



## From American Journal of Kidney Diseases

# Organ Trafficking: Global Solutions for a Global Problem

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### Abstract and Introduction

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#### Abstract

The organ trafficking market is on the rise worldwide. Numerous unfortunate stories of networks of brokers, physicians, and hospitals engaged in illegal trade have been featured in high-profile media. The profitable enterprises facilitating these unregulated services exploit the poor in underresourced countries and offer substandard medical care with unacceptable outcomes to the rich recipients. Despite efforts to boost altruistic organ donation and resolutions to curb transplant tourism, their implementation has been compromised. At the same time, the worldwide escalation in the number of patients with kidney failure coupled with a shortage in the supply of organs continues to fuel this trade. Thus, measures to enhance the donor pool in well-resourced countries to meet their own needs will act as a strong deterrent to the proliferation of transplant tourism in impoverished nations. Regulated schemes that include reimbursement for removing potential disincentives to organ donation and ensure the long-term safety of donors and their families are likely to increase living donations. Such socially responsible programs should be tested in both developed and developing countries for their own populations. It also is vital that developing countries establish a regulated, standardized, and ethical system of organ procurement; create awareness in physicians and the public; upgrade facilities and standardize medical care; and enforce legislation for transplantation. The World Health Organization, National Kidney Foundation, and international transplant and nephrology societies can have an instrumental role in facilitating initiatives in these critical areas. There should be clearly defined codes of conduct for health care facilities and professionals' roles in unregulated paid organ donations and transplants. Ultimately, physicians and transplant surgeons have the responsibility to ensure to the best of their ability that the organs they transplant were obtained upholding the highest standards of ethics.

#### Introduction

The organ trafficking market is on the rise worldwide. Only last year, numerous unfortunate stories of networks of brokers, technicians, physicians, and hospitals that participate in illegal trade by working undercover in various underresourced countries, such as India, Pakistan, and Turkey, were featured in the media, including *The New York Times*.<sup>[1]</sup> These stories highlighted how a commendable act of service to society has been turned into organized rackets of duplicitous offers and tempting financial incentives (US ~\$1,000-\$5,000 per kidney) that exploit the disadvantaged into kidney donation. Such unregulated practices provide no long-term donor follow-up and are a frank violation of human rights of the poorest of the poor. Package deals ranging from US \$35,000-\$150,000 are widely advertised on the internet (eg, [www.liver4you.org](http://www.liver4you.org))<sup>[2]</sup> by brokers and are easily accessible to rich foreign transplant tourists and wealthy natives desperate for a kidney to sustain life.

This year, an article from the *New York Times* reported an investigation of 17 Japanese tourists receiving kidney and liver transplants in China, paying \$87,000 for each organ.<sup>[3]</sup> Reportedly, this price included the cost of travel, accommodations, and 20 days of treatment at a hospital in Guangzhou, China. This is despite a reported ban on foreign tourists receiving kidneys in China.<sup>[4]</sup> Around the same time, a *Newsweek* magazine article uncovered this trade in hospitals in the United States, with a network of brokers, clergymen, and surgeons involved in bringing "voluntary" donors as visitors from Brazil, South Africa, and other developing nations.<sup>[5]</sup> It remains to be investigated whether these facilities and their associated health professionals had information about the unethical arrangements. Similar networks reportedly have been unmasked in Israel and Brazil.<sup>[6]</sup> It is clear that the existing regulations and practices, even in industrialized countries, leave room for such operations to flourish.

Unfortunately, such stories are just the tip of the iceberg. The problem is obviously of tremendous international concern. One cannot help but wonder where the onus of responsibility lies. Does it rest with the government? If so, what steps should governments take? Or is it time for the medical profession to act to regulate its own? There is no question that these stories of health care professionals participating in illegal kidney trade need attention. At the same time, alternate solutions need to be worked out for patients who are terminally ill with end-stage kidney failure (ESKF) and desperately searching for a life-sustaining organ, as well as for donors willing to sell their kidneys.

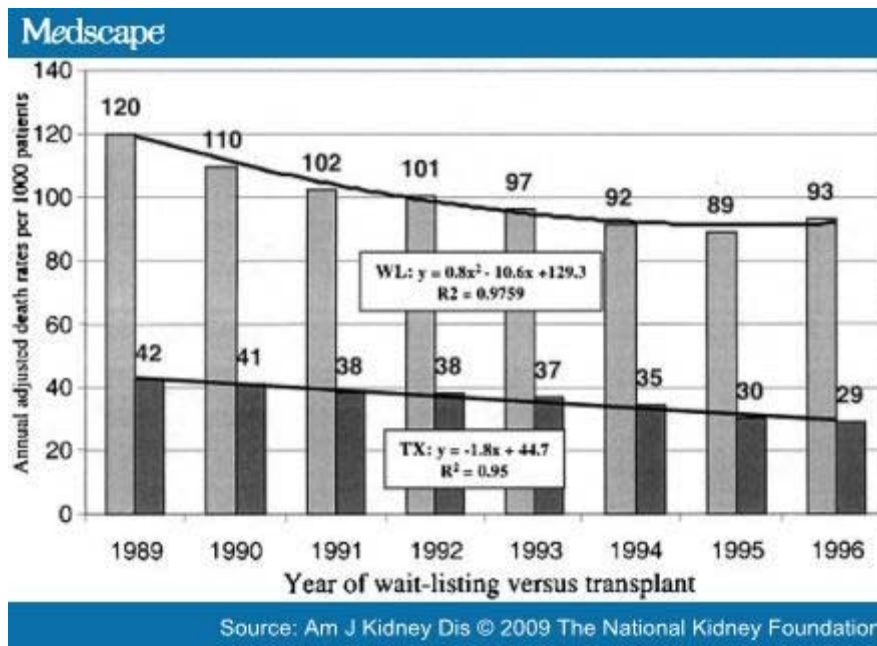
This article reviews the growing need for kidney transplants that is associated with a worldwide escalation in the burden of kidney failure, the legislation and regulations governing transplantation in the United States and other established economies, and the global problem of organ trafficking and transplant tourism, which primarily exploit the poorest of the poor in developing countries. Efforts to boost altruistic organ donation in several countries are highlighted, and existing models of regulated compensated donation are outlined. International resolutions to curb illicit organ commerce and challenges in their implementation are discussed. Solutions are proposed to meet the needs of desperate patients with ESKF with a regulated and safe supply of kidneys by individual countries and to halt the global mushrooming of organ trafficking networks and unregulated transplant practices.

## **Background**

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With an increase in cardio-metabolic diseases and aging populations worldwide, the burden of kidney disease also is increasing, posing unique social and ethical challenges in a rapidly globalizing world.<sup>[7-10]</sup> The number of patients with ESKF, ie, those requiring maintenance dialysis therapy or transplant, in the United States nearly doubled during the 1990s, increasing from 196,000 in 1991 to 382,000 in 2000. A recent US Renal Data System projection of the growth of the ESKF population through 2010 showed a near-doubling of this population to 650,000 individuals, with 520,000 on maintenance dialysis therapy.<sup>[11]</sup> The current annual cost of the ESKF program is estimated at \$32.5 billion, > 6.5% of the total cost of Medicare.<sup>[12,13]</sup> Despite substantial spending, mortality on dialysis therapy is high.

The first human kidney transplant with long-term success, one of the seminal events of medical history, was performed at a hospital in Boston, MA, in 1954, when a kidney from a healthy identical twin was transplanted into his terminally ill brother. Since then, kidney transplantation has progressed and is now the best treatment option to improve patient survival and quality of life (Fig 1).<sup>[14,15]</sup>



**Figure 1.** Adjusted annual death rates in wait-listed (WL) patients and transplant recipients per 1,000 patient-years on the basis of 5 years of actual or projected follow-up. Reproduced from Meier-Kriesche et al<sup>[15]</sup> with permission of the American Society of Nephrology.

During the last few decades, there has been a gradual expansion in social and legal acceptance of what constitutes appropriate organ donors, a definition that now includes brain-dead or non-beating-heart donors, encompassing donations after cardiac death, as well as living donors who would not historically have been considered strong candidates (including the elderly and diabetic individuals) and directed altruistic donors.<sup>[16,17]</sup> However, the number of transplants in the United States, as in other developed nations, has not kept pace with the demand; only 16,905 kidney transplant surgeries were performed in the United States in 2004, whereas 74,000 patients currently are awaiting a kidney.<sup>[12]</sup> The present median waiting time on the transplant list in the United States is > 3 years and is projected to increase substantially during the next few years.<sup>[18]</sup> A longer waiting time on dialysis therapy before transplant has been correlated with a poorer outcome. It therefore is recommended that patients with kidney failure undergo transplant as early as possible.<sup>[19]</sup>

In the United Kingdom, the demand for kidney transplants has consistently and increasingly surpassed the number of available donor organs for the last 2 decades. In 2008, this shortfall had increased to almost 8,000 patients and was increasing at 8% per annum.<sup>[20-22]</sup> The situation is equally frustrating for patients with kidney failure in other countries, leading to the death of thousands of patients on the list awaiting kidney transplant.

As a result, many patients resort to the enticing option of "transplant tourism," thereby unfortunately encouraging organ trafficking in vulnerable developing countries with large numbers of very poor people. Urgent efforts therefore are needed to combat organ trafficking and address the issue of an ethical supply of organs to match the demand.<sup>[23]</sup>

## Legislation and Regulations

Major steps toward establishing a sound and ethical system of availability of organs were initiated by enactment of the Uniform Anatomical Gift Act in 1968 in the United States.<sup>[24]</sup> This law details the rights of

individuals to designate their organs for donation after their death and also the conditions under which living donor transplant is permissible. Further advances were made in 1984 by the National Organ Transplant Act, which established the nationwide computer registry operated by the United Network for Organ Sharing (UNOS; [www.unos.org/](http://www.unos.org/)).<sup>[25]</sup> The same act prohibits buying or selling of organs in the United States.

The Uniform Anatomical Gift Act was revised in 2006 to permit the use of life-support systems at or near death for the purpose of maximizing procurement opportunities of organs medically suitable for transplant.<sup>[26]</sup> Table 1 lists the major legislation enacted in the United States related to organ transplantation. The concept of altruism has been challenged in certain instances in which family ties or contact between donor and recipient are perceived to enhance the susceptibility to various forms of compensation or coercion. However, in the legal sense, unless otherwise specified, the term altruistic donation has come to mean noncommercial donation.<sup>[36]</sup>

**Table 1. Legislative History of Organ Transplant in the United States**

<b>Year</b>	<b>Law</b>	<b>Description</b>
1968	Uniform Anatomical Gift Act <sup>27</sup>	An individual could irrevocably donate upon death his or her organs for medical purposes by signing a simple document before witnesses
1972	Social Security Amendments <sup>28</sup>	Medicare coverage extended to dialysis and kidney transplant to most persons < 65 years of age with chronic kidney disease
1984	National Organ Transplant Act <sup>25</sup>	US Department of Health and Human Services established a regulated system of nonprofit Organ Procurement and Transplantation Network to acquire all usable organs from potential donors and allocate equitably among transplant patients using medical criteria. Organ commerce was prohibited under NOTA
1986	Omnibus Budget Reconciliation Act <sup>29</sup>	Mandated all hospitals participating in Medicare or Medicaid to develop programs to increase donor pools, such as by requiring hospital personnel to request consent of potential candidates or their families for donation, or at least inform people of the option
1991	Patient Self-Determination Act <sup>30</sup>	Seeks to ensure physicians' awareness with patient's instructions and use of advance directives, free living wills, and power of attorney for organ transplant
1999	Organ Donor Leave Act <sup>31</sup>	Entitled 30 days of paid leave to organ donor
2004	Organ Donation & Recovery Improvement Act <sup>32</sup>	Directs Department of Health and Human Services to grant awards to states, transplant centers, qualified organ procurement organizations, other entities for transplant-related travel and subsistence expenses incurred by individuals
2006	Uniform Anatomical Gift Act-revised <sup>33</sup>	Expanded the list of people who could make an anatomical gift on behalf of the deceased in the event that no determination has been made before death The Act also encouraged use of life support systems at or near death for the purpose of maximizing procurement opportunities of organs medically suitable for transplant
2007	Charlie W. Norwood Living Organ Donation Act <sup>34</sup>	Willing related donors who are biologically incompatible with their intended recipients agree to donate organ to an unknown recipient. In exchange, their intended recipient either receives an organ (paired exchange) or a higher position on the transplant waiting list (list donation)
2008	The Stephanie Tubbs-Jones Gift of Life Medal Act <sup>35</sup>	Establishes the Stephanie Tubbs-Jones Gift of Life Medal for organ donors and families of donors

Abbreviation: NOTA, National Organ Transplant Act.

Similar laws have been enacted in other countries, although substantial efforts were required in some to navigate through cultural or religious barriers to this concept.<sup>[37]</sup>

In 1991, the World Health Organization (WHO) set of guiding principles on organ transplantation was approved at the 44th World Health Assembly.<sup>[38,39]</sup> These guidelines emphasized voluntary noncommercial or "altruistic" donation and a preference for cadaver versus living donors and for genetically related over nonrelated donors. The principles prohibited commercial dealing in this field, but did not affect payment of expenditures incurred in organ recovery, preservation, and supply. On May 22, 2004, the 57th World Health Assembly adopted a slightly amended version of the resolution. These principles have served as a useful resource for establishing professional codes and legislation worldwide (Box 1). However, the defined codes have not been forceful in condemning both the use of direct financial incentives to increase the number of organs for transplant and commercialized tissue operations, which continue in a number of countries.

**Box 1. 1991 World Health Organization Guiding Principles for Human Organ Transplant**

<b>Guiding principle 1</b>
Organs may be removed from the bodies of deceased persons for the purpose of transplantation if: <ol style="list-style-type: none"> <li>1. any consents required by law are obtained; and</li> <li>2. there is no reason to believe that the deceased person objected to such removal, in the absence of any formal consent given during the person's lifetime.</li> </ol>
<b>Guiding principle 2</b>
Physicians determining that the death of a potential donor has occurred should not be directly involved in organ removal from the donor and subsequent transplantation procedures or be responsible for the care of potential recipients of such organs.
<b>Guiding principle 3</b>
Organs for transplantation should be removed preferably from the bodies of deceased persons. However, adult living persons may donate organs, but in general, such donors should be genetically related to the recipients. Exceptions may be made in the case of transplantation of bone marrow and other acceptable regenerative tissues.
An organ may be removed from the body of an adult living donor for the purpose of transplantation if the donor gives free consent. The donor should be free of any undue influence and pressure and sufficiently informed to be able to understand and weigh the risks, benefits, and consequences of consent.
<b>Guiding principle 4</b>
No organ should be removed from the body of a living minor for the purpose of transplantation. Exceptions may be made under national law in the case of regenerative tissues.
<b>Guiding principle 5</b>
The human body and its parts cannot be the subject of commercial transactions. Accordingly, giving or receiving payment (including any other compensation or reward) for organs should be prohibited.
<b>Guiding principle 6</b>
Advertising the need for or availability of organs, with a view to offering or seeking payment, should be prohibited.
<b>Guiding principle 7</b>
It should be prohibited for physicians and other health professionals to engage in organ transplantation procedures if they have reason to believe that the organs concerned have been the subject of commercial transactions.
<b>Guiding principle 8</b>
It should be prohibited for any person or facility involved in organ transplantation procedures to receive any

payment that exceeds a justifiable fee for the services rendered.

#### **Guiding principle 9**

In the light of the principles of distributive justice and equity, donated organs should be made available to patients on the basis of medical need and not on the basis of financial or other considerations.

Reprinted with permission from the World Health Organization.<sup>3</sup>

### **Unregulated Kidney Trade and Transplant Tourism**

Based on a survey of 98 countries that represent more than 5.4 billion people (82% of the world's population), the WHO estimated that 10% of all global kidney transplants in 2004 were in patients from developed countries who traveled to economically challenged nations to buy organs (Fig 2).<sup>[40]</sup>



**Figure 2.** Kidney vendor, aged 27 years, in Moldova in 2002. Tricked by a broker in Chisenau into selling a kidney in Istanbul, he believed that he would be working in construction. Reproduced from Scheper-Hughes<sup>[41]</sup> with permission of Elsevier.

The ease of access to such services advertised in package deals of \$15,000-\$150,000 has been particularly attractive, and countries such as Pakistan, India, and Turkey have acquired the unsavory reputation of being the world's most popular "kidney bazaars."<sup>[42-44]</sup> In general, there is a price differential. An African, South Asian, or Filipino kidney is relatively less costly, whereas one of Turkish or Peruvian origin is several times more expensive.<sup>[41]</sup> In some respects, this is proportional to the large segments of populations living in poverty. According to the World Development Report 2009, ~86% of the population in Nigeria, 60% in Pakistan, 76% in India, 45% in the Philippines, 19% in Peru, and 9% in Turkey live on < \$2/d.<sup>[45]</sup> Many of

these poor people are in vulnerable employment without a social safety net or health insurance, and some are indebted over generations. Thus, they are most susceptible to enticing offers by brokers.<sup>[46]</sup> There are entire villages in Pakistan in which it has become normal practice to sell kidneys.<sup>[47]</sup> Information about the characteristics of such donors based on systematic data collection is limited. However, reports indicate that most donors recruited by middlemen are 20-40 years old and either illiterate or with very low educational attainment.

The transplant surgeries are performed at private for-profit hospitals in cities.<sup>[46]</sup> However, most units are not accredited to adhere to practice standards for safety and quality of care.<sup>[48]</sup> Thus, there is marked variation in qualifications and competencies of health professionals. In addition, services are outdated in many of these poorly regulated facilities. Although transplant procedures are available to natives and foreign visitors, the market is largely price driven, and international rates are higher than local bids. For example, about two-thirds of the 2,500 paid kidney transplants in Pakistan in 2007 were reported to have been for recipient visitors from overseas.<sup>[49]</sup>

Outcome data for short- or long-term complications and graft and patient survival for both vendor and recipient are scarce. However, high rates of graft loss; transmission of infections, including human immunodeficiency virus (HIV) and hepatitis; and recipient mortality have been observed after transplant of purchased kidneys from these regions.<sup>[50-53]</sup> This provides a clear indication that the safety standards are seriously compromised.

Moreover, the health status of the vendor has been shown to deteriorate after paid kidney donation. A high prevalence of depression and psychosomatic reactions has been reported. Furthermore, those who developed chronic diseases after vending could not access medical care.<sup>[41,54]</sup> Thus, it is obvious that the donors targeted in an unregulated system are unlikely to safeguard their well-being and thus are highly susceptible to adverse physical and psychosocial consequences of participation in the organ trade. This is in sharp contrast to altruistic kidney donations, which generally lead to no change or an improvement in psychosocial health of the donor and stronger family relationships in cases of living related donations.<sup>[55]</sup>

Unfortunately, evidence also indicates that neediness often is aggravated in donor households participating in the organ trade. Most vendors receive only a fraction of the price paid for the kidney. In a recent political corruption case in the United States, a suspect in Brooklyn allegedly acquired kidneys from vulnerable donors for \$10,000 each, then sold them at the marked-up price of \$160,000.<sup>[56]</sup> The amount that paid donors receive typically is spent on acute needs, such as purchasing food and clothing and paying off debts, and thus most individuals remain in significant debt after organ donation and experience a decrease in median household income. This is not a surprise given that there is no "quick fix" for poverty.

## **Regulated Compensated Kidney Transplantation**

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To address the concern of the short supply of kidneys to meet the national demand of patients with ESKF, a regulated system of living unrelated paid donor kidney transplantation was legally adopted in Iran in 1988.<sup>[57]</sup> In this system, all potential donors are registered by the government and undergo a rigorous process of informed consent and donor evaluation. No brokers are involved in the state-run program, which offers a fixed amount of US \$1,200 to the donor, along with posttransplant care. About 1,500 kidney transplants were performed in Iran in 2007, of which 70% were compensated.<sup>[49]</sup> The success of the Iranian

model is reflected by the transplant waiting lists, which have been eliminated as the availability of kidneys has increased substantially, and access is equitable for those in need. Immunosuppressive agents, including cyclosporine, azathioprine, prednisone, and mycophenolate mofetil, are provided at subsidized cost by the Iranian government or even free to deserving patients. However, of note, this service is not available to foreign nationals; transplant tourism is prohibited in Iran. Graft and patient survival outcomes from Iran are claimed to be similar to reports from the West for noncompensated models of transplantation.<sup>[57]</sup>

However, critics of the Iranian model of direct payment to donors express complex ethical concerns, even in the context of this regulated system, such as exploitation of the poor and the potential for coercion.<sup>[58]</sup> Moreover, the non-negotiable "price tag" placed on the kidney in this model has been questioned as being grossly undervalued compared with the amount potentially fetched in a free unregulated commercial market and therefore is viewed as unjust for the donor by some.

In addition, although longevity is not affected by kidney donation, evidence from a systematic review of 48 studies with more than 5,000 participants suggests that kidney donors have a higher risk of hypertension in the mid to long term after donation than anticipated for normal aging.<sup>[59]</sup> The cardiovascular morbidity and related disability associated with hypertension are well established.<sup>[60]</sup> Although the Iranian system offers health insurance to vendors, there is no provision for disability insurance.

Overall, there is no doubt that there are advantages of a regulated, transparent, compensated donation system over an unregulated one in terms of being relatively less harmful to patients, donors, and families. Clearly, taking the trade out of the black market is likely to offer obvious health benefits to the donor in addition to society.<sup>[61]</sup> Proponents of this model of organ transplantation also argue that payment or reward for kidney donation does not take away the nobility of the act, and the spirit of communitarianism factors in the decision making of most donors. Moreover, the concept that one can never be fully compensated for a priceless act, such as organ donation, has strong merit.<sup>[62]</sup>

Along similar lines, in December 2002, the Munich Congress on the Ethics of Organ Transplantation passed the following resolution: "The well-established position of transplantation societies against commerce in organs has not been effective in stopping the rapid growth of such transplants around the world. Individual countries will need to study alternative, locally relevant models, considered ethical in their societies, which would increase the number of transplants, protect and respect the donor, and reduce the likelihood of rampant, unregulated commerce."<sup>[63]</sup>

Israel recently has adopted a system for compensating donors for income lost because of surgery and recuperation. However, the sale of organs per se is considered unethical and illegal under this law.<sup>[64,65]</sup> A model of regulated compensated kidney donation has been debated in the United States, where cost-effectiveness has been estimated to be -\$94,000 for each living unrelated donor kidney and was associated with 3.5 quality-adjusted life-years gained.<sup>[66]</sup>

Several types of regulated models offering indirect incentives or compensation for organ donations, such as health insurance, life insurance, disability coverage, or social benefits, have been proposed to encourage organ donations in developed countries.<sup>[63,67,68]</sup> It is important to note that the insurance coverage offered varies among countries. Results of opinion surveys of the public and medical community favor



these over direct-payment organ donation.<sup>[68,69]</sup> In some countries, the health plan also tends to provide long-term protection for donors and their families in case of eventuality that may be related to donation and thus can be viewed as removing disincentives potentially experienced by a donor.<sup>[70]</sup> Such models potentially are scalable in developing countries also, with culturally appropriate modifications using local interpretations of individual autonomy, rights, and utilitarianism. It would be important to report mid- to long-term outcomes on donor satisfaction surveys and other health, economic, and social indicators.

## Efforts to Curb Transplant Tourism

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Because of deep concerns with the gross exploitation of the vulnerable associated with profit-driven organ trade, the World Health Assembly issued a resolution in 2004 for all WHO member states to prohibit transplant tourism.<sup>[71]</sup> It also called for international cooperation in the formulation of organ procurement guidelines on suitability, safety, and ethics and the establishment of national oversight committees to ensure implementation.

Although countries have attempted to adhere to the resolution, efforts have met with substantial resistance. For example, the government of Pakistan recently instituted legislation banning organ trade and entailing rigorous monitoring of all organ donations by transplant evaluation committees at hospitals to satisfy the voluntary nature of each donation. Passage of this legislation was not straightforward, as listed in Box 2, in which Mr Iqbal Haider, a prominent figure in Pakistani government and legal circles, describes his efforts to introduce and pass this measure. Thus, it is unfortunate that despite promulgation of the bill, implementation remains weak because kidney trade continues unabated.<sup>[72]</sup>

### Box 2. A Personal Perspective on Regulating Human Organ Transplantation in Pakistan

In 1992, as an elected Senator, I drafted and introduced a bill to regulate and control human organ transplantation. Much to my disappointment, despite my best endeavor initially as Senator and later even as Federal Minister for Law and Parliamentary Affairs, I could not succeed in the passage of this bill, in part due to objections raised by bureaucrats who were perhaps under the influence of the strong lobby supporting the illegal and immoral organ trade and transplant tourism in Pakistan. Finally due to the consistent and concerted efforts of the Transplantation Society of Pakistan, with the assistance of distinguished transplant surgeon, Dr Adibul Hassan Rizvi, and also due to the pressure of the UN, the Government of Pakistan had to promulgate "The Transplantation of Human Tissues and Organ Ordinance" in November 2007.

It is unfortunate that some persons and organizations with vested interests started opposing this Ordinance and created many hurdles in its implementation. One organization even resorted to challenging this legislation by filing a petition in the Federal Shariat (Islamic) Court of Pakistan. The objections raised, such as those against the establishment of transplant evaluation committees to ensure voluntary donation, simply have no grounds, as these are meant to protect the welfare of the poor according to the teachings of Islam. I am pleased that the Federal Shariat Court has defeated the attempts to seek repeal of the main substantive provisions of the Ordinance.

The world has to be united in efforts to enforce transplant legislation; international attention and cooperation from all sectors of society will lead to a global solution to the menace of organ trafficking and transplant tourism.

*Iqbal Haider*

*Note:* Mr Haider is a former Senator; Federal Minister for Law, Justice, and Parliamentary Affairs; and Attorney General of Pakistan; he currently serves as a Senior Advocate of the Pakistan Supreme Court and co-chairperson of the Human Rights Commission of Pakistan.

The situation is equally complex and challenging in China, where a number of enterprises have been set up to facilitate transplant tourism. According to a report by Amnesty International, 99% of organs in China come from executed prisoners.<sup>[73]</sup> In 2007, in response to negative publicity and persistent pressure from international media, the Chinese government introduced regulations to deter doctors and hospitals from participating in organ trade and mandated a signed agreement from prisoners before execution and organ harvesting. Although an improvement from the previous practice, concerns regarding inappropriate use of the death penalty for organ sale have been expressed.<sup>[73]</sup> Similarly, kidney commerce is not legal in India, the Philippines, or Eastern European countries, yet the law enforcement agencies turn a blind eye to the flourishing underground organ trade.<sup>[2,74-78]</sup>

It is disturbing to note that even the insurance industry has started paying for transplant tourism disguised as "medical value travel," thereby indirectly endorsing illegal trade of organs.<sup>[79]</sup> The decrease in rates of living and deceased donations in Israel is attributed to transplant tourism, which has been promoted by physicians who actively provide the referrals to transplant centers in other countries (such as Moldova, South Africa, Turkey, Ukraine, Bulgaria, the Philippines, China, and India).<sup>[80]</sup>

## **Declaration of Istanbul on Organ Trafficking and Transplant Tourism**

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The most recent Declaration of Istanbul on Organ Trafficking and Transplant Tourism strictly condemns all forms of organ trade that exploit the poor, regardless of whether from within their own countries or abroad.<sup>[81]</sup> This declaration, which builds on the principles of the Universal Declaration of Human Rights, was passed in April 2008 at the Summit in Istanbul, Turkey, convened by the Transplantation Society and International Society of Nephrology. The declaration states that all forms of transplant commercialism, which target the vulnerable, should be prohibited, including transplant tourism and organ trafficking.

The declaration emphasizes the need to address the safety and health care needs of the donor before, during, and after donation. It also calls upon countries to increase programs for the prevention of kidney disease and enhance regional programs for availability of organs to meet the transplant needs of its residents from donors within their own populations.

The declaration also emphasizes the distinction between travel for transplant and transplant tourism, the former being restricted to specific instances in which such travel may be ethical, as in the case of a genetically related donor and recipient and recipients with dual citizenships for organs from live family members.<sup>[82]</sup> Compared with the previous international guidelines, the Declaration of Istanbul can be viewed as an important way forward toward a clear stand by the international physician community against transplant tourism. It also is important to note that the declaration clearly allows reimbursement of legitimate expenses incurred during transplant. Moreover, it does not specifically prohibit regulated incentives or rewards for donation.

## **Other Successful Efforts to Enhance the Kidney Donor Pool**

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The nexus that supports kidney trade is powerful, fueled by the lure created by the limited supply of kidneys in the face of increasing demands in rich countries. Therefore, measures to enhance the donor pool in well-resourced countries to meet their own needs will act as a strong deterrent to the proliferation of unregulated transplant enterprise in impoverished nations. Results of initiatives to increase the legal donor pool, such

as the Organ Donation Breakthrough Collaborative, which started in the United States and has since moved to Australia and Canada, have been encouraging.<sup>[83]</sup> Likewise, changes in the approach to deceased organ donation to that of "presumed consent," which have been implemented in some European Union states and Singapore and also proposed in the United Kingdom, are steps in the right direction.<sup>[40,84]</sup> This law mandates that every adult who dies is a potential donor unless during his or her life, he or she specifically declines to participate. Many countries still consider that this law conflicts with the rights of families to the deceased, and it is interpreted as not permissible on religious grounds by some.<sup>[85]</sup> However, presumed-consent countries have larger donor pools than explicit-consent countries. The success of this strategy is supported by the 25%-30% increase in organ donation rates in countries in which the law is in effect.<sup>[86]</sup>

Scaling up of other regional efforts, such as the donor exchange kidney transplant program for swapping kidney donor-pairs for compatible kidneys, also will add value.<sup>[87]</sup> Finally, altruistic living kidney donation has much room for promotion. Currently, > 50% of all transplanted kidneys in the United States come from unpaid altruistic donors, and efforts are being made to make it easier for altruistic donors to come forward, eg, through the availability of laparoscopic donor nephrectomy, the development of paired exchange programs, and measures to compensate donors for legitimate expenses related to donation.<sup>[83]</sup>

## **The Way Forward**

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It is obvious that in addition to guidelines and declarations, multipronged concerted efforts are needed at the national, regional, and global levels to address illegal kidney trade and transplant tourism within and across borders. For a global approach, there are lessons to be learned from countries that have shown success with innovative models and initiatives of regulated cadaveric and living donations. The following efforts are likely to yield fruitful results.

### **Enforce Legislation for Organ Transplantation**

Strict actions against citizens and groups in developed countries who facilitate exploitation of the poor in developing countries may be needed as a strong deterrent. Although more complex, developed countries also must debate, perhaps at a societal level, whether individuals facilitating the procurement of organs for money in underprivileged nations are committing a prosecutable offense. Governments of developing countries also need to follow suit to implement laws aggressively to protect their vulnerable citizens from being exploited by unsafe and substandard commercial organ-trade practices and organized crime organizations promoting this enterprise.

### **Define the Physician Code of Conduct and Accountability**

Perhaps it is time for various international and national medical organizations to also issue clearly defined codes of conduct for health care facilities and professionals' roles in unregulated paid-organ donations and transplants. The safety of the donor and recipient are the prime responsibilities of the physician. The state and professional societies should hold them accountable.<sup>[88]</sup> It should be expected that every health care provider refuse to cooperate in assisting or facilitating organ donations unless they are clearly and independently verified and certified as "voluntary" and "noncoercive," after proper informed consent processes. Ultimately, physicians and transplant surgeons have the responsibility to ensure to the best of

their ability that the organs they transplant were obtained upholding the highest standards of medical ethics.

### **Enhance the Donor Pool and Regulate Transplant Services**

It is clear that any efforts to increase the national donor pool in countries will reduce or even eliminate the demand for kidneys from abroad. Regional cooperation should be established to promote initiatives for increasing the legal donor pool, including changes in the approach to deceased organ donation to that of "presumed consent" and donor-exchange kidney transplant programs in developed and developing countries.

It is vital that developing countries establish and implement a regulated and ethical system of organ procurement and create awareness in physicians and the public.<sup>[89]</sup> International assistance in establishing such registries and programs would serve as a good example of collective action and cooperation.

In addition, efforts need to be directed toward providing training in advanced skills for kidney transplant surgeries, upgrading facilities for nephrectomies, and establishing regulatory guidelines for certification of providers and quality assurance of services in developing countries.

Well-piloted models of regulatory framework will provide guidance to policymakers. Regional cooperation is likely to assist with tackling common and complex cultural, traditional, and religious concerns. The WHO, along with the National Kidney Foundation and national and international transplant and nephrology societies, can have an instrumental role in facilitating initiatives in these critical areas.

A system of regulated paid-organ donation, such as that in Iran, has shown tremendous success in addressing the national shortage of organs and offers a better level of care than an unregulated system. However, it also is evident that the existing Iranian model may not be in the best long-term health, social, or economic interest of the donor. Thus, other creative mechanisms of rewards, such as vocational training of the donor or social benefits, could be considered because these are likely to have a sustained positive impact on donors and their families. Such programs must include sound criteria for screening potential donors carefully and provision of counseling before and after transplant, combined with follow-up medical care. A combination of such initiatives, perhaps offering choices to donors, will benefit patients in their home countries and prevent outsourcing and promotion of medical malpractice elsewhere.

### **Implement Programs for the Prevention, Screening, and Treatment of Kidney Disease**

Evidence suggests that the number of patients with ESKF will continue to increase unless the delivery of optimal preventive medical care to prevent the progression of chronic kidney disease is addressed.<sup>[90]</sup> The leading contributors to this burden are diabetes and hypertension. Fortunately, kidney disease can be prevented and progression can be slowed with early identification and treatment of patients with chronic kidney disease.<sup>[91]</sup> There are sound and cost-effective models of screening and treatment of kidney diseases that could be integrated within the health care systems for effective outreach and improved patient outcomes.<sup>[92]</sup>

In conclusion, organ trafficking and transplant tourism are global problems threatening patients with kidney disease and healthy citizens worldwide. Developing countries must regulate and standardize organ

procurement and transplant procedures. The worldwide escalation in the number of patients with kidney failure requires out-of-the-box solutions for shortening transplant waiting lists while ensuring an ethical and safe supply of kidneys. These will require dedicated efforts to enhance awareness for societal benefit. It is clear that regulated models of reimbursement schemes that remove potential disincentives by ensuring the long-term safety of donor and their families are likely to increase living donations. Such programs should be tested in both developed and developing countries for their own populations. Prevention and treatment of early stages of kidney disease are essential components of such efforts. Finally, combating organ trafficking is the shared responsibility of governments, health providers, and leaders in civil society to protect vulnerable people. It is vital that all key players fulfill their commitment with a view to achieve the best outcome with desirable goals for both donors and recipients in their respective countries and their counterparts globally.

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