had been only to increase the supply of organs and tissues, then one might even have lobbied for the creation of a free market in organs, as some commentators did in the 1960s with the hope of maximizing donations from both living and cadaver donors.

None of these steps were taken. Physicians and other medical personnel were left with the freedom to solicit organs and tissues as they wished. Proposals to allow some form of “presumed consent” to govern the procurement of organs and tissues were dismissed as far too coercive, too threatening to the sense of community inherent in voluntary altruistic donation, and unreliable in terms of protecting individual autonomy. Arguments for creating a market in body parts were rejected on the grounds that money was not a proper motive for harvesting tissues and organs.13, 19

Public policy concerning organ procurement has had much more than the efficient procurement of organs and tissues as its goal. Ethical values such as freedom, altruism, personal choice, and autonomy have been much in evidence in shaping the system used to procure organs and tissues for transplantation.

The degree to which transplant programs must make allocation decisions has been directly influenced by the ethical choices that have been made concerning the importance of according freedom to both those who might seek organs and tissues and those who might give them. The price of a policy that places individual choice on a par with efficiency is that there are fewer organs available than might be the case if a public policy less concerned with voluntarism and altruism were adopted.

A variety of studies have been undertaken to determine the extent to which Americans are willing to donate organs and tissues. The findings show that the rates at which organs and tissues are procured are far below those reflected both in survey responses to hypothetical requests for donation and in actual behavior when families are asked about organ and tissue donation.4, 23
The primary factor for the gap between the willingness to donate and the actual number of organs and tissues obtained seems to be the failure of the donor card/written directive system to act as an effective mechanism for encouraging donation. This failure appears to be a function of the fact that many persons who are willing to donate are reluctant to carry donor cards or written directives for fear of receiving less than maximal care should they suffer a traumatic injury, that many medical personnel are reluctant to ask about organ and tissue donation when a death occurs, and that the sense of obligation associated with organ donation is weak.\(^{13, 19}\)

Although our public policy places great moral emphasis on the right of the individual to control the disposition of his or her remains after death, the fact is that written directives do not appear to be a particularly reliable mechanism for ensuring that one’s choices will be discovered and respected. All too often donor cards or driver’s licenses indicating a desire to donate are not found or are misplaced.\(^{30}\) Few medical personnel are willing to act on the directives without obtaining the permission of family members, even though a donor card or other written directive is a legally sufficient warrant for undertaking organ and tissue procurement. De facto veto power is accorded family members over the wishes of the deceased where the donation of organs and tissues is concerned.

Although some may bemoan the fact that medical personnel do not make efficient use of written directives in obtaining hearts, livers, and other organs and tissues from cadaveric sources,\(^ {24}\) the fact remains that our society places a great deal of value on the desires and wishes of family members in matters pertaining to death and the disposition of cadaveric remains. While the law may attempt to promote personal autonomy as the central value that should govern organ procurement, professional and societal custom accords great respect to family wishes and choices. Thus, unless efforts are made to persuade families rather than individuals of the importance of organ donation, the policies governing attempts to increase the supply of organs and tissues cannot succeed.

The recognition of the limitations of written directives as effective mechanisms for effecting personal choice and of the need to involve families at the core of the decision-making process with respect to organ donation leads directly to recognition of the need to develop a procurement policy that respects personal choice and voluntarism while providing ample opportunity for individuals and families to consent to donation if they so desire. A policy of requiring hospitals to make a request of next of kin as to their willingness to consent to organ and tissue donation would appear to ensure that the opportunity to make a donation is presented and to increase the likelihood that those who would have wanted to serve as donors receive the chance to do so.\(^ {25, 26}\)

More than 25 states enacted legislation requiring that such requests be made during 1985 and 1986. Although it is still too early to analyze the impact such laws have had on organ and tissue availability, many transplant centers have observed an increase in the number of organs and tissues available for transplantation. In the state of Oregon, which was the first state to enact and implement a required request law, corneal donations have increased 250% over the previous year’s figure. The heart transplantation program at Stanford reports that many more hearts and lungs have become available with the enactment of such legislation in Oregon and California. There is every reason to expect similar increases in organ and tissue availability as the public and the health care professions become familiar and comfortable with the concept of required request.

As the field of transplantation advanced through the 1970s with more powerful immunosuppressive drugs and better surgical and tissue matching capabilities, the need to obtain more organs and tissues escalated dramatically. As the enactment of required request laws in many states illustrates, determinations of the supply of organs and tissues available for transplantation are closely linked to public policies and public attitudes concerning organ donation. But many other factors also influence the size of the available supply of organs and tissues for transplantation.

The state of the art in various areas of transplantation plays a direct role in the determination of both estimates of need for organs and of which persons are seen as “medically suitable” for organ donation. As success rates in the field of cardiac transplantation have improved, pressures have mounted to seek ways to increase the supply of hearts available for transplantation. For example, proposals have been made to modify existing laws to allow organ donation from anencephalic infants. Others in the transplant field have begun to consider the possibility of resuscitating persons pronounced dead on arrival as potential donors. Still others have begun to wonder whether the medical criteria for determining the acceptability of organs in terms of the age of the donor and storage time have been drawn too cautiously.

None of these suggestions may be acted upon in the field of cardiac transplantation or in any other area of
organ or tissue donation. But such suggestions highlight the critical role played by values concerning safety, risk, and respect for the dead and newborns with severe congenital conditions that set the framework in which determinations of need and supply are made. There is a direct causal relationship between the medical profession’s view of the efficacy of cardiac transplantation and the overall determination of medical need for the procedure. Views as to the safety and efficacy of cardiac and other forms of transplantation in turn set the stage for determinations of candidacy for transplantation. It is misleading to suggest that determinations of need are made independently of an awareness of the overall safety and efficacy associated with a particular form of transplantation. Patients deemed “medically suitable” for a cardiac transplant in 1968 hardly resemble those deemed “medically suitable” in 1986. Similarly, persons deemed “medically suitable” to serve as donors in 1968 bear little resemblance to those seen as “medically suitable” in 1986. Determinations of risk factors such as age and comorbidity have evolved in response to changes in medical beliefs about the safety and efficacy of cardiac transplantation. This pattern will surely continue as the safety and efficacy of cardiac transplantation continues to improve in the years to come. There should be little doubt that decisions of medical suitability for heart donation will be modified as the demand for more donor hearts increases with improving survival rates.

Who is eligible for a transplant? It is sometimes said that determinations of eligibility for a transplant of a heart, liver, or other organ rest only on scientific or medical judgments. But this is patently not the case in a situation of scarcity such as prevails in the cardiac transplant field.

It has already been noted that nearly every medical center in the United States makes use of psychosocial factors in determining the eligibility of a person for a cardiac transplant, as was the case with Baby Jesse at Loma Linda University Medical Center. The general idea behind the use of such factors is that it makes no sense to consider persons as eligible who lack the ability to survive a complex and invasive procedure such as heart transplantation. Society places great weight on efficacy in the use of scarce resources. Since the medical profession has also invoked efficacy in the past as a means of coping with rationing choices in other emergency situations, it is clear that this value is given high priority as a matter of practice where determinations of eligibility must be made in conditions of scarcity.

Other factors such as geography, national origin, and citizenship play crucial roles in determining the size of the pool of potential candidates for heart and other forms of organ transplantation. Determinations of need for heart and other forms of transplantation, while not explicitly acknowledging the political realities that surround the provision of care, are extraordinarily sensitive to them. There has been much controversy surrounding issue of whether organs donated by Americans should ever be given to noncitizens of this country and, conversely, whether foreigners seeking transplants should be allowed to enter this country for this purpose.

Many proposals have been made as to whether access to transplants ought to be given to non-Americans. Some suggest that an “Americans first” policy should apply at all transplant centers. Others argue for the creation of a quota.

The relative merit or moral persuasiveness of these proposals is overshadowed by the fact that eligibility for transplantation is already closely linked to considerations of geography and nationality. It is equally important to realize that the question of whether foreigners should have access to American transplant centers or whether geographic preference should be given to the residents of certain cities or states depending on the location of a particular transplant center involve considerations of value that have nothing to do with medical or scientific facts. Eligibility and “medical suitability” are highly sensitive to nonmedical considerations.

Indeed, it is inappropriate to place the burden of deciding whether American organs can be sent to foreign transplant facilities or whether foreigners can be admitted to American transplant centers on the medical profession. Traditionally, physicians and other health care personnel have viewed considerations of nationality, race, or ethnicity as incompatible with the ethics of their profession. According to most existing codes of ethics in the health care professions, it is need and the ability to help that should guide the physician or nurse in treating the patient.

I believe that the traditional view of medicine is correct — that race, nationality, and ethnicity should not be allowed to play any role in guiding determinations of who will receive care and who will not. Medicine should remain as indifferent as is reasonably possible to such considerations. Proposals for the creation of quotas, which place the burden of responsibility for determining eligibility squarely on the shoulders of surgeons at transplant centers, should be rejected as incompatible with medical ethics. This is not, however, to say that the question of access to foreigners and
the matter of acceptability of geographic preferences do not merit answers. These are basically political questions and ought to be answered by legislative mechanisms. Political questions deserve political answers and those formulating policy need to understand how their determinations will affect the demand for transplants and the ability of existing services to meet this demand.

Similarly, factors such as the ability to pay and individual liability for organ failure play a role in determining eligibility. If transplants were made available to everyone regardless of ability to pay, through some sort of national health insurance scheme, the size of the pool of eligible persons would be greatly affected. Likewise, expanding the range of diseases and conditions viewed as amenable to and deserving of surgical intervention would further widen the pool of potential transplant recipients.

Perhaps the most glaring illustration of how personal responsibility for one's disease is used as a criterion for eligibility arises in the context of liver transplantation. Should someone who has brought on their own liver failure as a result of alcohol or drug abuse have access to a transplant? Although there may be sound medical reasons for excluding certain persons from the pool of those deemed eligible for transplants on the grounds that their behavior makes the chances of a successful transplant unacceptably low, society distinguishes between organ failure brought on by congenital defects or other sources beyond the control of the individual and that resulting from mental disorders or conscious choices to follow dangerous life-styles. As with the issue of allowing access to foreigners, eligibility for a transplant sometimes involves considerations of life-style, behavior, and personal liability for illness, which shape many assessments of medical need.

Who is a candidate for transplantation at a specific medical center or hospital? The process of allocating scarce organs and tissues is not over once a determination has been made of the conditions and policies that will determine the overall size of the pool of those considered eligible for transplantation at any given time. The fact that a person is viewed as eligible for a cardiac transplant on both medical and social grounds does not end the process of decision making with respect to allocation. The next level of decision making arises when an eligible candidate seeks admission as a candidate to a specific transplant program.

There are many factors, both medical and nonmedical, that influence decisions to admit someone as a candidate at a specific medical center. These factors show enormous variability from center to center.

One critical factor in determining standards for candidacy is the experience that a particular center has in doing transplants. The standards for admission to the cardiac transplant program at Stanford University differ from those at medical centers with little or no experience in heart transplants. Newer centers are far more cautious than experienced centers in their willingness to undertake "hard cases."

The fact that a hospital may be involved in teaching or research can also influence the kinds of criteria that are brought to bear in governing admissions policies for particular procedures. Patients whose cases are for one reason or another "interesting" may have a better chance of admission at a medical center oriented toward research than one committed only to the provision of therapy.

Unfortunately, not all transplant centers are as forthright as they might be in informing patients about the role played by considerations of research or teaching in the evaluation process for selecting patients for admission. Patients and their families are often confused as to why one center refuses to consider them for admission while another will view them as suitable candidates.

Perhaps the most obvious illustration of the role played by teaching and research in the admission of particular patients to specific transplant programs is found in variations that exist from center to center with respect to the importance of comorbid conditions. Some centers will not attempt a cardiac transplant on patients older than 55 years of age on the grounds that the changes associated with aging itself make such surgery overly risky. Other centers have decided to extend the boundaries of candidacy to include persons who are in their late 50s or even early 60s. Attitudes toward risk, toward the desirability of learning to cope with more difficult cases, and the desire to advance the state of the art in cardiac transplantation all play a role in the way in which the criteria for admission are formulated. Although these decisions involve many medical factors, they clearly involve value choices that go beyond what can reasonably be termed purely medical or scientific considerations.

It is not at all clear that policies governing age as a factor in determining admission to specific medical centers ought to be left only in the hands of transplant surgeons. Even if age were known to correlate exactly with prognosis, there would be some exceptions depending on the physiologic condition of the specific patient. The fact that more factors are involved than efficacy and efficiency is highlighted by the policies that exist regarding repeat transplantation.
Decisions as to the willingness to perform repeat transplants in patients who have rejected a heart or a liver are another source of variation in criteria for candidacy from one center to another. Some centers view second or third transplants of a heart or a liver as purely experimental. Others see repeat transplantation as a procedure that cannot be undertaken in the context of the overwhelming scarcity of solid organs. Still other surgeons argue that the decision to attempt a second transplant in someone who has fared poorly ought to be viewed in the context of a physician’s commitment not to abandon a patient for whom care has been rendered.

The ability to perform repeat transplants successfully in patients whose original graft has failed varies with the experience of both the transplant team and the medical center at which the surgery is done. However, repeat transplantation is known to be a far more risky endeavor than providing a new transplant to a person in similar need.

Repeat transplantation at most centers must be viewed as experimental. As such it should receive lower priority than first transplants. If repeat transplantation is to be pursued as a strategy for coping with graft failure, then it must be done under highly controlled conditions and only at a small number of medical centers. Arguments concerning the abandonment of patients will not be persuasive unless and until relatively high success rates are attained. The goal of therapy should take precedence over the goals of advancing the state of the art in transplantation surgery.

Who should receive a particular organ that becomes available at a specific medical center? Each medical center involved in tissue and organ transplantation maintains a list of possible candidates for transplantation. Until recently, there were two national networks that allowed for the listing of patients who had been admitted to candidacy for transplantation at hospitals in the United States and Canada. Since participation in a network by hospitals and medical centers with organs to donate or with patients who might benefit from a transplant is entirely voluntary, there is no guarantee that organs and tissues will be sent to the centers where they might be used most efficiently and efficaciously.

Nevertheless, with some notable exceptions, most hospitals and medical centers are willing to distribute organs on a regional or national basis in response to determinations of medical need provided by individual medical centers. One ironic result of this policy is that individual transplant centers may not provide an honest evaluation of the medical needs of particular patients for transplants because they understand that the environment in which allocation proceeds is highly competitive. Transplant coordinators complain about the practice of some transplant centers to upgrade the medical needs of their patients to obtain priority for any organs that may become available.

Once an organ has become available at a particular medical center or hospital, the decision-making process as to which patient will receive it is relatively simple. Considerations of tissue type, blood type, size of donor organ, and recipient tend to identify a single person as the obvious choice for a particular tissue or organ.

Other factors enter into the decision-making process. Although they are not widely appreciated by patients or the general public, they do play an important role in the final determination of who will receive a transplant and who will not.

Foremost among such factors is the availability of a surgical team to perform a transplant at the time an organ becomes available. A cardiac transplant team may already be involved in an operation and there may be no other teams available to perform a transplant despite the availability of an organ. Differences in the skill levels of surgical teams may also play a role in whether or not a particular transplant is undertaken.

The clinical condition of a patient at the time an organ becomes available also plays a role in allocation decisions within medical centers and hospitals. A patient may undergo a sudden shift in status, which in the eyes of the transplant team necessitates his receiving priority over all other candidates. The fact that such changes can be rapid and unexpected shows the necessity of leaving a certain amount of discretion in the hands of transplant teams.

Despite the fact that his decision-making process is subject to variations in the availability of skilled surgeons and the status of potential recipients, most decisions as to who will be selected from a waiting list are fairly straightforward and uncomplicated. Despite the emphasis placed on this stage of decision making in philosophical and religious analyses of the ethics of allocation, nonscientific factors play a relatively minor role at this stage of the allocation process.

Conclusions and recommendations. It is important that transplant surgeons, other members of the transplant community, prospective patients and their families, as well as the legislators and bureaucrats responsible for public policy in this area understand the complexities involved in the process of allocating scarce organs and tissues for transplantation. The public needs to have far more information than is presently being made available by the transplantation community as to the ways that standards for eligibility are formulated and applied.
Nothing is more threatening to the integrity of the present system for obtaining organs and tissues than the perception that bias and inequity prevail within the allocation process. Publicity would seem to be the best method for ensuring continued public support for organ and tissue donation and for legislative support of the costs of performing organ and tissue transplants.

The time has long since passed when general determinations of eligibility should be left in the hands of medical professionals. It is ethically wrong to ask or expect physicians and other health care professionals to set gross eligibility standards based on nationality, handicapping conditions, or the ability to pay for cardiac or other forms of transplantation.

Organs and tissues are obtained by appeals to the public to save lives, not by appeals to save the lives of those who can afford to pay or those who are not disabled. Gross eligibility determinations are political, not medical, decisions. The public should be asked to communicate its desires concerning nationality, ability to pay, age, and handicapping conditions to elected representatives at the state and federal levels. They in turn should clarify the general policy that will govern consideration for a tissue or organ transplant for the members of our own and other societies.

Transplant centers involved in research or teaching must make these functions clear to those who seek admission as transplant candidates. It is wrong to subject patients to lengthy and often expensive evaluations in the hopes of obtaining information useful for research or educational purposes without obtaining the consent of those involved in such evaluations.

Those seeking experimental surgery such as repeat transplantation should fully understand the highly experimental nature of these procedures. They should further understand that the moral obligation surgeons have to make the most efficient use of the scarce pool of available organs means that their chances of receiving a second transplant will hinge on the lack of a recipient who has a higher probability of benefiting from a transplant.

The time has come to create a single national network for the allocation of tissues and organs. Participation in such a network should be compulsory. All participating transplant centers should be required to follow a uniform system of reporting on patient needs. Periodic audits should be undertaken to assess the accuracy of patient need assessments. Centers should also be required to participate in a national organ transplant registry so that information concerning transplantation can be made easily available to health care professionals and to the general public and its elected representatives.

Finally, strict controls ought to be instituted over the number and qualifications of those centers and hospitals wishing to undertake various forms of organ transplantation. To ensure the efficient and efficacious use of those organs that are obtained, restrictions should be placed by public agencies and by the medical profession itself over which centers will be allowed to undertake transplants for research or therapy.

Historically those in the field of organ and tissue transplantation have enjoyed a great deal of freedom from regulation and supervision by outside bodies and the general public. This freedom is characteristic of many areas of American medicine and hospital practice. But transplantation is not like other areas of health care.

Transplantation is still a relatively new and evolving form of surgery. Some aspects of transplantation such as xenografting and the use of fetuses or infants as donors raise moral and legal issues that have few precedents within our health care system.

Transplantation is also expensive and consumes vast amounts of medical resources — resources that might be better used for other purposes.

Most importantly, transplantation depends on the altruism and good will of the American public for its very existence. Organs and tissues cannot be bought and sold nor can they be seized — they must be given freely and voluntarily. If we are to continue to follow a public policy of voluntarism in the procurement of organs, then those involved in the provision of transplantation services will have to be willing to tolerate more regulation and more publicity than they have in the past.

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