Technology and Culture

Organ transplantation in developing countries
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Organ transplantation has become an effective means of
restoring health and saving lives, but a number of difficulties
remain to be overcome. Especially in developing countries,
greater clarity is needed on the sociocultural, economic, ethical,
legal and technical factors involved.

Many people are reluctant to donate
organs although they know that this could
save somebody’s life. In the United King-
dom polls showed that 70% of the popu-
lation were in favour of donating their
organs after death, but only 25% carried
donor cards. In Saudi Arabia these figures
were 88% and 14% respectively. This
discrepancy between what people say and
what they do may be explained in part by
privately held beliefs and values, which
have to be respected when preparing an
organ transplantation policy.

Beliefs

Most people in developing countries are
strong believers in fate and destiny. Al-
though all religions express concern for
the welfare of mankind, some groups
argue that organ transplantation is “an
artificial prolongation of life” and there-
fore against the will of God. Some argue
further that the human body belongs to
God and thus no person, whether alive or
dead, has the right to donate a part of it to
someone else.

These tend to be minority views, however,
and most religious leaders accept organ
transplantation as a means of saving life.
They quote the passage in the Koran
which says that the merit of saving one
person’s life is equal to that of saving the
lives of all people. They also point out the
illogicality of admiring a person who gives
his or her life to save another from death
and yet opposing the gift of a part of one’s
body after death for the same purpose.
Owing partly to the strength of such
arguments, centres of excellence for organ
transplantation have been established in
Kuwait and Saudi Arabia, where posthu-
mous transplantations are carried out with
great success.

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A sometimes more difficult issue is the definition of death. For the recovery of organs from cadavers kept on mechanical devices, a clear and accepted definition is indispensable. According to the concept of "brainstem death", a person is said to have died when he or she has suffered an irreversible loss of the capacity to be conscious owing to the death of the central trunk of the brain. This is widely accepted by the medical profession in most countries as a criterion of death provided certain conditions are fulfilled to confirm its irreversibility. This definition makes it possible to retrieve organs for transplantation from brainstem dead persons whose cardiorespiratory systems are artificially maintained by means of technical devices.

In certain religious and cultural traditions this view is not accepted, and the older definition of death as cessation of pulse and spontaneous respiration is retained. In some developing countries this view finds support in a minority of the medical profession, who argue that cases of reversible vegetative state may indicate that brainstem death is also reversible. Such arguments can have a strong influence on public opinion, which sometimes discourages decision-makers from legalizing the concept of brainstem death, thus limiting the retrieval of organs from cadavers.

The Muslim religious clergy accepted the concept of brainstem death at conferences in Kuwait in 1985 and Amman, Jordan, in 1986, but this was later disputed by some medical and political groups. In 1996, however, the Islamic Organization of Medical Sciences issued a declaration allowing the recovery of organs from a brainstem dead person after fulfilling the usual conditions set out in various protocols approved at conferences in Havana and San Francisco.

Economics and ethics

Organ transplantation is a costly procedure even for industrialized countries. Among other things, it requires efficient intensive care, good transportation, proper preservation, advanced laboratory facilities and excellent staff. The cost of maintaining these services is another factor responsible for the shortage of organs that can be recovered from cadavers. When the cost of immunosuppressive therapy is added, organ transplantation is unaffordable to the majority of the population in developing countries, especially in the absence of health insurance. In these countries renal transplantation from living donors is the commonest form of organ transplantation.

Poverty and the high cost of organ transplantation raise many ethical questions. In spite of legal measures taken by most countries and a strict code of conduct for the medical profession, attempts to be equitable have so far been unsuccessful. The chances of rich or influential patients obtaining a transplant are much better than those of the poor. Trade in organs – both within the country and, in the case of rich patients, from other countries – has been difficult to prevent. These factors can place the medical profession under considerable strain which is reflected in their performance and their ethical values.
Legislation

Most developing countries have laws or decrees which regulate organ transplantation. These laws usually penalize trade in organs but do not cover other important matters such as consent, definition of death, or donor registries. As a result, organ transplantation is carried out without a clear legal framework except for certain regulations and codes of conduct imposed by the medical associations concerned. These regulations usually take into account social, cultural, religious and ethical factors but they are not comprehensive and they are not legally binding. This can lead to complications.

The code of conduct for the medical profession in many countries forbids the donation of kidneys by living donors unless they are first or second degree relatives. It may also forbid living donations to foreign patients. Rich or influential patients sometimes get around such regulations by going to a country that does not have such restrictions, and having the transplant carried out there. Another approach sometimes used is to arrange an opportunistic marriage between patient and donor, which can overcome both these restrictions.

With regard to corneal grafts, in one country these were discontinued throughout 1996 after a legal dispute involving a reputable corneal bank. The dispute started when a young man died in a major university hospital. In the course of the post-mortem examination his corneas were retrieved for the hospital's corneal bank, in accordance with authorized practice for university hospitals. His father identified the body the next day, and sued the hospital, the corneal bank and the staff for retrieving his son’s corneas without consent, in violation of the law regulating corneal graft. The law regulating corneal graft had been drafted in 1956 and was vague on the matter of consent. The situation was finally clarified by a ministerial decree early in 1997.

In general, legislation on organ transplantation in developing countries needs to cover, with as much clarity and as little ambiguity as possible, the following issues, among others:

- the criteria for verifying brainstem death and the personnel authorized to certify it;
- requirements for consent of living donors as well as posthumous donors, family consent, conditions in which consent can be presumed, and how consent is recorded;
- registry system for potential donors and recipients;
- regulations for institutions and health professionals regarding both living and posthumous donation of organs;
- penalization of trade in organs.

Outlook for the future

Developing countries face a double difficulty in bridging the gap between demand and supply in the case of organ transplantation. On the one hand potential demand is high because poor health and environmental conditions make organ failure
common; on the other, supply is low because the economic situation makes for poor health infrastructure which limits the availability of suitable organs for transplantation. In particular, the shortage of emergency services, intensive care units and trained personnel presents a major obstacle for posthumous organ recovery. Even in the case of renal transplantation from living donors the rate of success is lower than in industrialized countries. This is related to the inadequacy of laboratory and hospital facilities, as well as the cost and availability of immunosuppressive therapy, resulting in a high rejection rate.

Developing countries can expect to go through a transition period during the next few years, with rapidly changing priorities for health. Scientific advances and improved socioeconomic conditions are likely to increase the demand for organ transplantation. As centres of excellence are established and appropriate legislation comes into effect, the emphasis will shift towards public health aspects of organ transplantation rather than the consideration of cases in isolation from each other.

WHO should foster international cooperation in promoting equitable access to organ transplantation in developing countries. For this, guidelines will be needed to help ensure that organ retrieval and transplantation are undertaken according to the best professional ethical practices and in full respect of the human rights of donors and patients. They should also provide maximum protection for the integrity, health and welfare of living donors (1).

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**Ethical issues in genetic engineering**

The most basic of conflicts in the field of biotechnology and genetic engineering is over whether it should be done at all. This concern is expressed in terms of one of the two approaches to ethics: the utilitarian, which focuses on consequences, and the deontological, which focuses on principles. Thus the deontological approach would be one that said that all genetic engineering is wrong because it contradicts the natural law, or God’s law. A utilitarian or consequentialist approach would be one that focused on questions of common good, where good was evaluated in terms of the overall consequences of biotechnology.