

The shortage of solid organs for transplantation in Hong Kong: part of a worldwide problem

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Objective. To review the factors involved in determining the availability of solid organs for transplantation in Hong Kong and to identify methods that have been used in other countries to increase organ donation rates.

Data sources. *Medline* and non-*Medline* search of the relevant English literature, local data, and personal experience.

Study selection. Articles describing approaches to solid organ procurement for transplantation.

Data extraction. Data were extracted and analysed by the author.

Data synthesis. There is a severe shortage of solid organ donors in Hong Kong, which is compounded by an ever-increasing pool of potential recipients. Limited local data suggest public support for organ donation. The most common reason for objection to organ donation is a lack of knowledge of the wishes of the deceased. Despite the implementation of numerous legislative models worldwide, none has been shown to be superior as a facilitator of organ donation. Despite the lack of legislation in Hong Kong, the medical profession has adopted the expressed consent model. The use of non-heart-beating donors, elective ventilation of futile cases, and financial incentives pose significant ethical and legal barriers as well as resource implications for intensive care.

Conclusion. Greater effort should be directed through public education at the importance of telling one's family what one's wishes are concerning organ donation. More information is required in Hong Kong as to why families agree to organ donation and how best to approach families to request organ donation.

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Key words: Brain death; Legislation, medical; Organ procurement; Organ transplantation; Public opinion

Introduction

Throughout the history of transplantation, there has been a shortage of organs and tissues, despite the fact that often the only treatment option for many patients with end-stage organ failure is transplantation. Solid organ transplantation is now a life-saving procedure as a consequence of advances in immunosuppression, surgical techniques, and intensive care management. The 1-year transplant organ survival rate is more than 80% in heart transplants, 75% in liver transplants, and 70% to 80% in kidney transplants.^{1,2} In Hong Kong, cadaveric kidney transplantation has been very successful with 1-, 5-, and 10- year graft survival rates standing at 85% to 90%, 78%, and 67%, respectively (Hong Kong Hospital Authority, written communication, 2000). The shortage of organs will probably worsen as transplantation becomes more successful

and is offered to sicker and older patients. The largest source of potential organ donors is persons who have been declared dead according to neurological criteria (ie brain-dead). Estimates of the size of this potential pool of donors have been reduced for a number of reasons: the incidence of confirmed brain death is less than expected; a reduction in donor numbers as a result of reduced deaths from motor vehicle accidents (owing to the increased use of seat belts and motorcycle helmets); improved trauma care; the exclusion of potential donors such as individuals with human immunodeficiency virus; and the fact that only kidneys may be retrieved from potential multiple-organ donors.³⁻⁵ Less than 25% of potential donors become actual donors.⁶⁻⁸ Reasons for non-procurement include failure to institute resuscitative therapy, withdrawal of therapy by medical personnel, inability to resuscitate, refusal by relatives for organ donation, and coronial refusal.^{6,8-10}

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In many countries, including Hong Kong, the organ procurement system is based on voluntary decisions of patients or their families to donate organs. This emphasis on voluntariness is consistent with the

value of respecting individual autonomy and the dignity of the body after death. Supporters of the current system argue that altruism must be the overriding factor in the decision to donate organs. Meanwhile, an ever-increasing pool of patients with end-stage organ failure spend increasing periods on the waiting list. Every day, patients on the list die and others are admitted to intensive care units for treatment of complications from a failing organ. In Australia, up to 20% of patients awaiting a heart, lung, or liver transplant die before a donor organ becomes available, and in the United States, it has been estimated that about one third of patients with heart or liver failure will die before a transplantable organ is found.^{11,12} This review examines the factors involved in determining the availability of solid organs for transplantation worldwide and attempts to identify possible methods for increasing organ donation rates in Hong Kong.

Organ donation rates in Hong Kong and worldwide

In Hong Kong, cadaveric organ donors are principally managed in intensive care units. The identification of potential organ donors is usually performed by intensive care specialists, whereas the management of the request process and the counselling of families are generally carried out by a transplant coordinator. The supply of organs for transplantation in Hong Kong is extremely limited (Fig 1). This trend reflects an inadequate supply of suitable donor organs and an

increasing number of patients who are thought to be suitable for transplantation.

Hong Kong has one of the lowest rates of organ donation in the developed world, as measured by donors per million population (Fig 2). During the past decade in the United States, the number of cadaveric donors has increased by approximately 4.1% per year. Most of this growth has been accomplished by expanding the pool to include donors with advanced age and hypertension.¹³ In contrast, the percentage of donors with a traumatic cause of death has declined. Part of the problem is the lack of identification of the potential organ donor. In New England, 25% of hospitals provide 95% of the organ donors.¹⁴ It has been argued that if all hospitals in New England contributed one donor per year, there would be a resultant doubling of organ donors. In Australia, organ donation rates have not increased significantly over the past decade, and the country has one of the lowest rates of organ donation in the western world.¹⁵

In Hong Kong, the number of patients beginning dialysis treatment for end-stage renal failure in 1997/1998 was approximately 750, which represents an 11% increase on the previous financial year (Hospital Authority, unpublished data, 1998). As a result, the number of patients currently on the waiting list for renal transplantation is approximately 1000, with 2800 being involved in a dialysis programme in 1998. Similar results have been obtained overseas. In Canada, for example, the number of patients receiving renal

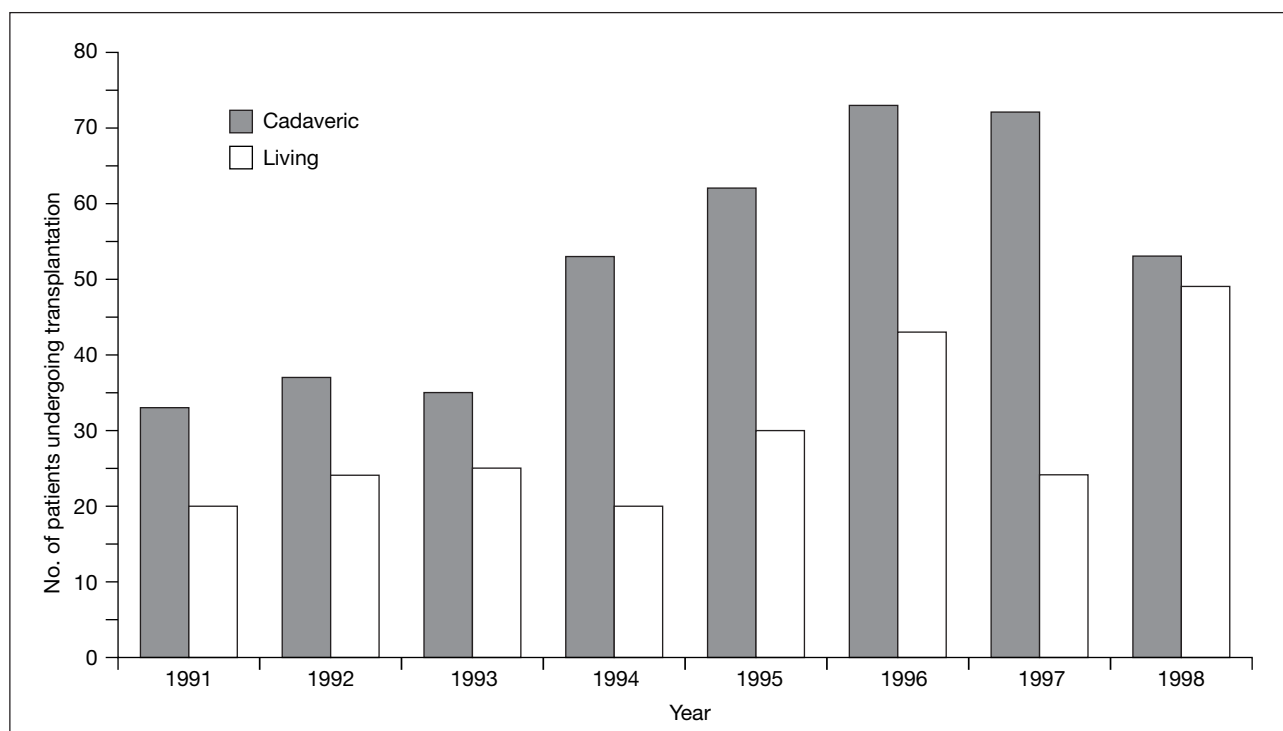


Fig 1. Total number of solid organs available for transplantation in Hong Kong, 1991-1998

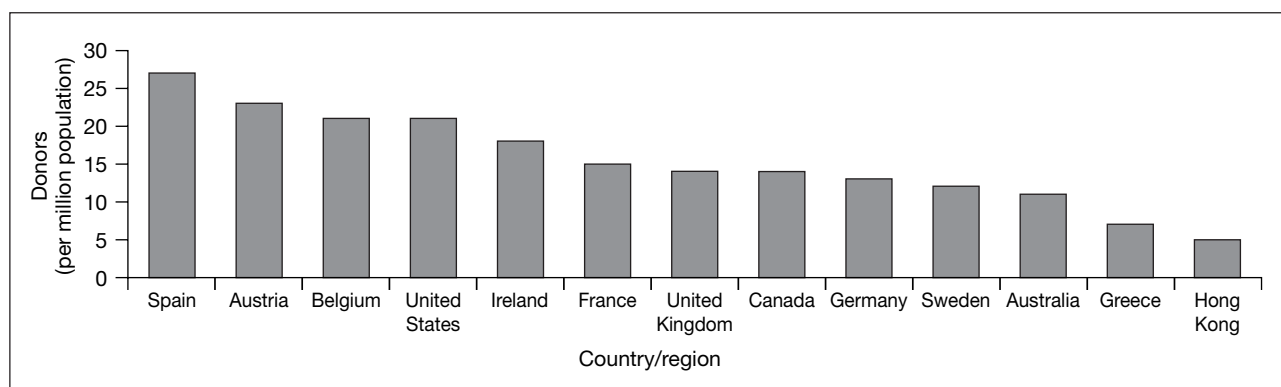


Fig 2. International organ donation rates in 1996

replacement therapy (peritoneal dialysis, haemodialysis, functioning kidney transplant) is projected to grow at an annual rate of 5.8%.¹⁶

Alternatives to cadaveric organ donation, such as live-related kidney, liver, and lung transplantations, have been successfully performed, while xenotransplantation and cloning of organs are still in their infancy.¹⁷ Live-related kidney donation has comprised a substantial proportion of organ transplants in the past, but even that is decreasing internationally, and only limited numbers of transplantations are performed in Hong Kong (Fig 1). With the increasing number of organs required for transplantation and the concomitant shortage of organs from traditional sources, pressure has been mounting to broaden the criteria for medical suitability of potential donors. Attempts have also been made to identify factors that influence the rate of consent to organ donation.

Legislation

Certification of brain death and organ transplantation requires legislation but no specific legislation regarding cadaveric organ donation exists in Hong Kong. Many different legislation models have been introduced throughout the world to try to maximise the rate of organ donation.

Expressed consent and presumed consent

Many countries have adopted an expressed consent (opting-in) system for organ donation following death. An alternative is presumed consent (opting-out) legislation.¹⁸ Expressed consent permits organ removal only if consent is given by the patient before his or her death or by relatives after death. Presumed consent permits organ retrieval, unless the deceased has stated an objection during his or her lifetime.

Expressed consent legislation ensures patient autonomy and promotes donation as an expression of

altruism. Central to this model is the family's awareness of the organ donation process. Considerable time is spent counselling the family and obtaining consent, which may slow the organ donation process. Despite the lack of legislation in Hong Kong, expressed consent from relatives is sought prior to organ donation.

Presumed consent legislation is more common in western European countries.¹⁹⁻²¹ Cadaveric organs and tissues are treated as public assets, but the individual or family may prohibit organ removal, thereby preserving autonomy. Opting-out legislation has resulted in an increased availability of donor organs, and it reduces stress for both relatives and health professionals involved in the organ donation process.^{19,20} Presumed consent legislation, however, may lead to organ retrieval without the knowledge of the family, with a potential for subsequent legal conflict. Such legislation may require an objection to donation to be placed on record. This record needs to be readily accessible to health authorities at the time of death. Failure to object may be construed as consent, so an individual must understand what is involved before presumed consent can be considered valid.

There are variations in how presumed consent legislation is applied in different countries. In Austria, the principle of presumed consent is applied rigidly, and organ procurement is always permitted if no statement expressing an objection is found.²¹ Relatives are not asked for their consent under such circumstances. In Belgium, the relatives can refuse donation if the deceased did not express intent during his or her life. Physicians are generally reluctant to remove organs without the family's consent, especially if the deceased had objected to organ donation.

In many countries, presumed consent legislation has resulted in an increase in organ donation rates. In Belgium, there was an 86% rise in the kidney procurement rate, as well as a rise in the number of multiple

organ donors following the introduction of such legislation in 1986.¹⁸ The number of patients on renal transplant waiting lists in that country has subsequently stabilised.²² In Singapore, the rate of kidney donation has risen six-fold since the adoption of presumed consent in 1988.²³ In France, however, presumed consent legislation has resulted in legal and social complications. In 1992, a teenager who died from injuries that were sustained in a motor vehicle accident had his organs removed.²⁴ His parents were unaware of this until they received a bill listing post-mortem surgery. This resulted in a complaint being lodged, with a major public outcry, which resulted in a dramatic decrease in the rate of organ donation. Presumed consent legislation was subsequently amended to include family consultation prior to organ removal.

Mandated choice

Mandated choice requires that all competent adults decide and record whether or not they want to be organ donors after their death. The perceived advantages include the following: reduction in stress to the staff and family; prevention of delays in organ procurement caused by the need to obtain consent; increased public awareness of organ donation and transplantation; and preservation of individual autonomy. The risk of removing organs from non-consenting patients would not apply.²⁵

The major disadvantage of such a system is that no satisfactory method could be used to ensure that a decision has been made with an appropriate level of knowledge about organ donation and transplantation. The system also artificially forces a person to make a decision about the possibility of an event in the future, rather than allowing them to delegate the decision to a trusted surrogate. In addition, it is impossible to ensure that all adults have recorded their wishes, since a driver's licence and an income tax return are not applicable to all members of the community.

Mandated choice legislation has been introduced in the state of Texas, United States. Initial results were not encouraging, with a refusal rate of 80% in 1994. However, the American Medical Association has endorsed it, urging that the public be "required to state their preferences regarding organ donation when they renew their drivers' licenses, file income tax returns, or perform some other task mandated by the state".²⁶ A survey has suggested that if mandated choice became law, two thirds of the public would sign as donors.²⁷

Required request

The United States Congress passed the Omnibus Budget Reconciliation Act in 1986. This policy obliged

hospitals to discuss the option of organ donation with the next of kin upon a patient's death. Required request legislation has not, however, resulted in the expected increase in the number of organs for transplantation. Studies have shown that although there was an initial increase in the organ procurement rate, the increase was modest and levelled off after the first 2 years.^{28,29} The reasons for this finding are unclear, but some blame the continued failure of health care professionals to approach families about donation,³⁰ while others claim that legal liability impedes health care professionals from approaching families.³¹

Required request legislation as practised in the United States suggests that it may not be very effective in increasing organ donation rates. However, required request gained much more public acceptance than the opt-out method in a Hong Kong study in 1991.³² The study was performed when there were few intensive care specialists in Hong Kong. In Australia, New Zealand, and Hong Kong, required request has little to offer when intensivists feel it is their duty to request organ donation from appropriate patients. The Australian and New Zealand Intensive Care Society (ANZICS) have published specific guidelines on organ donation.³³ These guidelines have been endorsed by the Faculty of Intensive Care of the Australian and New Zealand College of Anaesthetists and the Australian College of Physicians, both of which train the vast majority of specialists in intensive care in Australia and New Zealand. In Hong Kong, similar guidelines have been produced by the Hong Kong Society of Critical Care Medicine and endorsed by the Hospital Authority.³⁴

Excluding an objection

In Australia, legislation is modelled on the recommendations of the 1977 Law Reform Commission.³⁵ For a deceased person's organs to be removed for transplantation, a hospital must establish that during the patient's lifetime, he or she had either expressed consent or not expressed an objection to donation. It is not necessary to establish consent or lack of objection from the next of kin if the deceased person's wishes are known. Relatives of potential organ donors are asked to sign a consent form, although the procedure has no legal purpose. It is necessary to emphasise to relatives that the question is what the wishes of the deceased person were—not what the family want or believe. The Australian legislation emphasises excluding an objection, rather than determining consent to organ donation.

Despite the use of numerous legislative models in varying forms around the world to facilitate organ

donation, it is important not to ascribe the success or otherwise of an organ donation program to the legislation in place in that country. Legislation is a vital element of the organ donation and transplantation process, but there are many other factors that are equally, if not more important. Organ donation is an emotional issue on which there are differing opinions. There are four groups with conflicting interests involved in the process: the potential recipients, the healthy citizens who may become donors, the relatives of the potential donors, and the medical profession.²² No transplantation law could comply precisely with the interests of all concerned. The law must provide a useable framework that provides protection for potential donors, recipients, and the medical profession. If the aim of society is to increase organ donation rates, legislation may be helpful. No legislated attempt to increase organ donation will succeed, however, if it is outside the community's values and wishes. In our enthusiasm to improve donation rates, it is important not to harm the community's faith in the medical and legal systems.

Obtaining consent

In Hong Kong, the most significant obstacle to increasing the number of cadaveric organs for transplantation is obtaining consent. At the Prince of Wales Hospital, consent for solid-organ donation was obtained in just four (19%) of 21 patients declared brain-dead who were referred to the transplant coordinator over an 18-month period. In the subsequent 12 months, the rate of solid organ donation increased to approximately 40%, owing in part to a new transplant coordinator (unpublished data). In Hong Kong, as in most other communities, family consent is a necessity for organ donation, irrespective of an individual's intention as indicated by a donor card. Overseas, the lack of family consent, which may exceed 50%, is also the most common reason why potential transplant organs are lost.^{36,37}

Several misconceptions may arise that can become obstacles to obtaining consent.³⁸ These include confusion about the meaning of brain death; a belief that transplantation is experimental; that there is an underworld market for organs; that donor families may face additional medical bills; that the donor's body may be disfigured; and that the medical profession is not trustworthy.³⁹ While not all of these misunderstandings may be applicable to Hong Kong, a cultural belief that the deceased should be kept intact is probably the most important. Local unpublished data from transplant coordinators suggest that 50% of refusals were for this reason, others being fear that donation would increase the suffering of the patient (14%); a

potential donor having not expressed a wish to donate (13%); a donor having not expressed objection to organ donation when alive (11%); and mistrust of the hospital and medical care (5%). These findings contradict those of a survey of both public and blood donors, in which the most common objection to donating a family member's organs was uncertainty regarding the wishes of the deceased (85% public; 89% blood donors); all other reasons, including keeping the body intact, were insignificant.⁴⁰

Whereas information is readily available on why families say "no" to organ donation, little is known about the request process and what affects families' willingness to donate.⁴¹ There is controversy regarding who should approach the family about donation: should it be the intensive care physician with whom families have the greatest rapport, or the transplant coordinator with the best training? Current recommendations to health care professionals on how to make the request, such as clearly communicating the concept of brain death, are merely the best guess as to what works. The best time to raise these issues is also not known. There are no good empirical data that show which techniques are best at motivating families to donate organs. Two small studies of families who consented to organ donation have shown that provision of information and the need for time to accept the death of the patient are important factors.^{42,43} One factor that does seem to be central to decision making is the families' knowledge of the deceased person's previous wishes.⁴⁴

Non-heart-beating donors

Non-heart-beating donors (NHBDs) are defined as patients with brain injuries that are incompatible with recovery, whose condition does not meet the criteria for brain death and whose cardiopulmonary function ceases before organs have been retrieved. Before the introduction of brain death legislation in 1968, NHBDs provided the major source of kidneys for transplantation. Since then, the number of organs obtained from NHBDs has declined for several reasons. Firstly, the absence of cardiorespiratory function adversely affects the suitability of organs for successful transplantation. Secondly, the ethical issues involving NHBDs are complex. Organ procurement from brain-dead donors (versus NHBDs) produces less ischaemia, because organ function is interrupted under controlled conditions. With the worsening shortage of cadaveric organs for transplantation and the advent of advance directives in the United States, there has been renewed interest in NHBDs, which have the potential to increase the

potential donor pool.^{45,46} Kidneys from NHBDs do have a higher rate of delayed graft function, but long-term graft survival is similar to that of heart-beating donors.⁴⁷

In 1997, the Institute of Medicine of the National Academy of Sciences, United States convened the Committee on Medical and Ethical Issues to examine the ethical aspects of NHBD protocols. The committee subsequently issued a supportive review that affirmed the following points⁴⁸:

- (1) The use of NHBD organs is medically effective and ethically proper;
- (2) Organ donors must be dead before organs are removed; and
- (3) The use of NHBD organs should not be an entrée to euthanasia.

The most significant issue with regard to NHBD is the period of asystole that assures that the patient is dead. Equally important is that the definition and determination of asystole should be consistent. The criteria could vary from an absence of a palpable pulse, to electromechanical dissociation, to a flat-line tracing on an electrocardiographic monitor. The physician who declares the death should not be a member of the transplant team. Suggested periods of asystole vary from 2 to 10 minutes.⁴⁹ The report of the Institute of Medicine of the National Academy of Sciences recommends that an interval of least 5 minutes must elapse after complete cessation of circulatory function, before death is pronounced and organ perfusion or removal begins.⁴⁸

The other ethical issue involves the location of the patient at the time of death. The determination of death in the operating theatre may result in the most expeditious procurement of organs, but it may also result in the hastening of death by the transplant team eager to initiate organ procurement. In addition, after the discontinuation of mechanical ventilation, it is not possible to predict accurately when a patient will stop breathing. If respiratory activity continues for more than 1 hour, the potential for organ donation becomes less likely, because of the prolonged warm ischaemic time. The patient may then have to be moved from the operating theatre and returned to the ward, thus posing additional problems.

Alternatively, the kidneys can be perfused with cold preservative solution *in situ* using a double balloon catheter inserted through the femoral artery. This technique enables the family to be present at the time of death and extends the time for nephrectomy to up to 4 hours. It has been suggested that because such a

Table. The Maastricht categories of non-heart-beating donors⁵¹

Category	Criteria
Class I	Dead on arrival at the hospital
Class II	Unsuccessful resuscitation
Class III	Awaiting cardiac arrest
Class IV	Cardiac arrest while brain-dead

procedure is minimally invasive, it may not require consent in cadavers.⁵⁰ The 1995 Maastricht Symposium defined four different categories of non-heart-beating donors (Table).⁵¹ Each of these groups differ in terms of technical, organisational, ethical, and legal aspects. Successful renal transplantation requires a warm ischaemic time of less than 30 minutes. Hence, consent must be obtained either *ante-mortem* or within minutes of death. Presumed consent legislation is required if a class I or II NHBD organ is to be obtained. With good intensive care management, however, cardiac arrest following brain death is rare. Realistically, in Hong Kong, a NHBD programme would be largely directed at class III donors—namely, those awaiting a cardiac arrest prior to brain death. If death were imminent, patients could be considered for NHBD.

Elective ventilation

Elective ventilation of potential organ donors, commonly known as the 'Exeter protocol', was first advocated in 1990.⁵² Patients who were admitted to general medical wards with rapidly deteriorating neurological function from irremediable intracranial pathology were considered for organ donation. Consent for organ donation was obtained from the family, and the patient was transferred to the intensive care unit and observed until respiratory arrest occurred. At this point, intubation and mechanical ventilation were performed. Brain death was then certified and organs were retrieved. This protocol was successful in increasing the rate of organ donation, and it was postulated that if this regional result was extrapolated nationwide, it would have resulted in a doubling of the national average.⁵²

Although this protocol was endorsed by a number of professional bodies, including the Royal College of Physicians and the British Medical Association, it raised considerable ethical debate. Concerns about its legality were raised, because the clinician was clearly not referring the patient to intensive care for the patient's benefit. This practice was not lawful in the United Kingdom. The family's consent did not permit the practice, since the House of Lords had ruled in 1989 that neither the patient's relatives nor the courts could consent to treatment that was not in the patient's

best interests.⁵³ Ethical and legal concerns were also expressed regarding the possibility of such a patient not being brain-dead and subsequently surviving to discharge from the intensive care unit. As a result, the practice of elective ventilation at Exeter was suspended in 1994.⁵⁴

Practical aspects such as the availability of intensive care beds and adequately skilled medical and nursing staff are also important. The potential distress of nursing and medical staff, who will be required to watch the last breath before brain death and then resuscitate the patient, may be significant. All of these issues need to be considered before instituting a programme of elective ventilation.

Financial incentives

Those in favour of financial incentives argue that altruism has failed to meet the demand for organs. The donor is currently the only individual who does not benefit from organ procurement. Financial incentives would address this imbalance and could take the form of payment of the donor's funeral costs. Opponents, however, argue that financial incentives for organ donation raise profound moral difficulties. Payments to the family for consenting to donation may elevate the family's interests above those of the deceased, and the potential for a black market trade may also increase.

The Council on Ethical and Judicial Affairs of the American Medical Association has addressed this issue.⁵⁵ While rejecting any proposal that could result in an open market for body parts, the Council considered that incentives in the form of a 'future contract' might be ethically acceptable. That is, while still competent, an adult could agree to be an organ donor after death. In return, at the time of actual donation, a government agency would agree to provide financial assistance to the deceased person's estate. Such an approach has not been tried, so the actual effectiveness of financial incentives in increasing the number of organ donors is unknown. Public surveys suggest that financial incentives are unlikely to be of benefit. For example, in a Gallup poll of 6127 adults in the United States in 1992, 81% stated that financial incentives would have no effect on their decision to donate a family member's organs.⁵⁶ Only 12% said they would be more likely to donate, and 5% said that financial incentives would make them less likely. More disturbingly, a survey of families that had previously consented to organ donation found that 85% of the families opposed financial incentives.⁵⁷

Expansion of donor criteria

The continuing shortage of organ donors has forced transplantation physicians to expand the criteria for acceptable organs. Such organs result in lower but acceptable graft survival rates, when compared with ideal donor organs.⁵⁸ Truly validated selection criteria do not exist and every potential donor should be carefully evaluated. Automatic elimination of organs with relative contra-indications should be avoided. Donor age, cold ischaemic time, donor diseases (eg diabetes, hypertension, and some infections) or minor anatomical or functional organ abnormalities should not present absolute barriers to organ donation.

The organisational approach

The Spanish model of organ donation has been very successful in increasing the organ donation rate in that country.⁵⁹ In 1989, 14.3 donors per million of the population of Spain donated organs, and this figure had increased to 25 per million population in 1995.⁶⁰ The increase was brought about by organisational restructuring, without changes in legislation or major alteration in clinical practice. The organ procurement system is based on a network of specifically trained transplant coordinators (most of them doctors) who share the prime objective of organ procurement. A transplant coordinator is employed and is responsible for all aspects of organ donation—from donor detection to organ retrieval—in each hospital with an intensive care unit. The transplant coordinators monitor all admissions to hospital and identify potential organ donors. A significant factor in the Spanish model has been the increased awareness of organ donation in the hospital community.

Community education and awareness

Transplant programmes are reliant on community support for organ donation. The media can create both positive and negative images of organ donation programmes. For example, when the British Broadcasting Corporation's current affairs production *Panorama* questioned the validity of brain death criteria, it took the United Kingdom donor referral rates 15 months to recover.

Public opinion surveys in Australia show that 90% of the population support organ donation.⁶¹ In the United States, more than 95% of Americans are aware of transplantation and up to 75% say that they would be willing to donate an organ after death.⁶² In Hong Kong, 97% of the public are aware of transplantation

but only 53% would be willing to donate an organ after death.⁴⁰ These studies may be flawed, however, in that there may be a high social desirability factor, which would bias survey results. Although the public may not be comfortable with the idea of donation itself, they are enthusiastic about the idea of saving lives through transplantation. Most surveys ask respondents to speculate on behaviour for which they have no experiential basis. Respondents' answers to such questions are less likely to predict future behaviour than, for example, a survey asking the public how they will vote in a forthcoming election.

Organ donation can be promoted by creating positive stories and news articles. A consistent, clear, positive message needs to be transmitted by health care professionals. Adverse publicity in the media needs to be dealt with as a matter of urgency by the responsible authorities, while practices and guidelines must be transparent and of high moral and ethical standards. There are numerous ways in which an individual can indicate a willingness to be an organ donor. The use of donor cards, drivers' licenses, and a donor registry indicate that an individual intends to be an organ donor in some visible format. In Hong Kong, however, only 23% of the public has signed an organ donation card.⁴⁰

Recommendations

The shortage of donor organs for transplantation continues to worsen in Hong Kong, which reflects both an inadequate supply of donor organs and an increasing number of patients being offered transplantation. There is currently no legal requirement in Hong Kong that doctors caring for a patient must confirm brain death or offer the possibility of organ donation to a brain-dead patient's relatives. Laws such as 'required request' and 'presumed consent' dictate clinical practice, and few would wish to have such legislation imposed upon us. The alternative is that the intensive care community should set the standards and be actively involved in policy direction, as suggested in the ANZICS guidelines on brain death and organ donation.³³ In the first instance, 'expressed consent' legislation should be introduced, and this reflects current practice in Hong Kong. The legislation is generally acceptable to the public when confronted with the issue of organ donation, and would provide protection for potential donors, recipients, and the medical profession.

To improve the rate of organ donation in Hong Kong, we must try to maximise the rate of organ

donation from appropriate patients. Intensive care specialists must identify all potential organ donors and certify brain death according to accepted criteria. They must also ensure that families are given the option of cadaveric organ donation. The provision of a high level of donor medical care, so that donated organs achieve the best possible outcome for recipients, is also required.

Consent for organ donation should perhaps become the responsibility of intensive care specialists, rather than the organ transplant coordinator, because they often have had the closest relationship over a longer period with the relatives of a potential organ donor. However, families may become reliant on the intensive care specialist when a patient is dying and the introduction of an unknown person, albeit one with the best intentions, may hinder consent to organ donation. Organ transplant coordinators throughout the Hospital Authority should perhaps coordinate the organisational and administrative approach to organ procurement.

Legislation to increase organ donation will not succeed if it is against the community's values and wishes and may be viewed with suspicion by the community and by doctors so that it could be detrimental to organ donation rates. An NHBD programme would achieve a small but significant number of organ donors, but there are numerous ethical, legal and resource-related hurdles to overcome. Elective ventilation of patients for organ donation also raises a number of ethical, legal, and practical issues that must be addressed before instituting such a programme.

Frequent educational programmes through television documentaries may raise public awareness about organ donation in Hong Kong. The message needs to be clear, consistent, and communicated frequently. Television advertisements and public forums should stress the importance of communication between family members as to their wishes regarding organ donation, because this appears to be the major reason given by the public for declining a request. Further research is required to identify factors that have positive and negative effects on families' decisions to consent to organ donation. Most importantly, the issue of organ donation should be considered carefully and with compassion.

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