

# Policy Analysis

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Routing

## *Organ Sales and Moral Travails Lessons from the Living Kidney Vendor Program in Iran*

by Benjamin E. Hippen

### Executive Summary

Kidney transplantation in the United States is burdened by a terrible policy failure. The cost of this failure will be paid in the currency of years of human lives unnecessarily lost, as well as a massive increase in federal expenditures over the next decade and beyond. The number of patients with end-stage renal disease (ESRD) in the United States has grown, but the supply of kidneys—for the preferred treatment for ESRD, kidney transplantation—has not kept pace with the demand. Unfortunately, the issue is not simply one of supply and demand: in the United States the supply of kidneys for transplantation is kept artificially low by a prohibition on the sale of human organs.

If a decade's worth of reports in the transplant literature are to be believed, only one country in the world does not suffer from an organ shortage: Iran. Although Iran clearly does not serve as a model for solving most of the world's problems, its method for solving its organ short-

age is well worth examining. Organ donation is ubiquitous throughout the world, but Iran is the only country that legally permits kidney vending, the sale of one individual's kidney to another suffering from kidney failure.

After a critical examination of what can be learned from the Iranian experience that will help the United States solve its organ shortage, certain conclusions seem inevitable: The portion of the National Organ Transplant Act of 1984 which prohibits the sale of organs should be repealed. The savings that will likely accrue should be spent on long-term study and maintenance of the vendor system and on the creation of mechanisms to ensure fair trading. Finally, because so much is still unknown regarding how organ sales would work in the United States, individual transplant centers and organ procurement organizations should be permitted to experiment with how to implement a system of organ vending.

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## Introduction

Entrenched health care policies can cost lives. Nowhere is that more evident than in a comparison of the government policies on renal replacement therapies for end-stage renal disease (ESRD) in the United States and Iran. While many Iranians in the past suffered greatly for their country's lack of ESRD policies, thousands of patients in the United States continue to suffer today.

Political and financial realities in the United States and Iran directly influenced the availability of scientific developments which changed ESRD from a fatal diagnosis to a chronic disease. Dialysis was developed in the United States in the 1960s, but this life-saving therapy was expensive and scarce.<sup>1</sup> The first successful kidney transplant in the United States was performed in 1951.<sup>2</sup> In Iran, the first successful renal transplant took place in 1967.<sup>3</sup> Still, without reliable, effective immunosuppressant drugs, dialysis remained the only reasonable alternative for many patients with ESRD until the early 1980s.<sup>4</sup> Both the U.S. and Iranian governments paid for dialysis while continuing to develop transplant options. In the United States, dialysis became the first fully funded Medicare health benefit; a diagnosis of ESRD and a modest contribution to social security tax revenues is all that is required to qualify for the entitlement, regardless of age or financial status.<sup>5</sup> But the expense of dialysis, the economic collapse in Iran following the 1979 revolution, and the expense of the subsequent protracted conflict with Iraq encouraged the Iranian government to pay for transplantation as soon as immunosuppressant drugs made it a viable alternative to dialysis.<sup>6</sup>

The Iranian government paid for its citizens to have transplants abroad,<sup>7</sup> while the United States entrenched itself in its existing dialysis reimbursement policies. In 1972 a hearing before the House Ways and Means Committee was enlivened by the performance of a dialysis treatment before an audience of duly impressed legislators.<sup>8</sup> This event was compelling enough

that within weeks the Social Security Act was amended to provide a full Medicare-funded entitlement for dialysis therapy.<sup>9</sup> Then, in 1984, an overzealous entrepreneur testified before Congress that he was planning to import impoverished denizens from developing nations, remove their organs, transplant them into American patients, and then return the "donors" to their homelands with a pittance to show for their efforts. A horrified Congress passed the National Organ Transplant Act, including a prohibition against "knowingly acquir[ing], receiv[ing], or otherwise transfer[ring] any human organ for valuable consideration for use in human transplantation if the transfer affects interstate commerce."<sup>10</sup> Two decades later the United States and most of the world is still laboring under the ill-conceived notion that the sale of organs should be prohibited under all circumstances, and the number of people dying on dialysis while waiting for an organ that never comes continues to steadily increase. Meanwhile, in 1988 Iran began providing remuneration for unrelated donors, and its list of patients awaiting transplants steadily decreased.<sup>11</sup>

The contrast in the policies of the two countries is reflected in the stark differences in the number of patients on dialysis, waiting for a kidney, and subsequently dying. In the United States alone, 341,000 patients suffering from ESRD were dialysis-dependent in 2005—triple the number in 1988.<sup>12</sup> Current estimates vary, but that number is expected to grow to between 400,000<sup>13</sup> and 520,000<sup>14</sup> by 2010 and to approach 525,000<sup>15</sup> to 700,000<sup>16</sup> by 2020. Today, in the United States, more than 73,000 people are waiting for a kidney transplant from a deceased donor, and by 2010, the waiting list is expected to grow to nearly 100,000.<sup>17</sup> In Iran, the waiting list for kidneys was eliminated in 1999, 11 years after the legalization of organ vending, and for the past 8 years, Iran has had no waiting list for kidneys.<sup>18</sup> By contrast, since 1999 more than 30,000 U.S. patients with kidney failure have died waiting for an organ that never arrived.<sup>19</sup>

In addition to thousands of lives unnecessarily lost, another dimension of the U.S. ESRD policy is the staggering cost to taxpay-

ers. The cost of the ESRD entitlement grew to more than \$21 billion in 2005, nearly 6.5 percent of the Medicare budget, and was spent on behalf of 0.6 percent of eligible Medicare beneficiaries in 2005.<sup>20</sup> Of that \$21 billion, only \$586 million was spent on kidney acquisition and transplantation.<sup>21</sup> The perversity of this vast disparity in relative funding for dialysis and transplantation is compounded by the fact that kidney transplantation confers a significantly improved quality and quantity of life for nearly every category of patient with ESRD: The median survival rate for a new dialysis-dependent patient is 35 percent after five years, compared to a 75 percent survival rate after kidney transplantation.<sup>22</sup> In short, kidney transplantation represents the best form of renal replacement therapy for the vast majority of patients with ESRD and at a fraction of the cost of dialysis. The extent of the U.S. policy failure with respect to ESRD is only beginning to be fully realized, but some adverse consequences are already apparent:<sup>23</sup> Demand for renal replacement therapy escalated following the passage of an open-ended and ballooning federal entitlement. A perverse financial incentive favors dialysis over transplantation despite the manifest medical superiority and relative cost-savings of the latter. The disparity between the demand for and supply of kidneys continues to grow.<sup>24</sup> And the death rate for individuals waiting for deceased-donor kidneys is increasing.<sup>25</sup>

This Policy Analysis provides a critical overview of the 20-year-old Iranian system that has legalized the purchase of kidneys from living vendors. Common criticisms of the Iranian system are scrutinized with an eye toward understanding what the United States can learn from the Iranian experience, incorporating what works, and improving what either does not work or might not work, with special attention paid to the problems that Iranian transplant professionals have identified as avenues for improvement.<sup>26</sup> The Iranian system is far from perfect, as Iranian transplant professionals are the first to admit. But a comprehensive examination of the Iranian system suggests

the United States can learn a great deal from the Iranian experience. Many common objections to a market for organs in the United States are not sustainable, and existing problems with the Iranian system can suggest alternative solutions to the current deceased-donor and dialysis system in this country.

## How the Iranian System Works

Insofar as the kidney procurement system in Iran can be characterized as a “market,” it is a highly standardized and regulated market with only modest room for negotiation. Once potential kidney recipients are identified, they are evaluated by kidney transplant teams, including transplant nephrologists and transplant surgeons. Recipients are counseled that it is in their best interest to identify a biologically related living donor. If no biologically related living donor is available or willing to donate, the recipient is referred to the Dialysis and Transplant Patients Association. From there, disposition of the recipient depends on whether the transplant center has an active deceased-donor program. For example, at a major university hospital in Zhiraz, which has an active deceased-donor program, recipients referred to DATPA must generally wait six months for a deceased-donor kidney (though some recipients elect to circumvent this requirement by traveling to Tehran for transplantation).<sup>27</sup> If the recipient does not receive a transplant from a deceased donor after six months, DATPA identifies an immunologically compatible kidney vendor for the recipient.<sup>28</sup>

DATPA is staffed by volunteers with ESRD and receives no remuneration for matching kidney vendors with recipients. Neither the transplant center nor transplant physicians are involved in identifying potential vendors. Instead, vendors express their own interest in participating by contacting DATPA. Once identified, vendors are referred to the transplant center and evaluated according to the same medical standards applied to living donors who are *not* financially compensated,

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including the evaluating physician's right to use his medical discretion to veto a vendor's candidacy.

Vendors are paid in two ways. First, the Iranian government provides a fixed compensation to the vendor of approximately \$1,200 plus limited health insurance coverage, which currently extends to one year after the exchange and covers only conditions deemed related to the surgery.<sup>29</sup> Second, the vendor receives separate remuneration either from the recipient or, if the recipient is impoverished, from one of a series of designated charitable organizations; this amount is usually between \$2,300 and \$4,500.<sup>30</sup> The amount and source of the second remuneration is arranged beforehand by DATPA.<sup>31</sup> It is important to note that noncitizens are not eligible to participate in the Iranian organ procurement system as either vendors or recipients. As with dialysis, the Iranian government assumes the cost of treatment, including the kidney procurement, transplant surgery, immunosuppression medications, and postoperative care of the vendor and recipient. Thus, while the Iranian market in organs is heavily regulated, it does allow people to receive several forms of compensation for their organs, including financial compensation.

Unlike the rest of the world, and the United States in particular, the Iranians have found a way to solve their organ shortage; and although their market system is not without problems, it clearly has advantages over other organ procurement systems, primarily that thousands in need do not die while waiting for a compatible donor.

### **Merits of the Iranian System**

Permitting legal organ vending has brought the greatest benefit: By 1999 the waiting list for kidney transplants in Iran had been eliminated, a success no other country can claim.<sup>32</sup> In addition, the Iranians have found a way to minimize the potential negative impact of financial incentives. DATPA serves as an alternative to the for-

profit organ brokers who are such a pernicious feature of illegal organ trafficking in other countries. Exchanges by freelance brokers (particularly where legal protections against coercion or fraud are inconsistently enforced) can create incentives for both the broker and the vendor to be untruthful if disclosures might thwart the exchange. For example, if a vendor has a communicable infectious disease, or has kidney disease, there are clear disincentives to identify, discover, or disclose such facts in a system that does not enforce organ brokerage contracts. The Iranian system addresses this problem by making the intermediary a nonprofit, patient-run service organization that trades on the moral commitment of patients to help others in a position similar to their own. That, in turn, provides as powerful a motivation to avoid harmful practices as a system that consistently and strictly enforces laws against coercion and fraud, which redounds to the benefit of vendors.

The Iranian not-for-profit, charity-based system also provides a convenient intermediary between the organ vendor and the patient or transplant center, thus mitigating a host of potentially difficult, moral conflicts of interest. Separating the role of identifying vendors from the role of evaluating their medical, surgical, and psychological suitability permits transplant professionals to avoid confusing judgment on a vendor's candidacy with various financial and professional incentives to perform more transplants. Without dwelling on which potential conflicts of interest might evolve into actual conflicts of interest, it is clear that systemwide separation between identifying and screening potential vendors has the advantage of reducing potential concerns.

The Iranians have eliminated their waiting list for kidneys by allowing a limited market in live-donor kidney vending, and in so doing they have discovered a way to minimize some of the perceived dangers of such a system. With DATPA acting as intermediary, the Iranians have reduced the possibility that organ vendors will be taken advantage of by either overzealous middlemen, procurement institu-



tions, or physicians desperate to help their patients. Despite those successes, however, the Iranian system is not without problems.

## Concerns with the Iranian System

Both proponents and opponents of kidney vending from the living have reason to be skeptical about the veracity of outcomes reported by Iranian transplant professionals. Precautions must be taken to carefully parse out sound conclusions from those that lack sufficient evidence. Both proponents and opponents share valid concerns regarding safety and the lack of information on long-term outcomes for vendors. Furthermore, the vast political, cultural, and religious differences between Iran and the United States might make in-depth comparative analyses of little value.<sup>33</sup> But, given that thousands of Americans die each year waiting for a kidney, rejecting the Iranian system out of hand, and without careful analysis, is ill-advised. While the Iranian system may not be as successful as that country's transplant professionals claim, concerns voiced by opponents of kidney vending are typically predicated on opposition to organ vending in general rather than any specific concerns about the Iranian system in particular.

### Vendor Organs, Donor Organs: A Closer Look at Recipient Outcomes

The outcomes for recipients of organs from vendors do not appear to be as good as outcomes for recipients of living donor organs, with at least one report of a 10-year organ survival of 44 percent for recipients of organs from living vendors, compared to a 10-year organ survival of 53 percent for recipients of organs from living donors.<sup>34</sup> When compared with outcomes from living related donors in Iran, however, this difference did not reach statistical significance. Why might outcomes not be as good for recipients of organs from vendors? One explanation can be found by examining the socioeconomic demographics of kidney

vendors in Iran. In the available literature on the subject, there is widespread agreement that the majority of vendors are "poor." Although this term is often used imprecisely (sometimes it is undefined, but sometimes it denotes living at or below the poverty level in Iran, which means an income of less than \$5 per month<sup>35</sup>), there is little reason to doubt the general truth of the assessment.<sup>36</sup> In the United States, some evidence suggests that low socioeconomic status alone is a predictor for the development of kidney disease.<sup>37</sup> That is not to say that *being poor* somehow *causes* kidney disease, but low socioeconomic status may predict exposure to a host of environmental factors (particularly infections) which can increase the risk of developing kidney disease. If kidney vendors in Iran are disproportionately poor, then as a group they are quite possibly more likely to have sub-clinical kidney disease at the time of their kidney vending. In addition, they may be malnourished or suffer from other conditions which make them a less than ideal source of kidneys. That might also account for the slightly lower organ survival rate in recipients from impoverished donors.

### What Happens to Organ Vendors?

The most contentious disagreements in the literature regarding kidney vending in Iran have to do with the personal, physical, and financial consequences for vendors themselves. This issue is complicated by an absence of routine follow-up.<sup>38</sup> Still, the *hypothesis* that the long-term health of vendors is adversely impacted is plausible, since such a conclusion would logically coincide with the slight trend toward worse long-term outcomes for recipients of transplants from kidney vendors.

Since there is no central repository of outcome data for recipients, donors, or vendors in Iran, the information available to outsiders consists of what is published in the medical literature and anecdotal evidence provided by those who live in or visit Iran. Conceivably, both the reassuring and the worrisome reports on vendor outcomes are true, with each report accurately reporting facts in different geo-

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graphic areas. Absent a system of routine vendor follow-up, just how to integrate reports and popular accounts remains an open question.<sup>39</sup> While the lack of accurate data justifies concern, it does not justify abandoning the idea of organ vending. The solution is to carefully monitor outcomes and adjust the vending system or, if need be, abandon it should results prove unacceptable.

**Does a System of Organ Vending Undermine Deceased Donation? Not in Iran**

William Harmon and Francis Delmonico have charged that the number of kidneys procured “per million population” in Iran is lower than in countries without remuneration policies.<sup>40</sup> Since deceased donation was not really feasible in Iran until 2000, such claims are misleading. In 2000, the Iranian parliament made organ retrieval from deceased donors possible by legislating the acceptance of a cessation of brain function as death instead of accepting only heart-lung criteria.<sup>41</sup> Once this legislative commitment was made to respond to cultural and religious concerns regarding donation after death,<sup>42</sup> the number of kidneys from deceased donors increased significantly.<sup>43</sup> Neither the donor’s estate nor the families of deceased donors receive payment for these kidneys. At least in Iran, the concern that a system of compensating living vendors inevitably renders a system of unpaid deceased donation moribund is unsupported by the evidence.<sup>44</sup> Lastly, whether Iran obtains as many kidneys per million population as other countries is simply irrelevant. Quite apart from whether Iran has not procured the same number of kidneys per million population, the evidence shows that Iran has procured *enough* kidneys to eliminate its waiting list, a claim that no other country, and particularly no “donor-only” country, can even begin to approach.

**Living Organ Donation and Living Organ Vending: Not Mutually Exclusive**

Admittedly, the kidney vendor program in Iran has resulted in fewer kidneys procured

from biologically related donors, than from living vendors;<sup>45</sup> however, that does not necessarily mean that altruistic donations have dropped. Despite a flourishing kidney vendor program, biologically related donation has consistently constituted 12–13 percent of all donated kidneys, and that fraction has persisted in tandem with the rapid rate of growth in kidneys procured (without compensation to the donor’s estate or family) from deceased donors.<sup>46</sup> While a great many recipients choose to purchase a kidney from a living vendor through DATPA, in 2006 some 28 percent of recipients did not do so. That raises a troubling problem for critics of the Iranian system, and of a market for kidneys more generally. The Iranian system, as any market-based system for organ procurement would do, permits, but does not require, altruistic donation. A market permits recipients and potential donors/vendors to choose whether they prefer remuneration or more altruistic rewards. The data from Iran suggests that allowing remuneration does not discourage those who believe altruistic donation is the only acceptable option from continuing to donate or receive donated organs exclusively.

It is not at all clear that “donor-only” policies encourage altruism. In donor-only countries, like the United States, identified donors are free to refuse to donate, but they do so with the clear understanding that their designated recipient may be significantly disadvantaged and perhaps die waiting for a kidney as a consequence of their decision. Under such conditions, at least some donors surely choose to prevent that consequence by donating. Even so, that shouldn’t be interpreted as *fostering* altruism. Donations motivated by familial or social pressures, or profound feelings of guilt, are hardly the hallmarks of altruistic action. In Iran, however, biologically related potential donors who choose not to donate can make that choice without jeopardizing the health of their relative, because in Iran it is easier to obtain a kidney from other sources than it is in countries where organ vending is not permitted. In this sense, a market for kidneys serves to *clarify* altruistic choices.<sup>47</sup> As Tibor

Machan has argued, when acts of altruism are permitted but not required, choosing to act altruistically is correctly understood as acting above and beyond the call of duty, and thus accrues additional moral credit in ways that merely meeting moral obligations does not.<sup>48</sup>

### **Are Organ Vendors Coerced into Selling Their Kidney?**

Paying for kidneys is not “coercive,” as opponents of the Iranian system often claim. A preponderance of evidence confirms that kidney vendors in Iran are disproportionately (more than 70 percent in every available survey) impoverished—by nearly any definition of the term.<sup>49</sup> But whether remuneration of kidney vendors in Iran is therefore *coercive* is not as self-evident as the critics suppose<sup>50</sup>—though obviously much turns on what is understood in labeling an offer coercive.<sup>51</sup> The broader the concept of what constitutes a coercive offer, the narrower the range of noncoercive choices available. Stipulating that the range of options open to poor people is generally more limited than the range of options open to the well-off, the question is this: Are all offers made to impoverished persons coercive, or only some? If *all* offers made to the impoverished are coercive, this leads to the counterintuitive conclusion that *no* choices made by impoverished persons are uncoerced, and thus there is nothing morally unique about offering them remuneration for their organs. A charitable offer, or the offer of employment, to an impoverished person would be coercive in exactly the same way, in that circumstances coerce the person into accepting a gift or a paying job. However, if some offers are coercive and some are not—and the coercive nature of an offer is morally relevant—then some defensible distinctions must be drawn between coercive and noncoercive offers.

It is useful to compare the offer of remuneration for an organ with other options available to impoverished vendors, and to consider whether organ vending is somehow uniquely coercive in a way that (for example) the offer of charity or the offer of a paying job is *not* coercive. Voluntariness is antithetical to the con-

cept of coercion, and an offer cannot be coercive if the relationship is initiated by the person in danger of being coerced. In Iran, vendors present themselves voluntarily to DATPA for consideration based on general knowledge about the option of organ vending.<sup>52</sup> The Iranian system specifically prevents physicians in need of an organ for a particular patient from initiating organ vending. More expansive interpretations of coercion<sup>53</sup> would apply, equally and unfavorably, to offers such as a charitable gift or a menial job, which are not typically thought to be coercive. If those examples are judged coercive, then perhaps the same can be said of the psychological pressures inherent in currently acceptable methods of soliciting organs for donation.<sup>54</sup> In short, any claim that offers to impoverished organ vendors in Iran are inherently coercive bears the burden of explaining what makes an offer to vend uniquely coercive and other offers relevantly less so.

## **The Best of Both Worlds: Learning from the Iranian Experience and Moving toward Solving the Organ Shortage in the United States**

Taking into consideration the concerns described above, the United States can learn important lessons from Iran. Seven such lessons make clear that organ vending is a remarkably effective means of eliminating a country’s organ shortage. The only plausible explanation for Iran’s accomplishment of eliminating its waiting list for kidneys is its system of organ procurement from living vendors. Twenty years of experience with organ vending in Iran has demonstrated that a vendor system can exist in harmony with both a living-related-donor program and a flourishing deceased-donor program. Far from restricting access to transplantation to the well-off, access to organs in Iran is possible regardless of the recipient’s ability to pay.

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In addition, the Iranian system has spared that country the atrocities that accompany gray-market organ trafficking, a practice made possible only because desperate recipients from countries such as the United States have no recourse to a legal market in organs.

**More Organs from All Sources**

Presumably, altruism could persist and even flourish alongside a kidney market in the United States as it does in Iran. Contrary to critics' assertions, the Iranian model of kidney vending does not preclude either living or deceased donation, as demonstrated by stable rates of biologically related living donation, as well as escalating rates of deceased donation. Deceased donation would and should continue in the United States as it does in Iran. Some have raised the concern that the introduction of market mechanisms would result in lower rates of procurement from living and deceased donors,<sup>55</sup> a claim unsupported by the evidence.<sup>56</sup> The donor system, whether relying on living or deceased donors, permits individuals who are morally committed to *donating* (not selling) their organs to do so. Recipients with moral objections to receiving an organ purchased from a vendor need not pay for that decision with their lives. Instead, those recipients can request that they only receive an organ from a *donor*; and donors who plan on donating at death can stipulate that their organs may be procured only if they are not subsequently sold.<sup>57</sup> If a vendor market in the United States can be as successful in reducing demand as it has in Iran, the recipient pool for deceased donors would be far smaller than it is today, making the actualization of the moral commitment not to receive an organ from a living vendor less likely to be a fatal decision.

**Minimizing Risks to Vendors**

In the United States, a market approach to kidney procurement could function far better than the Iranian system by working to ensure optimal outcomes and minimize risk for vendors and recipients alike. If the long-term outcomes of organ vendors are formally included as a moral and financial responsibility of the

vending system, then market forces will minimize costs by selecting a vendor population with the lowest risk of developing social or physical complications after the exchange.<sup>58</sup> There is a growing consensus throughout the transplant community regarding standards for evaluation and care of the live organ donor.<sup>59</sup> That is the obvious starting point for generating analogous standards for the live organ *vendor*. The government's financial interest in identifying a vendor population at lowest risk of short- and long-term complications after organ procurement overlaps with the obligations of transplant professionals to minimize the risk of harm to vendors. In turn, the obligation not to harm vendors suggests that standards for choosing vendors should be *more* stringent than current standards for living *donors*. Furthermore, in a vendor system, an increased potential pool of organs from the healthiest vendors should reduce pressure on transplant professionals to consider living-donor candidates of questionable medical acceptability. The hazardous temptation to balance the ongoing suffering of a recipient with the sheer determination of a living donor to donate regardless of the risks to themselves would be sharply reduced in a vendor system. For all the well-founded concerns about safety, a properly constructed vendor system would quite probably be safer for all parties compared with the current system.

**Good Outcomes for Vendors Have Moral Value and Market Value**

The moral value of safe practices can be traced to the general obligation of a physician to avoid doing harm to patients. For both donors and vendors alike, providing a clear, evidence-based understanding of the long-term risks of exchanging a kidney are paramount for achieving authentically informed consent. The market value of safe practice has many facets. First, a system where the safety of vendors is given priority offers the stability and reproducibility necessary for fostering trust. Second, a safe system minimizes adverse outcomes by definition, which results in lower expenditures on the consequences of adverse outcomes.



Consider that, in the United States, the vast majority of people with moderate kidney disease do not live long enough to develop kidney failure because any degree of kidney disease significantly accelerates the progression of heart attacks and strokes. Kidney vendors with undetected, preexisting kidney disease or risk factors for kidney disease are likely to develop the attendant cardiovascular complications of reduced kidney function and, by extension, incur considerably higher health care expenses.<sup>60</sup> Thus, a system that selects as organ vendors those individuals *least likely* to develop short- and long-term complications is most likely to reduce overall health care expenditures. In this way, moral obligations and market pressures to maximize cost-efficiencies intersect when the safety of organ vendors and organ recipients is a priority.

### **The United States Has the Infrastructure to Adopt the Best Aspects of the Iranian System**

In the United States, no institution precisely compares to the Iranian DATPA. But organ procurement organizations (OPOs) have served basically the same function for procuring and distributing organs from deceased donors, so the responsibility for identifying and screening living organ vendors can reasonably be assigned to OPOs. OPOs in the United States have cooperative relationships with individual transplant centers, limited to the identification and procurement of organs from deceased donors. Living donors are typically identified and evaluated by individual transplant centers. Individual centers provide the counseling and disclosures necessary for informed consent without the involvement of the OPO. In Iran, a clear division of labor exists between the DATPA and transplant centers, with the former identifying potential organ vendors and referring them to transplant centers for medical and surgical evaluation.

A similar division of labor would make sense in the United States for several reasons. First, making OPOs, not transplant centers, solely responsible for identifying and screening potential organ vendors would mirror

OPOs' current role in deceased donation. That would limit the burden on OPOs to assimilate new responsibilities beyond their traditional areas of technical expertise. Second, the responsibility for the medical and surgical evaluation of organ vendors would lie with transplant nephrologists and transplant surgeons, where it belongs. Third, this division of responsibilities would mitigate potential conflicts of interest between the competing goals of increasing rates of organ procurement and ensuring safe practices in the screening and approval of potential organ vendors. OPOs can be offered incentives for correctly identifying appropriate candidates for organ vending; and conflicts of interest which might encourage the approval of inappropriate candidates can be mitigated by offering very different incentives to transplant nephrologists and surgeons. The incentives for OPOs should be geared to maximizing the supply of organs, but the incentives for physicians should be directed toward maximally ensuring the safety of organ donors and organ vendors alike.

### **Parallel Charitable Structures Could Develop**

In the United States, multiple institutions could develop to support a system of organ vending. In Iran, compensation for vendors comes from a variety of sources including charities and the DATPA, which is run by volunteers who match vendors with recipients. As indicated in the previous section, the United States could more feasibly rely on existing infrastructure to distribute organs, rather than try to emulate the Iranian DATPA. Nevertheless, the creation of alternative mechanisms for identifying potential vendors and paying their fees should not be discouraged.

One of the great strengths of the American social and economic structure in general is that it permits economic, government, and charitable institutions with overlapping goals to coexist. As H. Tristram Engelhardt has argued, one virtue of markets is that they permit persons with diverse and conflicting moral views to cooperate in limited ways with others who

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agree with them.<sup>61</sup> The same can be said of charities. Since charitable organizations exist primarily to advance a particular moral vision, different charitable organizations could help find vendors for and from within their specific moral community.

Organ vendors motivated by more than mere self-interest might actualize multiple moral goals with assistance from such charities. Different charities might be devoted to advancing a plurality of moral visions: one might be dedicated to improving access to transplantation in a geographic area; another to members of groups disproportionately affected by kidney disease such as African Americans; another toward encouraging organ allocation to individuals in need, independent of other considerations. Charities could even spring up to promote organ donation, dedicating funds to defray financial disincentives to organ donation such as lost wages from time away from work and travel expenses, or to broadly publicizing appeals to particular moral communities on behalf of a member in need. Far from appealing to an abstract concept of organ vendors as interested only in financial gain, parallel charity structures would permit vendors, recipients, and entire moral communities to cooperate in finding ways to end the organ shortage.

***Caveat venditor?* Avoiding Bad Outcomes for Vendors**

If a regulated system of kidney vending were observed to routinely reduce vendor well-being, that would be cause for moral concern. The concern would arise not because the impoverished are unable to make choices which might entail bad outcomes, but because the impoverished, like the rest of us, are ostensibly less likely to make bad choices if the consequences are known in advance. If an offer is attractive only because its manifestly *unattractive* features have been deliberately concealed, then the offer is predicated on deceit, and the vendor is a victim not of coercion, but of fraud.

The evidence reviewed here does not support the contention that kidney vendors are coerced, nor that an offer of compensation for kidneys in any way constrains a vendor's

autonomy. However, it may be the case that kidney vendors in Iran suffer reduced well-being often enough to warrant closer scrutiny of how vendors are selected. Several studies reporting outcomes from kidney vendors in Iran support that concern.<sup>62</sup> As previously discussed, reports on the social and economic consequences of kidney vending in Iran vary from the reassuring<sup>63</sup> to the dire,<sup>64</sup> with no dispositive means to discern which reports are closer to the truth, or indeed whether both accounts are accurate.<sup>65</sup> Given the lack of dispositive evidence, the United States should track long-term vendor outcomes in case unanticipated negative side effects arise from permitting the sale of organs.

**Registries, Lifelong Health Care Coverage, and Medical Judgment**

Reforms advocated by Iranian proponents of their own system of organ vending overlap with safeguards included in organ market proposals for the United States. Both advocate a registry for vendors and donors, as well as lifelong health care coverage, to more clearly define the short- and long-term consequences of exchanging a kidney,<sup>66</sup> and both reserve the right of transplant professionals to veto a vendor's candidacy based on medical judgment alone.<sup>67</sup>

To ground generalizations about long-term outcomes of donors and vendors in verifiable fact, any organ vending system should track the medical, surgical, psychological, and socioeconomic consequences of both organ donation and organ vending. The most obvious way to do this would be to provide lifelong, comprehensive health insurance to living donors and vendors, perhaps making it a mandatory benefit of any privately arranged organ vending agreement. As Arthur Matas and Mark Schnitzler have shown, the cost savings to the government of paying for transplantation instead of dialysis are vast.<sup>68</sup> Thus, it might be both cost-effective and morally salutary to compensate vendors with regular tax-free deposits into personal health savings accounts, which vendors could use to purchase comprehensive insurance coverage from private insurers.

Private insurers, in turn, should have an interest in providing health insurance to rigorously screened vendors. If vendor screening is such that organ vendors, as a group, can part with a kidney and suffer even *fewer* short- and long-term complications than donors, vendors as a group would be attractive to insurers from an actuarial standpoint.

The lessons learned from the Iranian system of organ vending suggest several potential hazards that need to be taken into account. First, physicians have an obligation to avoid cooperation with vendors if the vending system regularly and predictably results in the reduced well-being of kidney vendors.<sup>69</sup> Whether this will be the case in the United States is unclear, but the possibility certainly exists. Iran has avoided the problem by having the DATPA arrange recipient/vendor matches. Second, the government has a fiduciary obligation not to permit a program of kidney vending if a significant number of vendors suffer from serious complications, including but not limited to an increase in kidney disease. It is unclear whether the Iranian government is meeting that obligation. The U.S. government should monitor outcomes right from the beginning to make sure serious complications are identified and avoided. And third, kidney vending must routinely provide mutually beneficial exchanges;<sup>70</sup> otherwise, fostering such exchanges constitutes moral complicity with unfair arrangements. The degree to which these hazards apply to the current system of kidney vending in Iran is not known. Regardless, a system where these concerns, when identified, are systematically managed, minimized, or eliminated is clearly preferable.

## **First Steps toward a System of Organ Vending in the United States**

A system of organ vending in the United States, informed by the Iranian experience, will entail several reforms. To be successful, such reforms must allow room for experimentation with various types of vendor arrangements while simultaneously ensuring

the fairness of those arrangements. No single success or failure should define the acceptability of a market approach to organ vending. Many options may need to be tried and, with time and careful study, a fair and equitable market approach to solving the organ shortage should be possible.

### **Legalize Organ Vending**

A straightforward repeal of Section 301 of the National Organ Transplant Act,<sup>71</sup> which proscribes the exchange of “valuable consideration” for organs, would be the most effective first step toward establishing a comprehensive system of organ vending in the United States. A more feasible but politically difficult first step would be for Congress to allow exemptions from Section 301 of NOTA to permit pilot programs in organ vending. However, whether or not such programs proved successful could depend on many variables. For example, a pilot program might increase the number of organs without fulfilling other obligations to organ vendors, inviting unflattering comparisons to underground organ trafficking. Or a program might be successful in one community but ineffective (or inappropriate) in other communities. An incentive program that works in Chicago might not be nearly as effective in Poughkeepsie. By extension, a single program which fails to increase the number of organs should not lead to the conclusion that all incentive proposals are certain to fail. For these reasons, a straightforward repeal of Section 301 would be preferable.

### **Use the Savings Wisely**

By making use of existing institutional structures such as transplant centers and OPOs, the maintenance costs of a vendor market would be much lower than for dialysis, and efforts should be made to use the surplus wisely. The vast expense of dialysis means that the amount of money potentially available to pay vendors and still break even is quite high (by some estimates, more than \$100,000 per vendor).<sup>72</sup> Thus, a successful vendor market will probably reduce government expenditures significantly compared to the current

**The vast expense of dialysis means that the amount of money potentially available to pay vendors and still break even is quite high.**

**A review of 20 years of experience with a living organ vendor system in Iran reveals successes, deficiencies, and ambiguities.**

system. At a minimum, the financial liabilities to a vendor market would include maintaining a registry, paying for health coverage for donors and vendors, making up the additional operational costs to OPOs for identifying and screening vendors, and funding oversight of various incentive programs to ensure that mechanisms for safe practices and long-term follow-up are in place. At least some of the surplus (if any) from a vendor program should be set aside to maintain the solvency of funds dedicated to paying for the long-term medical obligations to vendors.

**Create Mechanisms to Ensure Fair Trading**

The legalization of organ vending cannot be an invitation to anarchy. Legal organ vending requires adapting existing infrastructure to ensure “mutual gains through trade,” by prioritizing the safety of all parties, and to successfully increase the number of available organs.<sup>73</sup> These goals can best be achieved by legislative and court action affirming an individual’s property right in their own body and ensuring that fairly executed contracts for organ vending are upheld. To help ensure fairness, laws might require lifelong health coverage for donors or at least some direct payments into an individual health savings account delineated for purchasing comprehensive health insurance only for the designated vendor. To encourage vendors to follow up with a physician over the long-term, deposits to the health savings account could be amortized, contingent upon the vendor making follow-up visits at specified intervals. Such restrictions are justified by the fact that the government has a direct financial interest in ensuring that vendors are at minimal risk of developing short- or long-term complications after the exchange. Similarly, tying incentives for organ procurement organizations and transplant physicians to the correct identification and assessment of low-risk vendors, rather than to the absolute number of vendors approved, merges the moral obligations of transplant professionals to minimize harm with the economic interests of the govern-

ment to avoid the costs of paying for the consequences of injury.

**Let a Thousand Flowers Bloom**

Since the constraints on a proposed vendor system in the United States are modest, and the effectiveness of various incentives must be empirically validated (in the form of both increasing the number of transplantable organs and documenting long-term outcomes of vendors and recipients), individual transplant facilities and OPOs should be permitted to fashion their own vendor systems, subject to modest oversight. There is little reason to suppose that a given package of incentives offered to residents of New York City will appeal equally to individuals in Charlotte, Chicago, or Houston. Permitting diversity in structure encourages innovative approaches, which in turn offer communities and vendors a panoply of incentive options, though each set of options should include safeguards for all parties. So long as incentives are successful, and the proper safeguards are in place, the specifics become less important.

**Conclusion: Solutions Instead of Sermons**

Despite vast cultural and political differences between Iran and the United States, much can be learned from the Iranian system. A review of 20 years of experience with a living organ vendor system in Iran reveals successes, deficiencies, and ambiguities. Each of those aspects is instructive for demonstrating what an organ market can be, as well as what it ought to be. If there is a salient irony in the debate over the moral defensibility of the Iranian system, it is that American critics seem disappointed that the Iranians did not follow our lead. But carrying this reasoning to its conclusion would entail admitting that in so doing, Iran would have also incurred our current shortage of organs, our waiting list mortality, and our consequent moral complicity in sustaining an international market in illegal



organ trafficking.<sup>74</sup> If the discussion of kidney markets in this country can progress beyond preconceptions as to what can and cannot work, in Iran or elsewhere, to an examination of the example of Iran based on the evidence, that will be a significant step in the right direction.

## Notes

Thanks are due to Sigrud Fry-Revere, James Stacey Taylor, and Lisa Rasmussen for their insightful comments and criticisms. Responsibility for all errors of fact or of reasoning is mine alone.

1. Shana Alexander, "Medical Miracle and a Moral Burden of a Small Committee: They Decide Who Lives, Who Dies," *Life Magazine*, November 7, 1962, pp. 102–25
2. Nicholas Tilney, *Transplant: From Myth to Reality* (New Haven: Yale University Press, 2003), pp. 60–64.
3. Ali Nobakht Haghighi and N. Ghahramani, "Living Unrelated Kidney Donor Transplantation in Iran," *Nature Clinical Practice Nephrology* 2 (2006): e1.
4. The introduction of Cyclosporin A in 1983, an immunosuppressant medication targeting T-lymphocytes, ushered in an era of substantially improved graft outcomes after transplantation: 80 percent versus 64 percent one-year graft survival. See "A Randomized Clinical Trial of Cyclosporine in Cadaveric Renal Transplantation," *New England Journal of Medicine* 309 (1983): 809–15
5. Richard A. Rettig, "Historical Perspective," in *Ethics and the Kidney*, ed. Norman G. Levinsky (Oxford, UK: Oxford University Press, 2001).
6. Haghighi and Ghahramani, "Living Unrelated Kidney Donor Transplantation in Iran." Many transplant programs in Iran were discontinued after the 1979 revolution, and nearly all Iranian transplant surgeons emigrated to either the United States or Europe. Prior to 1985, some 4,000 patients were maintained on dialysis in Iran, but only 100–110 kidney transplants took place from 1967 to 1985. See Ahad J. Ghods, "Renal Transplantation in Iran," *Nephrology Dialysis Transplantation* 17 (2002): 222–28; and author's correspondence with Ahad Ghods, M.D. F.A.C.P., October 10, 2007. Used with permission; copy in author's files.
7. From 1980 to 1985, prior to the legalization of organ vending in Iran, the Iranian Ministry of Health provided reimbursement for recipients with living-related donors to travel abroad for transplant surgery. Ghods, "Renal Transplantation in Iran."
8. See Richard A. Rettig, "Origins of the Medicare Kidney Disease Entitlement," in *Biomedical Politics*, ed. Kathi Hanna (Washington: National Academy Press, 1991), pp. 188–89.
9. *Social Security Amendments of 1972*, Public Law 92-603, Section 299I, *U.S. Statutes at Large* 86 (1972): 1329, 1463–64, codified at U.S. Code 42 (1972), Section 1395. The legislative history of the Medicare entitlement for ESRD is recounted in a lively fashion in Rettig, "Origins of the Medicare Kidney Disease Entitlement."
10. *The National Organ Transplant Act of 1984*, Public Law 98-507, *U.S. Statutes at Large* 98 (1984): 2344, codified at U.S. Code 42 (2002), Sections 273–74, contains a specific criminal prohibition (NOTA Section 301) against any person receiving "valuable consideration" in exchange for a human organ, U.S. Code 42 (2002), Section 274e.
11. Ghods, "Renal Transplantation in Iran."
12. United States Renal Data System, *Annual Data Report 2007* (Minneapolis: USRDS, 2007), <http://www.usrds.org>.
13. Ibid.
14. J. L. Xue, et al., "Forecast of the Number of Patients with End-Stage Renal Disease in the United States to the Year 2010," *Journal of the American Society of Nephrology* 12 (2001): 2753–58.
15. United States Renal Data System.
16. David T. Gilbertson, et al., "Projecting the Number of Patients with End-Stage Renal Disease in the United States to the Year 2015," *Journal of the American Society of Nephrology* 16 (2005): 3736–41.
17. Xue, et al.
18. Ghods, "Renal Transplantation in Iran."
19. "Removal Reasons, by Year, 1999–2006," Organ Procurement and Transplantation Network, <http://www.optn.org/latestData/viewDataReports.asp>.
20. United States Renal Data System. See Figure 11.1, <http://www.usrds.org/>.
21. Ibid.
22. Ibid. See Figure 6.16, <http://www.usrds.org/>.
23. Benjamin E. Hippen, "The Case for Kidney Markets," *New Atlantis* 14 (2006): 47–61, <http://>

- www.thenewatlantis.com/archive/14/hippen.htm.
24. Benjamin E. Hippen, "In Defense of a Regulated Market in Kidneys from Living Vendors," *Journal of Medicine and Philosophy* 30 (2005): 593–626.
25. Data available at the Organ Procurement and Transplantation Network, <http://www.optn.org>.
26. Ahad J. Ghods, "Review of the Unique Iranian Model for Living Kidney Donation, Two Decades after Its Initiation," September 2, 2007. Unpublished manuscript, used with permission of the author; copy in author's files.
27. Author's correspondence with Ghods, October 10, 2007.
28. Ahad J. Ghods and S. Shekoufeh, "Iranian Model of Paid and Regulated Living-Unrelated Kidney Donation," *Clinical Journal of the American Society of Nephrology* 1 (2006): 1136–45.
29. Whether and to what degree vendors make use of this health benefit is not clear, as there is no formal longitudinal follow-up for vendors after the exchange.
30. S. Ossareh, et al., "Attitude of Iranian Nephrologists toward Living Unrelated Kidney Donation," *Transplantation Proceedings* 39 (2007): 819–21.
31. Ghods and Shekoufeh, "Iranian Model of Paid and Regulated Living-Unrelated Kidney Donation"; and Haghighi and Ghahramani, "Living Unrelated Kidney Donor Transplantation in Iran."
32. Ghods and Shekoufeh.
33. Benjamin E. Hippen, "A Modest Approach to a New Frontier: Commentary on Danovitch," *Transplantation* 84 (2007): 464–66.
34. Malek-Hosseini and colleagues reviewed the results of 1,200 consecutive kidney transplants at Nemazee Hospital in Shiraz, Iran, from 1998 to 2003 and reported a 92 percent four-year patient survival for recipients of living-related-donor kidneys, 91 percent for recipients of vendor kidneys, and 90.5 percent for recipients of deceased-donor kidneys. No statistically significant difference in organ survival was observed between biologically related donors, living kidney vendors, and recipients of deceased-donor kidneys after four years. See S. Malek-Hosseini, et al., "Long-Term Results of Renal Transplantation: A Single-Center Analysis of 1,200 Transplants," *Transplantation Proceedings* 38 (2006): 454–56. Reviewing results in a different institution, Ahad Ghods reported significantly different rates of organ survival between immunologically well-matched, biologically related donors, and less-well-matched related donors from living kidney vendors. Organ outcomes were slightly worse for recipients of kidney vendors 10 years after transplantation (10-year organ survival of 44 percent), but the differences were modest when compared to outcomes from less-well-matched, biologically related living donors (53 percent at 10 years) and did not reach statistical significance. Ghods, "Renal Transplantation in Iran." For comparison, consider that the most recent reports of 10-year organ survival in the United States are at 54.9 percent. "Adjusted Graft Survival by Year of Transplant at 3 Months, 1 Year, 3 Years, 5 Years and 10 Years—Living Donor Kidney Transplants," Table 5.9c in *Scientific Registry of Transplant Recipients, 2006 Annual Report* (Washington: U.S. Department of Health and Human Services, 2006), <http://www.ustransplant.org/>.
35. Tahereh Malakoutian, et al., "Socioeconomic Status of Iranian Living Unrelated Kidney Donors: A Multicenter Study," *Transplantation Proceedings* 39 (2007): 824–25.
36. In a survey of 500 kidney vendors selected at random, Ghods and colleagues found that the vast majority of vendors was male (90.2 percent) and "poor" (84 percent so classified, 16 percent "middle class"), with a low level of educational achievement (6 percent "illiterate," 24 percent possessing an elementary education). Among the recipients, some 50 percent were classified as "poor," 36 percent "middle-class," and 13 percent "wealthy." See Ahad J. Ghods, S. Ossareh, and P. Khosravani, "Comparison of Some Socioeconomic Characteristics of Donors and Recipients in a Controlled Living Unrelated Donor Renal Transplantation Program," *Transplantation Proceedings* 33 (2001): 2626–27. However, another survey of 301 kidney vendors who had sold a kidney between 1989 and 2000 in Kermanshah, Iran, reported somewhat different trends: 71 percent male, 27 percent unemployed with 18 percent confined to "home duties," and 35 percent illiterate with an additional 25 percent having an elementary education. J. Zargooshi, "Quality of Life of Iranian Kidney 'Donors,'" *Journal of Urology* 166 (2001): 1790–99.
37. T. V. Perneger, P. K. Whelton, and M. J. Klag, "Race and End-Stage Renal Disease: Socioeconomic Status and Access to Health Care as Mediating Factors," *Archives of Internal Medicine* 155 (1995): 1201–208; N. Drey, et al., "A Population-Based Study of the Incidence and Outcomes of Diagnosed Chronic Kidney Disease," *American Journal of Kidney Disease* 42 (2003): 677–84; E. W. Young, et al., "Socioeconomic Status and End-Stage Renal Disease in the United States," *Kidney International* 45 (1994): 907–11; and C. M. Fored, et al., "Socio-Economic Status and Chronic Renal Failure: A Population-Based Case-Control Study in Sweden,"

38. Malakoutian and colleagues, for example, reported that 91 percent of the vendors they surveyed reported they were “satisfied” with the exchange and that 53 percent recommended organ vending to others. See Malakoutian, et al., “Socioeconomic Status of Iranian Living Unrelated Kidney Donors.” However, J. Zargooshi reported a litany of adverse outcomes for vendors: 38 percent lost their jobs due to postoperative complications, 39 percent were subjected to severe social ostracism, 84 percent reported difficulty securing employment because of social ostracism, and 60 percent fully expected to be dialysis-dependent themselves or die in the near future as a consequence of selling a kidney. See Zargooshi, “Quality of Life of Iranian Kidney ‘Donors.’” Since these studies were undertaken at different institutions, it is possible that both are correct. The lesson for the United States in considering a system of organ vending is that the risk to vendors must be minimized by careful screening modeled on the screening of living donors, transparency regarding the known and unknown risks of organ vending, and long-term prospective follow up of organ vendors. See Hippen, “In Defense of a Regulated Market in Kidneys from Living Vendors.”

39. N. Savrestani, “Iran’s Desperate Kidney Traders,” BBC News, October 31, 2006, <http://news.bbc.co.uk/2/hi/programmes/thisworld/6090468.stm>.

40. William Harmon and Francis Delmonico, “Payment for Kidneys: A Government-Regulated System Is Not Ethically Achievable,” *Clinical Journal of the American Society of Nephrology* 1 (2006): 1146–47.

41. The history of the progression from religious to legislative acceptance of brain death is described in B. Larijani, F. Zahedi, and E. Taheri, “Ethical and Legal Aspects of Organ Transplantation in Iran,” *Transplantation Proceedings* 36 (2004): 1241–44; and M. Raza and K. M. Hedayat, “Some Sociocultural Aspects of Cadaver Organ Donation: Recent Rulings from Iran,” *Transplantation Proceedings* 36 (2004): 2888–90.

42. A series of *fatwa* (Islamic religious decrees) were issued, beginning in the 1980s with Ayatollah Khomeini, that paved the way for legislative approval of the concept of brain death. See M. M. Golmakani, M. H. Niknam, and K. M. Hedayat, “Transplantation Ethics from the Islamic Point of View,” *Medical Science Monitor* 11 (2005): 105–09.

43. Hippen, “A Modest Approach to a New Frontier.”

44. Gabriel M. Danovitch, “Cultural Barriers to Kidney Transplantation: A New Frontier,” *Trans-*

*plantation* 84 (2007): 462–63; and Gabriel M. Danovitch and Alan B. Leichtman, “Kidney Vending: The ‘Trojan Horse’ of Organ Transplantation,” *Clinical Journal of the American Society Nephrology* 1 (2006): 1133–35. The increase in kidneys procured from deceased donors since the statutory recognition of brain death by the Iranian parliament in 2000 appears to be a consequence of several factors. The legislative imprimatur made possible the establishment of a kidney procurement organization (given the acronym IRANTOP—the Iranian Network for Transplant Organ Procurement—by Iranian scholars who write in English) capable of prospectively identifying potential candidates for kidney donation after the declaration of death by whole-brain criteria. See B. Larijani, F. Zahedi, and E. Taheri, “Deceased and Living Organ Donation in Iran,” *American Journal of Transplantation* 6 (2006): 1493. In addition, success was contingent upon establishing essential infrastructural components such as trained organ procurement professionals and standards for diagnosing brain death, as well as securing and promulgating religious imprimaturs for living and deceased donation. See Larijani, Zahedi, and Taheri, “Ethical and Legal Aspects of Organ Transplantation in Iran”; and Raza and Hedayat, “Some Sociocultural Aspects of Cadaver Organ Donation.”

45. Ghods and colleagues reported that, in a survey of recipients of vendor kidneys, some 81 percent had a potential biologically related donor who declined either for “cultural reasons” or because of the availability of a kidney vendor program. See Ahad J. Ghods, S. Savaj, and P. Khosravani, “Adverse Effects of a Controlled Living-Unrelated Donor Renal Transplant Program on Living-Related and Cadaveric Kidney Donation,” *Transplantation Proceedings* 32 (2000): 541.

46. The use of public education campaigns in Iran to combat indigenous concerns about deceased donation (e.g., perceived religious proscriptions or the potential for a reduced intensity of care at the end of life), has helped to increase the number of organs procured from deceased donors from 1.8 percent (n=26) of all kidney transplants in 2000 to 15 percent (n=243) in 2006. See Ghods, “Review of the Unique Iranian Model for Living Kidney Donation.”

47. Hippen, “In Defense of a Regulated Market.”

48. Tibor R. Machan, “Blocked Exchanges Revisited,” *Journal of Applied Philosophy* 14 (1997): 249–262.

49. Malakoutian, et al., “Socioeconomic Status of Iranian Living Unrelated Kidney Donors”; Ghods, Ossareh, and Khosravani, “Comparison of Some Socioeconomic Characteristics of Donors and Recipients”; and Zargooshi, “Quality of Life of



Iranian Kidney 'Donors'."

50. See Harmon and Delmonico, "Payment for Kidneys."

51. Alan Wertheimer identifies no fewer than 11 distinct uses of "coercion" in legal and moral contexts, which range from the straightforward definition of "cases in which the agent's actions or movements are non-volitional," to "claims to emphasize the efficacy or usefulness of informal pressures that do not involve specific penalties." Alan Wertheimer, *Coercion* (Princeton, NJ: Princeton University Press, 1987), pp. 185, 187.

52. Ghods and Shekoufeh, "Iranian Model of Paid and Regulated Living-Unrelated Kidney Donation."

53. Examples of more expansive interpretations of the concept of coercion include instances when only one prudent offer among many exists; when the offer in question is not one the individual is most happy with; when the offer exist only along a spectrum of very limited options; or when the choice occurs in the context of a host of filial, social, and cultural pressures that threaten disapproval or disgrace if the offer is not accepted. These examples are taken from Wertheimer, *Coercion*, pp.185–89.

54. Describing a phenomenon famously dubbed the "tyranny of the gift," Renee Fox and Judith Swazey observed, "This psychological and moral burden is especially onerous because the gift the recipient has received from the donor is so extraordinary that it is inherently unreciprocal. It has no physical or symbolic equivalent. As a consequence, the giver, the receiver, and their families may find themselves locked in a creditor-debtor vise that binds them one to another in a mutually fettering way." Renee C. Fox and Judith P. Swazey, *Spare Parts: Organ Replacement in American Society* (Oxford, UK: Oxford University Press, 1992), p. 40.

55. Ajay K. Israni, et al., "Incentive Models to Increase Living Kidney Donation: Encouraging Without Coercing," *American Journal of Transplantation* 5 (2005): 15–20.

56. A recent survey of likely donors, found that the prospect of financial incentives for organ procurement from deceased donors would increase the likelihood of donation in 19 percent of cases, decrease the likelihood in 10 percent of cases, and make no difference in 70 percent of cases. See C. L. Bryce, et al., "Do Incentives Matter? Providing Benefits to Families of Organ Donors," *American Journal of Transplantation* 5 (2005): 2999–3008.

57. Hippen, "In Defense of a Regulated Market."

58. Ibid.

59. Francis L. Delmonico, "A Report of the Amsterdam Forum on the Care of the Live Kidney Donor: Data and Medical Guidelines," *Transplantation* 79 (2005): S53–66; and Connie L. Davis, "Evaluation of the Living Kidney Donor: Current Perspectives," *American Journal of Kidney Diseases* 43 (2004): 508–30.

60. For the same reason, aggressive measures to prevent the progression of kidney disease typically prevent more people from dying from heart attacks and strokes, thereby permitting more people to live long enough to develop kidney failure and require either dialysis or transplantation. See Benjamin E. Hippen, "Preventive Measures May Not Reduce the Demand for Kidney Transplantation. There Is Reason to Suppose This Is Not the Case," letter to the editor, *Kidney International* 70 (2006): 606–07.

61. H. Tristram Engelhardt, Jr., *The Foundation of Bioethics*, 2nd ed. (New York: Oxford University Press, 1996).

62. In a recent study of living donors and vendors from a single institution in Iran, 80 out of 86 (93 percent) of those studied were vendors. High blood pressure was the most frequently reported complication, occurring in 32 of 86 cases. Surgical complications occurred in 5.8 percent of cases, including postoperative infections, excessive blood loss, and one case of a collapsed lung. Patients were left with residual kidney dysfunction in 6.9 percent of cases, developed proteinuria in 10.4 percent of cases, and developed hematuria in another 13.9 percent of cases. Any of these conditions suggest preexisting kidney disease, though they may not have been identified (or identifiable) in preoperative screening. Persistent neurological complaints were reported in 17.5 percent of cases, and persistent postoperative pain in an additional 12.7 percent of cases. Of special concern, 9.3 percent of patients had been prescribed medication for severe depression. No vendor was reported to have died or progressed to kidney failure, but the length of follow-up was limited to three years. See N. Ghahramani, et al., "Occurrence of Hypertension and Proteinuria among Kidney Donors in Shiraz Nemazee Hospital," *Transplantation Proceedings* 31 (1999): 3139; H. Salahi, et al., "Effect of Donor Nephrectomy on Renal Function and Blood Pressure," *Transplantation Proceedings* 33 (2001): 2654; and S. A. Azar, et al., "Is Living Kidney Donation Really Safe?" *Transplantation Proceedings* 39 (2007): 822–23. These findings stand in sharp contrast with reported rates of surgical and long-term medical complications of kidney donation in the United States and Europe. See Arthur J. Matas, et al., "Morbidity and Mortality after Living Kidney Donation, 1999–2001: Survey of United States Transplant Centers," *American Journal of Transplantation* 3 (2003): 830–34; Amy L. Friedman, et al., "Fatal and Nonfatal Hemorrhagic Complications of Living



- Kidney Donation,” *Annals of Surgery* 243 (2006): 126–30; J. Gossman, et al., “Long-Term Consequences of Live Kidney Donation Follow-Up in 93 percent of Living Kidney Donors in a Single Transplant Center,” *American Journal of Transplantation* 5 (2005): 2417–24; and T. Ramcharan and A. J. Matas, “Long-Term (20–37 Years) Follow-Up of Living Kidney Donors,” *American Journal of Transplantation* 2 (2002): 959–64.
63. Malakoutian, et al., “Socioeconomic Status of Iranian Living Unrelated Kidney Donors.”
64. Zargooshi, “Quality of Life of Iranian Kidney Donors.”
65. A clue may be found in the general attitude of nephrologists in Iran. In the only survey of nephrologists available in English, 60 percent supported the existing system of kidney vending in principle, 42 percent assumed that kidney failure was a potential long-term complication of kidney donation or kidney vending, and 92 percent reported informing donors/vendors of the risks of complications verbally (none in writing)—though 48 percent thought that most donors/vendors preferred not to hear about the risks. See S. Ossareh, et al., “Attitude of Iranian Nephrologists toward Living Unrelated Kidney Donation,” *Transplantation Proceedings* 39 (2007): 819–21.
66. Ghods, “Review of the Unique Iranian Model for Living Kidney Donation,” and Robert S. Gaston, et al., “Limiting Financial Disincentives in Live Organ Donation: A Rational Solution to the Kidney Shortage,” *American Journal of Transplantation* 6 (2006): 2548–55.
67. Hippen, “In Defense of a Regulated Market in Kidneys from Living Vendors”; and Ghods, “Renal Transplantation in Iran.”
68. Recent cost estimates have suggested that the break-even point between the cost of dialysis and the cost of transplantation is less than 1.5 years (\$101,259 for 1.5 years of dialysis versus \$85,507 after two years of transplantation and full reimbursement for immunosuppression medications). In other words, cost savings occur if a recipient lives free of dialysis for more than 1.5 years, which is the case for more than 95 percent of recipients. See Arthur J. Matas and Mark Schnitzler, “Payment for Living Donor (Vendor) Kidneys: A Cost-Effectiveness Analysis,” *American Journal of Transplantation* 4 (2004): 216–21.
69. Hippen, “In Defense of a Regulated Market in Kidneys from Living Vendors.”
70. Richard A. Epstein, *Simple Rules for a Complex World* (Cambridge, MA: Harvard University Press, 1995), p. 80.
71. *The National Organ Transplant Act of 1984*, Public Law 98-507, *U.S. Statutes at Large* 98 (1984): 2344, codified at *U.S. Code* 42 (2002), Sections 273–274, contains a specific criminal prohibition (NOTA Section 301) against any person receiving “valuable consideration” in exchange for a human organ, *U.S. Code* 42 (2002), Section 274e.
72. Matas and Schnitzler, “Payment for Living Donor (Vendor) Kidneys.”
73. “The case in favor of freedom rests on the postulate of mutual gains through trade. The rationale for the institution provides the essential clue for its limitation. When bargaining takes place in settings where mutual gain is not the probable outcome, there is sufficient warrant for the law to step in and set that transaction aside.” Epstein, *Simple Rules for a Complex World*, p. 80.
74. A statement by the United Network for Organ Sharing board of directors condemns the practice of patients traveling abroad to purchase organs not available in their own countries (i.e., “transplant tourism”). However, it explicitly acknowledges this complicity: “. . . the Committee would be remiss in failing to observe that the practice of transplant tourism might not exist but for the growing disparity between the demand for and supply of organs. It is the solemn obligation of the transplant community, not only to publicly condemn the exploitative practices of transplant tourism, but to endorse ethically defensible policies, which will ultimately render such practices unnecessary.” From “UNOS Board Further Addresses Transplant Tourism,” June 26, 2007, <http://unos.org/news/newsDetail.asp?id=891>.

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