the elderly and in women, as well as the risks for CVD associated with a reduced estimated level of renal function. These findings have broad importance to the understanding of the epidemiology of CKD and its consequences and add further to the urgency of a re-evaluation of the performance of eGFR. They generate questions regarding the utility of renal function—estimating equations based on serum creatinine, such as eGFR-MDRD, for the assessment of renal function in clinical medicine. Clearly, these formulae and their application to epidemiology have helped to heighten awareness of CKD and its complications, but to move forward, new approaches are needed (i) that obviate the use of surrogates for creatinine generation; (ii) that take account of the effect of age and gender on GFR; and (iii) that use markers for GFR other than creatinine. Perhaps cystatin C or a combination of cystatin C and creatinine will ultimately fulfill this latter role.22 The eGFR-MDRD and other estimates of renal function based on serum creatinine alone require an objective performance review of their roles in clinical medicine. GFR estimation must evolve into a more precise and accurate art.

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REFERENCES

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The international realities of live donor kidney transplantation

Francis L. Delmonico1

Horvat and coauthors report on trends in living kidney transplantation in 69 countries, having assembled the data from registries, national societies, the medical literature, and direct contact with transplant centers. Assembling worldwide data on live-donor kidney transplants is a commendable accomplishment that serves the international transplant community well.


In this issue of Kidney International, Horvat and coauthors1 report on trends in living kidney transplantation in 69 countries, having assembled the data from registries, national societies, and the medical literature. In those countries in which there were no registry data, the authors contacted the transplant centers directly to acquire the data. Assembling worldwide data on live-donor kidney transplants is a commendable accomplishment that serves the international

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transplant community well. What is now evident in many parts of the world is the reliance on the live donor as the preferred source of the live kidney transplant. An explanation for this development is derived from widely known reference data initially compiled by Cecka more than a decade ago. The allograft survival for an unrelated kidney transplant (determined by kidney half-life) is equal to the survival achieved by the transplantation of a kidney from a parent or a child or from a haploidentical sibling (half-lives all approximately 16 years). Moreover, the outcome of transplantation of a kidney from a completely mismatched donor, whether known or anonymous to the recipient, is no different from that of a haploidentical match. A better outcome is provided only by an HLA-identical sibling. These data and the advances in laparoscopic nephrectomy are the factors that probably account for the observations presented in the report by Horvat et al.

THE NEED FOR A GLOBAL REGISTRY

The World Health Organization (WHO) is most receptive to efforts such as those of Horvat and coauthors. It has a keen interest in developing a global knowledge base in transplantation that can eventually provide rates of live and deceased organ donation. The WHO is aware of additional information on transplantation practices not presented by Horvat et al. For example, the estimate of kidney transplantation in Egypt alone approximates at least 1000, virtually all of these transplants being from live kidney vendors. Approximately 70 kidney transplantations are performed in Cyprus each year, at least 60% of these transplants being from live donors. Live-donor kidney transplantation has now been accomplished in developing countries such as Kenya and Guyana.

The objective of establishing a data registry clearly includes the evaluation of transplantation performance. Thus, there are two other important data categories that might have been addressed by Horvat and coauthors in their pursuit of the collected information from each country: donor gender and donor deaths. The legal sanction to sell a kidney seems to influence the donor gender, with a predominance of male vendors, for example, in Iran; in contrast, female altruistic donors provide approximately 75% of the kidneys for transplantation in many other countries. Horvat et al. emphasize that one goal of a data registry should be ‘enhancing the safety and ethical framework of this practice.’ However, more recent accounts (not brought to attention by Horvat et al.) reveal a grim outcome of vendor transplantation for the ‘donor.’

THE KIDNEY TRANSPLANT FROM A VENDOR

The report by Horvat et al. also seems to be selective in the Discussion section regarding the vendor donor, citing the program in Iran and concluding that there are lessons to be learned from ‘nations with successful wait list management [that] may serve as a model.’ However, the authors provide no direct information regarding the Iranian wait list. Further, the report by Horvat et al. overlooks the experience in neighboring Pakistan and the exploitation that is the reality of organ markets. Nations with ‘successful wait list management’ should include the following kinds of data if the program is to serve as a model and the data registry is to be comprehensive:

(i) How many end-stage renal disease patients die (for example, in Iran) each year without gaining access to the list;
(ii) The impact of the vendor kidney model on living related kidney transplantation in that country;
(iii) The impact of the live-vendor program on deceased donation of hearts and livers and other extra-renal organs not readily obtainable from a live donor.

Among those who wish to present a vendor model as the ideal solution, some also suggest that the program should be ‘regulated.’ A component of that regulation is to recommend a fixed price for the vendor. In contrast, the opponents of such markets dispute the possibility of fixing the vendor payment. For example, in Iran, additional payments are made by the recipient’s family to the vendor’s broker that are evidently customary.

THE DECLARATION OF ISTANBUL

ON ORGAN TRAFFICKING
AND TRANSPLANT TOURISM

In 2004, World Health Assembly Resolution WHA57. 18 urged member states to take measures to protect the poor, and vulnerable groups from transplant tourism and the sale of tissues and organs, including attention to the wider problem of international trafficking in human tissues and organs. The WHO has estimated that organ trafficking and transplant tourism account for approximately 10% of organ transplants performed annually around the world. These issues became the subject of a summit convened in Istanbul from 30 April to 1 May 2008 (Figure 1) by the Transplantation Society and the International Society of Nephrology. The result of these deliberations was the Declaration of Istanbul on Organ Trafficking and Transplant Tourism. The consensus achieved at the Istanbul Summit was remarkable. The Istanbul participants emphasized that organ trafficking and transplant tourism should be prohibited because they violate the principles of equity, justice, and respect for human dignity. The Declaration is also clear regarding the consequences of transplant commercialism: ‘Because transplant commercialism targets impoverished and otherwise vulnerable donors, it leads inexorably to inequity and injustice and should also be prohibited. To be effective, these prohibitions must include bans on all types of advertising (electronic and print), soliciting, or brokering for the purpose of transplant commercialism.’

TRANSPLANT TOURISM

The report by Horvat et al. suggests appropriately that organ tourism influences many countries in different ways, but the report does not specify how this influence occurs. The Istanbul Declaration notes the following regarding transplant tourism: Travel for transplantation is the movement of organs, donors, recipients,
or transplantation professionals across jurisdictional borders for transplantation purposes. Travel for transplantation becomes ‘transplant tourism’ if it involves organ trafficking and/or transplant commercialism or if the resources (organs, professionals, and transplant centers) devoted to providing transplants to patients from outside a country undermine the country’s ability to provide transplant services for its own population.11

Not all recipient travel to a foreign country to undergo transplantation is unethical. Travel for transplantation may be acceptable if the following conditions are fulfilled:

For transplantation from a live donor:
(i) The recipient has a dual citizenship, in the country of residence and in the destination country, and wishes to undergo transplantation from a live donor who is a family member in the destination country; or
(ii) The donor and recipient are genetically or emotionally related and wish to undergo donation and transplantation in a country not of their residence to gain access to better health services.

For transplantation from a deceased donor:
(i) Official regulated bilateral or multilateral organ sharing programs exist between or among jurisdictions (countries).

However, travel for transplantation should not result in the denial of organs to people of the destination country because rich people who pay for organs are preferentially cared for, nor should it impede the development of deceased or non-cash-paid live donation in the client country.

THE PREFERENCE FOR THE LIVE DONOR
The data from Cecka cited above also revealed that the outcome of a live-donor transplantation—even unrelated—exceeded the outcome achieved with a deceased donor (half-life of 16 versus 10 years for the deceased-donor transplant).2 Some have used those data to support unethical national practices. This report was filed on the Internet from the Philippines by Dr Enrique Ona: Of the 690 kidney transplants done in the Philippines in 2006, 158 (23%) of these were done for foreign recipients. In 2007, a total of 1046 were done; 536 (51%) of these were done in the 13 private hospitals that strongly objected to and ignored the 10% limit mandated by Philippine Administrative Order. Two important facts on living donors have become established. One, it is safe to be a living kidney donor—one lives a normal life in terms of life expectancy, sexual activity, with no or little danger of a higher incidence of hypertension and albuminuria. Two, recipients with live donors have a significantly longer survival rate, compared to the best matched deceased donors. The above evidence-based medical facts have added to the tremendous demand of patients with ESRD to seek kidney transplantation as early as possible (pre-emptive), to look for a living donor beyond their family circle, and regardless of racial source.12

CARE OF THE LIVE DONOR IS NEEDED
Horvat et al.,1 conclude by suggesting that ‘communication across nations will continue to put living donation into the global context, enhancing the safety and ethical framework of this practice in the decades to come’. This is a worthy objective but is hardly assured by a registry unless there is a prospective commitment. The live donor cannot become the target source of kidney transplantation unless proper follow-up is provided, with the same emphasis of care that is afforded the recipient.13

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The author declared no competing interests.

REFERENCES