



No.87

# Human Tissue Transplantation Crime

Elizabeth King and Russell G. Smith

*The transplantation of human tissue (including organs) from one person to another can have dramatic benefits for the recipient, and often prevent an early death or substantially improve quality of life. As in other medical procedures, however, it is essential that the donor of tissue freely consents; in this case, to the removal of tissue from his or her body. In the absence of informed consent from the donor, those involved in arranging and conducting the transplantation procedure may be liable to compensate the donor as well as face criminal sanctions for assault. Some laws also prohibit the purchase and sale of human tissue as well as advertising the availability of such transactions. This Trends and Issues paper examines illegalities arising from human tissue transplantation and reviews developments in the available regulatory approaches which have occurred since the publication of the Institute's Trends and Issues paper, Body Crime, in March 1991 (Halstead & Wilson 1991).*

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Illegality arising from the transplantation of human tissue exists primarily because of an international shortage of donors able to provide tissue suitable for use in recipients. If there were no such shortage, illegal transplantation would be unlikely to take place. Unfortunately, the demand for transplantable tissue, and organs in particular, still far outweighs the supply of suitable donors.

Table 1 shows the number of transplants undertaken in Australia and the number of people who have donated organs (other than corneas and bone marrow) after their death since 1990. The demand for transplants, however, remains considerable with lengthy waiting times as shown in Table 2.

Since 1990, waiting lists have continued to grow, largely due to improvements in transplantation techniques which have increased the number of patients suitable for transplantation through developments such as the creation of more effective immunosuppressant drugs. In 1991, there were, for example, 984 patients with end-stage renal failure; by 1995, there were 1358.

Australia's donation rate, which in 1997 was relatively low at 10.3 donors per million population, has declined slightly in recent years. The rate at which organs from donors have been used has, however, increased, largely due to improved surgical techniques. In 1987, 183 deceased donors provided organs for 414 people (2.3 organs per donor), while in 1997 190 deceased donors provided organs for 704 people (3.7 organs per donor) (Gray 1998, p.5).

In the Aboriginal community, the problem is far worse both in terms of demand for organs and supply. In 1991, for example, The Australia and New Zealand Dialysis and Transplant Registry reported its intake of new patients suffering from renal failure to be four times higher amongst Aboriginal than non-Aboriginal patients (Australia and New Zealand Dialysis and Transplant Registry 1996, p.100). In South Australia, Aboriginal patients were reported to

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require dialysis between seven and eight times more than non-Aboriginal patients (Willis 1995, p.603). With this higher demand for organs, however, is a corresponding reduced availability of organs for donation. This is due to various cultural and social impediments to tissue donation from deceased donors and problems of close tissue matching from live donors as well as difficulties in ensuring that recipients are able to manage organ anti-rejection therapeutic regimes appropriately (Willis 1995, p.605).

### Informed Consent

Principles of medical ethics and law provide a comprehensive regulatory framework in which human tissue transplantation may be carried out. These controls seek to instil public confidence in the process of tissue removal and to criminalise transplantation which takes place without informed consent or for illegitimate financial motives.

The starting point of the existing controls is informed consent. The notion of consent to medical procedures is based upon the ethical principle of respect for another person's autonomy, or allowing people to make decisions about what is done to them. In the absence of consent by the donor, the removal of tissue would constitute an assault.

To be effective, consent must be freely made, given with respect to the precise procedure to be carried out, given by a person with legal capacity to give consent, given in writing, in words, or implied from conduct, or authorised by a court order. In addition, consent must not be obtained by fraud or duress, which makes difficult the process of obtaining consent from people in the custody of the State, such as prisoners.

**Table 1: Transplants Undertaken in Australia and Number of Cadaveric Organ Donors, 1990-97**

Tissue Type	1990	1991	1992	1993	1994	1995	1996	1997
Kidney	490	489	476	457	440	441	475	490
Heart	98	98	95	105	94	93	90	91
Heart-Lung	12	19	18	13	13	13	7	4
Lungs	5	18	31	56	66	69	66	83
Liver	80	116	138	127	137	146	139	153
Pancreas	9	8	10	11	15	13	12	16
Corneas	790	916	1019	965	992	900	522	839
Bone Marrow	247	368	478	529	632	681	783	947
<b>Total</b>	<b>1731</b>	<b>2032</b>	<b>2265</b>	<b>2263</b>	<b>2389</b>	<b>2356</b>	<b>2094</b>	<b>2623</b>
Organ Donors*	203	209	216	224	185	184	194	190

\* Excluding cornea and bone marrow donors.

Source: ACCORD (1998).

Consent must also be informed. Doctors must explain to patients the nature and purposes of the procedure to be carried out in sufficient detail to enable the patient to make an informed and free choice in view of the potential benefits and risks of the procedures. Most importantly, patients should be informed of any material risks inherent in the proposed procedure. This is determined by considering risks which both a reasonable person in the patient's position and that particular patient would attach significance to (*Rogers v Whitaker* (1992) 175 CLR 479).

### Statutory Requirements

Each jurisdiction in Australia has legislation regulating human tissue transplantation. In summarising the principles which apply, the Victorian *Human Tissue Act 1982* will be used as an ex-

ample, although differences do exist in the comparable legislation in other States and Territories.

#### Cadaveric Transplantation

Living adults are able to consent in writing (and, in certain circumstances, orally) to the removal of tissue after their death. This may take place by signing a donor card or indicating on one's driver's licence a desire for tissue removal to be carried out following death. If valid consent is present, tissue may be removed following the donor's death after enquiries have been made to ensure that the donor consented and that the consent had not been revoked.

In the past, questions arose as to the time at which death occurred, and in one case in England a doctor was charged with manslaughter following the removal of a kidney from a patient who had suffered brain

**Table 2: Transplant Waiting Lists and Times at 31 December 1997**

Tissue Type	Number Waiting	Waiting Times*
Kidney	1511	1-3 years
Heart	110	3-12 months
Heart-Lung/Lungs	88	9-12 months
Liver	44	2-6 months
Pancreas	30	12-18 months
Corneas	540	5-24 months
Bone Marrow	43	7-8 months

\*Approximate time based on wait for a suitable donor, not availability of hospital beds.

Source: ACCORD (1998).

damage in a fight, it being argued that the patient's death was caused by the removal of the kidney rather than the brain damage caused in the fight. The doctor in question was acquitted when it was established that the death had not been caused by the removal of the kidney (*R v Potter*, *Times* (London) 26 July 1963).

The *Human Tissue Act 1982* (Vic), now defines death as irreversible cessation of blood circulation or irreversible cessation of all function of the brain (s. 41). Where the donor is on a respirator, two doctors must certify death in these terms.

Where it is unclear whether or not the donor consented to the removal of organs before death occurred, the donor's next of kin may give consent for the removal to occur in certain circumstances (s. 26).

#### *Living Adult Donors*

At common law, it was arguably an assault to remove tissue from a living person where the procedure involved an unnecessary, mutilating operation which could result in death or disablement. Sections 7 to 8 of the *Human Tissue Act 1982* (Vic) now permit individuals over the age of 18 years to consent to the removal of regenerative tissue for the purpose of transplantation into the body of another person or for certain therapeutic, medical or scientific purposes. They may also consent to the removal of non-regenerative tissue for transplantation purposes provided that it is removed not less than twenty-four hours after consent was given and provided that various other requirements are satisfied concerning the validity of the consent given.

#### *Living Child Donors*

Under the provisions of the *Human Tissue Act 1982* (Vic), it is unlawful to remove non-regenerative tissue from a child under

the age of 18 years (s. 14(1)). Parents may, however, consent to the removal of regenerative tissue from their children for transplantation into a brother, sister, or parent as long as the child understands the procedure and agrees and various other requirements are complied with. Such consent may be revoked at any time.

#### *Mentally Incapable Donors*

Under the *Human Tissue Act 1982* (Vic) it is unlawful to remove tissue from persons of unsound mind, thus resolving the situation which arose in the American case of *Strunk v Strunk* 445 SW 2d 145 (1969) in which a kidney had been removed from a twenty-seven year-old man with a mental age of six for transplantation into his twin non-disabled brother who was dying of kidney disease. A court had authorised the procedure because the death of the twin could possibly have had a damaging emotional and psychological impact on his intellectually disabled brother. In Victoria, such transplantation would now be illegal regardless of the effects on the disabled donor.

#### *Financial Dealing in Human Tissue*

Australian law currently does not permit financial transactions involving human tissue to occur. In Victoria, for example, the *Human Tissue Act 1982* creates offences of selling (maximum fine of \$5000) or buying (maximum fine of \$10 000 or six months' imprisonment or both) human tissue, and advertising human tissue for sale, purchase or donation (maximum fine of \$5000 or three months' imprisonment or both) unless permission has been obtained from the Minister (ss. 38-40). In addition, proprietary rights cannot be created with respect to human tissue, a principle affirmed in a majority decision of the United States Supreme Court in *Moore v Regents*

*of the University of California* 793 P. 2d 479 (1990). This decision has importance in determining the illegality of removing tissue from persons without their informed consent for subsequent use in biotechnological products.

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#### Instances of Illegality

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The global shortage of organs suitable for transplantation has created intense pressure for individuals to infringe existing legislative controls relating to the sale and purchase of organs. To date, there has been no documented case of illegality relating to tissue transplantation in Australia save for one instance in June 1990 in which a Bangladeshi student sought to sell one of his kidneys at the Royal Melbourne Hospital, the hospital declining the offer on legal and ethical grounds (Scott 1991, p.34). The regulatory controls which exist in Australia are such that improper transplantation would be most unlikely to occur. Other countries, have, however, seen a variety of instances of tissue transplantation crime.

In China, a ready source of organs for transplantation is said to come from executed criminals. In 1996, 4367 executions were reported to have taken place; some, it is claimed, having occurred in order to facilitate the trade in organs. In a "sting" operation recently undertaken in conjunction with the FBI, two Chinese government officials allegedly offered to sell a variety of organs from executed criminals in Southern China. Organs from up to fifty executed criminals were said to be available with prices ranging from the equivalent of A\$29 800 for lungs from non-smokers to A\$37 250 for livers and A\$29 800 for kidneys. Corneas were also available for A\$7450 which had been taken from criminals executed by

shooting in the body rather than the head so as not to damage the eye tissue. It was alleged that some criminals were actually put to death by having essential organs removed, while some were not completely killed in order to preserve live tissue. The brokers were subsequently arrested in New York and face penalties of up to five years' imprisonment and a A\$595 000 fine (Craig 1998; Wallich & Mukerjee 1996).

In Egypt recently, a number of instances of trafficking in human organs have been detected by the authorities. One involved two Sudanese individuals who allegedly purchased organs from poor Egyptians for A\$10 000 and sold them to wealthy residents in the Arab Gulf States for 20 per cent commission (Reuters Australasian Briefing, *Transplant News*, 31 August 1996). Another involved an organisation which maintained a data bank of the names of 1500 people willing to sell their kidneys and various potential foreign recipients. Documents were also found which were used to establish that the recipients of the organs were Egyptian citizens. Trafficking in human organs is now illegal in Egypt and carries a maximum penalty of five years' hard labour (ibid 13 June 1996).

In South America, it has been alleged that children have been kidnapped by North Americans for illegal organ donation purposes. In May 1994, a crowd in Guatemala attacked a United States tourist believing that she had kidnapped a child for illegal organ donation purposes. Similarly mistaken assaults have involved other western tourists visiting South America. Despite various investigations conducted by organisations such as the FBI, the United Network for Organ Sharing, and the United Nations, no conclusive evidence has been

uncovered sufficient to substantiate the allegations (Foster 1997, p.147).

Individuals in western countries have also been involved in the illegal trade in organs, the most prominent example of which occurred in 1989 when a group of brokers in Turkey conspired to have kidneys removed from four Turkish donors without their consent for transplantation into wealthy recipients in London (see Halstead & Wilson 1991). One of the Turkish individuals who arranged for the transplantation was convicted in Istanbul and sentenced to two years' imprisonment and a fine, while one of the donors received an eighteen-month sentence of imprisonment for illegally selling his kidney. The English surgeons who carried out the transplantation operations were all found guilty of serious professional misconduct by the General Medical Council, the principal specialist having his name erased from the Medical Register. The case is instructive in that improper organ transplantation was able to take place in a country which had established and comprehensive ethical and legal controls in place.

More recently, in Italy in 1993, it was alleged by two hospital nurses that the eyes of a deceased patient had been removed and replaced with glass eyes without the consent of the deceased. The hospital's chief eye specialist and medical director both denied any wrongdoing (Reuters Australasian Briefing, News Service, 27 November 1993).

### Potential For Illegality in Australia

Australia, like other western countries, suffers from a severe shortage of organs for transplantation thus creating an incentive for illegal and unethical conduct. There is also an incentive for health care practitioners to be less

than vigilant in checking the background circumstances of donors when a recipient's life is at stake, for whom they are primarily responsible. To date, the regulatory controls which are in place have apparently prevented any impropriety from occurring, and it is likely that were such conduct to take place it would be detected through the various accountability mechanisms which already govern the conduct of Australian health care professionals. The presence of the national tissue typing service also militates against the presence of an illegal market in tissue within Australia.

The risk exists, however, that unscrupulous individuals involved in obtaining donors may be able to manipulate regulatory controls and overcome the safeguards which do exist. What occurred in England and Turkey in 1989, is an example of how such regulations may be compromised, particularly when surgeons and those involved in checking the validity of donors' consent are less than vigilant. By far the greatest area of risk relates to transplantation involving foreign donors and recipients who may enter into financial arrangements prior to entering Australia. Poor command of English may also make the process of explaining Australia's regulatory controls and obtaining informed consent problematic. It may also be difficult for practitioners to guard against the use of covert forms of payment which may occur between family members or those in a close-knit community. One prominent transplant surgeon in the United States has, for example, estimated that "gifts" occur in between 15 to 20 per cent of donations involving living relatives (Bailey 1990, p.368).

Finally, there is the possibility for potential Australian recipients of organs to travel



abroad to undergo surgery using organs obtained from less than reliable sources ("medical tourism"). Some form of extra-territorial criminal law such as the *Crimes (Child Sex Tourism) Amendment Act 1994* (Cth), which prohibits Australians travelling abroad from having sexual activity with minors, may be an appropriate control measure to deal with the exploitation of third-world donors by westerners.

### Commercialising Human Tissue Donation

Instead of relying totally on the deterrent effects of the current ethical and legal controls which are in place, some have suggested that the marketplace could be able to regulate tissue transplantation far more effectively if the purchase and sale of tissue were openly permitted. Advocates of such a market-based, libertarian approach see nothing objectionable in property rights being created with respect to body parts (Joralemon 1995, p.344). It is said that permitting human tissue to be bought and sold may act as an incentive to individuals to provide scarce tissue and organs and that the indigent relatives of those who provide tissue may benefit financially from their deceased relative's decision to permit tissue to be removed on death. Although it has not been suggested that living persons may benefit financially from the sale of either regenerative or non-regenerative tissue, it has been argued that living persons could receive an immediate payment for the right to remove tissue following death, thus possibly creating a futures market in human tissue (Cohen 1991, p.302). Alternatively, the next of kin could benefit once tissue has been removed following death. What would not be permitted,

however, is payment in connection with the allocation of removed tissue — only its removal or agreement for removal, from the deceased.

The notion of changing the law to permit the purchase and sale of human tissue was supported in a survey of attitudes toward the sale of kidneys for use in transplantation procedures by Guttman and Guttman (1993). Over 40 per cent of those surveyed considered that it was ethical to buy a kidney in certain circumstances, although health care professionals had lower rates of approval for commercialisation of kidney removal than other members of the public surveyed.

Others, however, have expressed various concerns about buying and selling human tissue, particularly where the transaction is directly conducted between the giver and receiver of the same tissue, unmediated by a third party such as a public hospital. The primary objection is that if a fee were paid for human tissue, it would be impossible to ensure that consent had been freely obtained from the person providing the tissue, particularly where that person was in straitened circumstances. Although some have suggested that a fee would only be payable for harvesting tissue, it seems unlikely that this additional cost of tissue transplantation would be borne by governments or private health insurers. Instead, the person most likely to be asked to pay any fee would be the recipient. The poor would invariably then be unable to afford the cost of tissue obtained commercially, thus making them ineligible for transplantation, unless governments or private benefactors were able to provide the necessary funds.

It has also been argued that the creation of a commercial system would not guarantee that more tissue and organs would be

made available for transplantation. It has been argued, for example, that commercialisation would reduce the motivation for donors to be altruistic and that most people would find the prospect of selling a part of their body distasteful. This is precisely what occurred where payments were provided for the donation of corpses for anatomical dissection purposes in the seventeenth and eighteenth centuries, and for the donation of blood in the United States more recently (Sehgal, Lebeau & Youngner 1997, p.416).

Finally, it has been argued that human sensitivities, particularly those possessed by certain religious and cultural groups, would be offended were commerce to be introduced into the realm of tissue transplantation.

### Discussion and Conclusions

As in other areas of criminological policy-making, care is needed that the solution proposed does not make matters worse. At present, Australia, with its non-commercial, altruistic system of tissue donation backed by criminal and professional sanctions, has, apparently avoided the same kinds of abuses in relation to improper organ harvesting as have occurred in other countries. This may be because of Australia's physical isolation from the rest of the world, the nature of its health care system, the systems of accountability which govern the conduct of health care providers in Australia (particularly those involved in tissue transplantation procedures), or the fact that tissue transplantation is closely regulated by legislative and administrative controls.

To introduce such a radical proposal as the creation of a commercial market for human tissue seems unwarranted both practically and ethically. It would be contrary to accepted principles

which govern tissue transplantation throughout the western world and may not even achieve the desired objective of increasing the rate at which tissue and organs are made available for transplantation purposes.

Greater benefits, it seems, would accrue through enhancing the existing altruistic system. Improving public knowledge about the need for tissue donation and the operation of the existing system could have substantial benefits in terms of increasing the supply of tissue and organs. It has been found, for example, that whilst 98 per cent of a sample of Australians were aware that organ donation exists, only 67 per cent of those surveyed knew that they might be asked to donate the organs of their next of kin (Dye 1995, p.65).

Health care workers also need better instruction in the process of obtaining consent for organ donation. One study of Australian and New Zealand practitioners involved in intensive care, for example, found that only 70 per cent of those surveyed believed that it was their role to request organ donation. Many were reluctant to raise the matter with relatives despite the fact that they were perfectly entitled to do so (Pearson & Zurynski 1995, p.73). In addition, health care workers are often unclear as to the suitability of potential donors, sometimes rejecting donors unnecessarily on the basis of incorrect views as to acceptable age limits and the effects of pre-existing diseases and general lifestyles on suitability for organ donation (Thompson et al. 1995, p.99).

Arguably, educating both health care workers and members of the public as to the desirability and practice of organ donation would greatly increase the extent to which donation occurs and would reduce the current

shortage of organs for transplantation. Increased funding for such education would, it seems, be a far more effective way of increasing the supply of organs than legalising the purchase and sale of human tissue.

Finally, there is the possibility that bio-technology may provide alternative solutions to the shortage of tissue and organs. Cloning of human tissue, which has already been experimentally achieved, may provide one answer, as may xenotransplantation (the transplantation of tissue and organs from one species to another). The creation of entirely artificial tissues and organs may also become a reality. Even if such procedures were to become technically possible, important ethical, social and legal issues will arise concerning the extent to which they should be used, if at all. In the short-term, it seems that the current procedures governing human tissue transplantation raise less intractable concerns which remain capable of resolution.

**N.B. The views expressed in this paper are the authors' alone.**

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