

Reimbursing Live Organ Donors for Incurred Non-Medical Expenses: A Global Perspective on Policies and Programs

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Methods to reimburse living organ donors for the non-medical expenses they incur have been implemented in some jurisdictions and are being considered in others. A global understanding of existing legislation and programs would help decision makers implement and optimize policies and programs.

We searched for and collected data from countries that practice living organ donation. We examined legislation and programs that facilitate reimbursement, focusing on policy mechanisms, eligibility criteria, program duration and types of expenses reimbursed.

Of 40 countries, reimbursement is expressly legal in 16, unclear in 18, unspecified in 6 and expressly prohibited in 1. Donor reimbursement programs exist in 21 countries; 6 have been enacted in the last 5 years. Lost income is reimbursed in 17 countries, while travel,

accommodation, meal and childcare costs are reimbursed in 12 to 19 countries. Ten countries have comprehensive programs, where all major cost categories are reimbursed to some extent. Out-of-country donors are reimbursed in 10 jurisdictions. Reimbursement is conditional on donor income in 7 countries, and recipient income in 2 countries.

Many nations have programs that help living donors with their financial costs. These programs differ in operation and scope. Donors in other regions of the world are without support.

Key words: Financing, health policy, living donors, personal, program development, program evaluation

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Introduction

About 27 000 living kidney transplants occur around the world each year, and the number is increasing (1). In addition, about 2000 living donor liver transplants are performed annually (2) and 250 living donor lung transplants have been performed worldwide (3). Living donor kidney transplantation is preferred to deceased donor transplantation or dialysis, as it improves recipient outcomes at a reduced cost to the healthcare system (4). It is estimated that one living kidney donation results in a net increase of 2 to 3.5 quality-adjusted life-years, and a net health care savings of \$100 000 Canadian (5).

Non-medical expenses are frequently incurred by the living organ donor as part of the transplant process (6). These expenses include travel, parking, accommodation, meal and dependent care costs, as well as lost income. One Canadian study estimated that 53% of organ donors incur transportation and parking costs (7). In another American multi-center study, transportation and accommodation costs were reported by 99% and 88% of donors, respectively (8). Lost income has been reported in 14–30% of organ donors, averaging as much as \$4410 Canadian in 2004 (7,9,10). In a single center study involving 133 potential donors to a family member, 24% chose not to donate because of anticipated financial hardship (11).

To ease the financial burden of organ donation, experts advocate reimbursement of legitimate expenses, stating that it is just and ethically responsible, and should be considered a cost associated with treating living organ recipients (12–18). In 2008, the Declaration of Istanbul on Organ Trafficking and Transplant Tourism, the European Parliament, and the Asian Taskforce on Organ Trafficking each issued formal statements urging member states to define conditions in which reimbursement can be granted (12,13,16). All groups make a clear distinction between the acceptable practice of reimbursement of legitimate expenses incurred as a result of the transplant process, and payment resulting in financial gain which is illegal in most jurisdictions.

A comprehensive understanding of existing reimbursement programs would provide a global context for decision makers as they look to implement or refine reimbursement programs within their jurisdictions. The lack of a published comprehensive account of global legislation and practices prompted this review.

Materials and Methods

Data of interest

We considered countries where 10 or more living donations are performed each year, based on an average between 2004 and 2007 as described in the Global Observatory on Organ Transplantation and Horvat et al. (1,2). While reimbursement is implicit in payment programs, we excluded programs where payment is intended for financial gain, as this practice contravenes international recommendations and standards (12,16,19,20).

The data collection plan is presented in Figure 1. We first determined if reimbursement of legitimate expenses was legal in member countries. Based on legislation, the legality of reimbursement was classified into one of four categories: legal, illegal, unclear and unspecified. An example of a reimbursement clause that was interpreted as legal was '[1] A person commits an offence if he [a] gives or receives a reward for the supply of, or for an offer to supply, any controlled material;...[6]... payment in

money or money's worth to the holder of a license shall be treated as not being a reward where [a] it is in consideration for transporting, removing, preparing, preserving or storing controlled material (21)'. We were not able to find a clause that was interpreted as illegal; reimbursement would have been categorized illegal if the legislation clearly stated that reimbursement of expenses incurred during the organ donation process, as opposed to reimbursement for an organ, was prohibited. Unclear legislation did not explicitly address the issue of reimbursement for non-medical expenses, but addressed the issue of organ and/or tissue donation. An example of an unclear clause was 'no person shall buy, sell or otherwise deal in, directly or indirectly, for a valuable consideration, any tissue for a transplant (22)'. Unspecified refers to legislation that did not address the broader subject of organ and/or tissue donation or when the country representative indicated otherwise. Countries with provincial legislation, where provinces differed in their legislation, were counted in all applicable categories. Therefore, the sum of the number of countries across all types of legislation may be greater than the total number of countries.

We then ascertained characteristics of programs that facilitate donor reimbursement, including program history, mechanisms, types of non-medical expenses reimbursed (travel, accommodation, meals, lost income and childcare) and eligibility criteria (Figure 1). We also gathered information on "umbrella" programs, which compensate donors as part of other broader initiatives. Information on national programs was collected for countries with both national and provincial/territorial/state reimbursement initiatives. Countries with provincial programs, where provinces differed in program details, were counted in all applicable categories. Therefore, the sum of the number of countries in each program category may be greater than the total number of countries.

Data sources and collection

Data collection was updated until July 2009. [Correction made after online publication 4 Nov 2009: 2008 changed to 2009] Data were extracted by a single author (MS) from government and ministry websites, legal databases (International Digest of Health Legislation and World Legal Information Institute), and kidney, nephrology and transplantation foundations' websites. Data were independently reviewed for accuracy by a second author (MC). In most cases, information was also collected directly from country representatives by the same single author (MS) in order to obtain English language legislation or to obtain information that was not available from other sources (Appendix A). Country representatives included members of

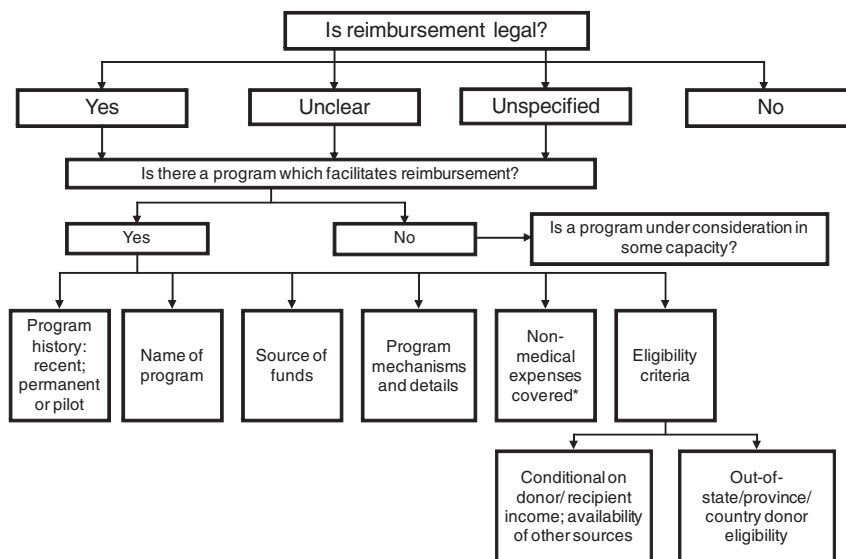


Figure 1. Flow chart of data collected for each eligible country. *Non-medical expenses included travel, accommodation, meals, lost income and childcare.

national kidney, nephrology and transplant foundations, Ministries of Health, and health care providers involved in living organ transplantation. All data that were not collected directly from country representatives were sent to representatives for verification. Legislation that was not available in English was obtained in the native language and translated with the help of a country representative, a translator, Google Translator (translate.google.com) or Yahoo Babel (babelfish.yahoo.com).

Results

One hundred ninety-three countries were considered for this review. One hundred twenty-one countries were excluded: the Global Observatory on Organ Transplantation (2) did not recognize 88 nations as performing living organ donation (LOD); data on the number of LODs per year were missing for 14 countries; all LODs were performed outside of 1 country; a country representative confirmed that LOD was illegal in 1 country; less than 10 LODs were performed per year on average between 2004 and 2007 in 16 countries and a legal payment program had been established in 1 country. In total, 72 countries were eligible. We were able to collect data from 40 (56%) countries. For the remaining 32 nations, data collection was either incomplete due to unavailability of information and/or because the country representative was non-responsive. Data sources for each country are provided in Appendix B.

Of the 40 countries examined, 16 expressly legalize reimbursement, 1 explicitly prohibits any form of compensation, 18 have unclear legislation and 6 are unspecified. Legislation or information on legislation was not available for 2 countries.

Reimbursement programs exist in 21 of the 40 countries; 14 programs in the 16 countries where reimbursement is expressly permitted by law, another 8 programs in the 18 countries where legislation is unclear and 1 in the 6 countries where reimbursement is unspecified (Table 1).

Six of the 21 countries implemented reimbursement programs in the past 5 years (Australia, Canada, New Zealand, Saudi Arabia, the United Kingdom and the United States). Two countries (Israel and Singapore) are in the process of implementing a program that will take effect within the year 2009. Permanent reimbursement programs exist in 20 countries; 2 countries have programs in a pilot phase (USA and Canada). Representatives from 7 countries indicated their reimbursement programs were currently being re-evaluated or improved (Belgium, France, the Netherlands, New Zealand, Saudi Arabia, Switzerland and the United States). Of the 18 countries in which reimbursement is not illegal and no program exists, representatives from 2 countries indicated active pursuit of a donor reimbursement program (Austria and India).

As shown in Table 2, 10 countries have comprehensive programs where 5 major types of costs (travel, accommodation, meals, lost income and childcare) are reimbursed

in some capacity. Most of the 21 countries with programs reimburse some lost income (17 countries), travel expenses (19 countries) and accommodation (17 countries). A smaller number of countries reimburse meals (14 countries) and childcare costs (12 countries). Out-of-province/state/country donors are eligible for reimbursement in 10 jurisdictions. Reimbursement is conditional on donor income in 7 countries, and on recipient income in 2 of these countries (Bolivia and the United States). In one country (Bolivia) the recipient and donor have the option to meet with a lawyer to negotiate the type and amount of reimbursement to be granted the donor by the recipient; this can include travel, accommodation, meal and other postsurgical expenses (Table 2).

Health care travel assistance programs exist in some countries, providing financial assistance to all types of patients including living organ donors. For example, a program in Australia reimburses donors for travel, accommodation and meals (Travel Reimbursement Policy offered by Western Australia Country for Health Services). Programs in Canada reimburse similar costs (Canadian Medical Transportation Assistance Program in Newfoundland and Labrador; Northern Health Travel Grant in Ontario) (Tables 2 and 3).

Countries have differing sources of funding for reimbursement; some countries have multiple sources. In 15 of the 20 countries with programs, reimbursement is at least partially government funded. In 5 countries, lost income can be covered in some capacity by the donor's employer through sick leave, paid leave and/or employment insurance (Belgium, Canada, Czech Republic, the United Kingdom and the United States). In 3 countries donors receive reimbursement from charity organizations (Canada, the Philippines and Saudi Arabia). Funds are available through the recipient's health/sickness insurance in 4 countries (Germany, Netherlands, Switzerland and Turkey). In Bolivia, where the recipient and donor can meet with a lawyer to agree upon donor reimbursement, the recipient may be responsible for reimbursing the donor (Table 3). Similarly, in Singapore, the recipient may choose to reimburse the donor and those who are unable to afford reimbursement may be referred to volunteer welfare organizations for assistance (Table 3).

Programs and policies in specific jurisdictions

The United States' National Living Organ Donor Assistance Program (NLODAP) is a 4-year pilot program (commenced in October 2007), that is unique in the way it determines which donors are eligible for compensation. This program considers both donor and recipient income and classifies each donor into one of four categories based on financial need. Preference is given to low-income donors with low-income recipients; donors are ineligible for reimbursement when donor and recipient have incomes greater than 300% above the poverty line. An additional distinguishing feature of the NLODAP is that it provides donors with a prepaid

Table 1: Global non-medical expense reimbursement: legislation

Country	Province/territory/state/region	Reimbursement coverage in legislation (legal, unspecified, illegal)	Does a reimbursement program exist?
Australia	Australian Capital Territory	Legal	No
	New South Wales	Legal	No
	Northern Territory	Legal	No
	Queensland	Unclear	No
	South Australia	Legal	No
	Tasmania	Legal	No
	Victoria	Legal	No
	Western Australia	Legal	Yes
Austria		Unspecified	No
Bangladesh		N/A	No
Belgium		Legal	Yes
Bolivia		Unclear	Yes
Bosnia and Herzegovina		Unspecified	No
Brazil		Unclear	No
Canada	Alberta	Unclear	Yes
	British Columbia	Unclear	Yes
	Manitoba	Legal	Yes
	New Brunswick	Unclear	Yes
	Newfoundland and Labrador	Unclear	Yes
	Northwest Territories	Unspecified	Yes
	Nova Scotia	Unclear	Yes
	Ontario	Unclear	Yes
	Prince Edward Island	Unclear	Yes
	Quebec	Unspecified	N/A
	Saskatchewan	Unclear	Yes
Chile		Legal	Yes
Czech Republic		Unclear	Yes
Denmark		Legal	Yes
Ecuador		Unclear	No
France		Legal	Yes
Germany		Unclear	Yes
India		Legal	No
Israel		Legal	Yes
Italy		Unclear	No
Japan		Unspecified	No
Jordan		N/A	No
Kuwait		Illegal	No
Libya		Unclear	No
Malaysia		Unclear	No
Netherlands		Legal	Yes
New Zealand		Unclear	Yes
Norway		Legal	Yes
Philippines		Unclear	Yes
Poland		Unclear	No
Romania		Unspecified	No
Saudi Arabia		Legal	Yes
Singapore		Legal	Yes
South Africa		Legal	No
Spain		Unclear	No
Sweden		Unclear	Yes
Switzerland		Legal	Yes
Syria		Unspecified	No
Taiwan		Unclear	No
Turkey		Unclear	Yes
United Kingdom		Legal	Yes
United States		Legal	Yes
Venezuela		Unclear	No

N/A = data not available.

Table 2: Global non-medical expense reimbursement programs: coverage and program details

Country	Province/ territory/state/ region/(program)	Non-medical expenses covered						Reimbursement is dependant on			Out-of- province/ state/ country donors eligible
		Travel	Accommodation	Meals	Lost income	Childcare	Donor income	Recipient income	Availability from other programs ¹	Program in pilot phase	
Australia	Western Australia	Yes	Yes	Yes	No	No	No	No	Yes	No	No
Belgium		No	No	No	Yes	No	No	No	Yes	No	No
Bolivia ²		Yes	Yes	Yes	No	No	Yes	Yes	N/A	No	N/A
Canada	British Columbia	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes
	Manitoba	Yes	Yes	Yes	Yes	Yes	TBD	No	TBD	No	No
	New Brunswick	Yes	Yes	Yes	Yes	Yes	N/A	N/A	N/A	No	Yes
	Newfoundland and Labrador	Yes	Yes	Yes	No	No	No	No	Yes	No	No
	Northwest Territories	Yes	Yes	Yes	No	No	No	No	Yes	No	No
	Nova Scotia	Yes	N/A	N/A	N/A	N/A	Yes	N/A	Yes	N/A	N/A
	Ontario	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes
	Prince Edward Island	Yes	No	No	No	No	N/A	No	N/A	No	Yes
	Quebec	Yes	No	No	No	No	Yes	No	N/A	N/A	N/A
	Saskatchewan	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No
Chile		No	No	No	Yes	No	No	No	No	No	No
Czech Republic		Yes	No	No	Yes	No	No	No	Yes	No	No
Denmark		Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes
France		Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes
Germany		Yes	Yes	Yes	Yes	Yes	No	No	N/A	No	Yes
Israel		Yes	Yes	Yes	Yes	Yes	Yes	N/A	Yes	No	N/A
Netherlands		Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes
New Zealand	(Live Organ Donors Welfare Program) (National Travel Assistance Program)	No	No	No	Yes	Yes	No	No	No	No	No
Norway		Yes	Yes	Yes	No	No	No	No	Yes	No	No
Philippines		Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes
Saudi Arabia		Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Singapore		Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes
Sweden		Yes	Yes	Yes	Yes	Yes	Yes	No	TBD	No	Yes
Switzerland		Yes	Yes	Yes	Yes	Yes	Yes	No	N/A	No	Yes
Turkey		Yes	No	No	No	No	No	No	N/A	No	No
United Kingdom		Yes	Yes	No	Yes	Yes	No	No	Yes	No	Yes
United States		Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No

N/A = data not available; TBD = to be determined.

¹ Other sources refers to other sources of reimbursement, such as sickness insurance or travel expense programs.

² Recipient and donor may consult with a lawyer to determine whether the donor will cover all medical and pharmacological expenses. See Table 3.

Table 3: Summary of non-medical expense reimbursement opportunities

Country	Province/territory/ state/region	Name and type of program	Source of funds	Program mechanisms and additional details
Australia	Western Australia	Western Australia Country Health Service (WACHS)	Government	Donors must provide travel and accommodation receipts, along with supporting taxation receipts and documentation. Escort expenses are not reimbursable. Only Western Australia residents traveling to Perth are covered.
Belgium		Umbrella program	Government and employer	Only lost income is covered. During the first month of incapacity, 100% of the donor's salary is paid by the employer. After the first month, 60% of the lost income is covered by insurance/mutuelle. All citizens have a 'mutuelle' which provides reimbursement for medications, hospitalizations and operations.
Bolivia		No formal program	Recipient	The recipient and donor have the option to meet with a lawyer to negotiate the type and amount of reimbursement to be granted the donor by the recipient; this can include travel, accommodation, meals and other postsurgical expenses This is possible only when transplant is done at private center. There is no government involvement during this process.
Canada	Alberta	No formal program	Charity (Hope Air)	Social workers work with Hope Air to assist with air transportation expenses; they also attempt to facilitate financial support through various charitable organizations.
	British Columbia	Living organ donor expense reimbursement program	Government, pharmaceutical companies and health charity (Kidney Foundation of Canada)	Two-step process: (1) predicted expenses are submitted for preapproval, (2) expense claim forms and receipts are submitted following surgery and assessment stages.
	Manitoba	TBD	Government and health charity (Kidney Foundation of Canada)	TBD
	New Brunswick	No formal program	Government and charities	All transportation, meal and accommodation expenses are reimbursed, provided receipts. Donor out-of-pocket expenses are submitted to the Provincial Donor Coordinator who recommends reimbursement to the Department of Health and Wellness Hospital Services Branch. Social workers assess the donor's need for other types of expenses.
	Newfoundland and Labrador	Umbrella program	Government	The Medical Transportation Assistance Program states that donors are required to pay medical and travel expenses out-of-pocket and subsequently apply for reimbursement of allowable expenses. Expenses are assessed based on travel dates in relation to medical appointment/service date(s). Applicants must provide receipts and boarding passes for air travel for eligible expenses.
Canada	Northwest Territories	Umbrella program	Government	The Medical Travel Assistance Policy states that travel must originate in the NWT and health care must not be available within the resident's home community. A co-payment fee is required for every round-trip.

Continued.

Table 3: Continued

Country	Province/territory/ state/region	Name and type of program	Source of funds	Program mechanisms and additional details
	Nova Scotia Ontario	No formal program Program for reimbursing expenses of living organ donors	Charity (Hope Air) Government and employer	Charitable help is available. The program is a last resort for donors. Donors apply for reimbursement through the Trillium Gift of Life Network, administering the program on behalf of Ministry of Health and long-term care. For lost income, the donor is expected to apply for reimbursement from his/her employer and employment insurance before applying to PRELOD.
		Northern Health Travel Grant		The Northern Health Travel Grant defrays transportation costs for residents of Northern Ontario who must travel long distances within Ontario or Manitoba to receive health care services not available locally; applicants must apply for reimbursement, and must live at least 100 km from the nearest facility.
	Prince Edward Island	No formal program	Government and charity	Any reimbursement, above travel expenses, is generally provided for donors with financial issues and is provided by non-governmental sources, through the help of social workers.
	Saskatchewan	Umbrella program	Employer	An agreement is made between the donor and his/her employer for paid leave during transplant process.
		No formal program	Charity (Kinsmen Foundation)	Social workers contact charitable organizations to check availability of funds, and the donor's suitability for assistance.
Chile		No formal program	Government and private system	All donors receive reimbursement for time away from work. Donors must apply before the transplant surgery or up to 48 h after transplant surgery, and physician signature is required.
Czech Republic		No formal program	Government, recipient health insurance and employer	Donors receive a social security payment to substitute lost income during hospitalization. Travel expenses are covered by recipient health insurance. Recipients must apply for reimbursement. Out-of-country donors may be eligible with prior approval. Minimal salary loss is covered by employer.
Denmark		Reimbursement included in health care system	Government	Expenses are estimated and paid by the hospital; the hospital is then reimbursed by government. The system for reimbursement was expanded in 2003 to cover a reasonable amount of medical examinations postdonation.
France		Reimbursement included in health care system	Government	The health care establishment reimburses the donor and is then reimbursed by social security public insurance. There is no maximum amount reimbursable; most reasonable expenses are covered. A new decree is in preparation and will be published by 2009; substantial changes will be implemented, including the shift of the payer role to national or regional social security instead of the healthcare establishment.

Continued.

Table 3: Continued

Country	Province/territory/ state/region	Name and type of program	Source of funds	Program mechanisms and additional details
Germany		No formal program	Recipient Health Insurance	Travel, accommodation and some lost wages are automatically covered by the recipient's health insurance. Travel abroad is covered along with medical costs through health insurance and sickness benefits under the national social security program. Lost income is partially reimbursed by the recipient's employer as sick leave; a new proposal has been submitted to standardize reimbursement for loss of income.
Israel		Umbrella program Organ Transplant Bill: Financial Compensation Package and a series of benefits	Government	Expenses are reimbursed via a compensation package that depends on donor income. This is in addition to a series of other benefits (recovery of expenses for psychological treatment, recovery leave, merit certificate from State and free entrance to nature reserves and national parks).
Netherlands		No formal program	Government and recipient sickness insurance	The Dutch Kidney Foundation is awarded a grant from the Dutch Ministry of Health, Welfare and Sport. Any donor can apply for reimbursement through the Kidney Foundation before or after expenses are incurred. Lost income is also repaid through this program for a maximum of 6 weeks, in case of severe complications it can cover up to 12 weeks. Reimbursement of all non-medical costs not covered by sickness insurance is provided by the government.
New Zealand		Live Organ Donors Welfare Programme and Ministerial Direction	Government	Reimbursement is tax free and subject to limits. Donors must apply to District Health Board. Payments are made directly to the donor's bank account with proof of lost income and dependents' birth certificates. Donors are eligible for reimbursement for expenses incurred during the 12 weeks posttransplant surgery.
		Umbrella Program; National Travel Assistance Scheme (NTAS)	Government	A completed claim form is required for reimbursement, along with itemized receipts. Some accommodation expenses may be covered by District Health Board. Support person costs may be covered.
Norway		Reimbursement included within healthcare system	Government	Recipients apply for reimbursement with proof of expenses. There is no maximum amount reimbursable, provided that expenses are documented and within reason.
Philippines		Private foundation offers compensation package	Transplantation Foundation of the Philippines	The Transplantation Foundation of the Philippines reports rejecting offers from potential organ donors seeking to 'sell' an organ. The total reimbursement package is fixed. The donor must apply to the Foundation.

Continued.

Table 3: Continued

Country	Province/territory/ state/region	Name and type of program	Source of funds	Program mechanisms and additional details
Saudi Arabia		New Organ Donation law offers compensation package	Government and Prince Fahd Bin Salman Charity	Saudi riyals may be reimbursed and awarded the King Abdul Aziz medal of the third degree and a discount card with Saudi airlines. SCOT (a governmental agency) coordinates the dispensing of incentives with the ministry of health. Donors can decline the incentive. The reimbursement committee meets with the unrelated living donor and interviews him at least 3 times to make sure that he is donating out of his conscience and with complete willingness, not out of poverty, need or pressure. The Prince Fahed Ibn Salman Charitable Society has the right to supervise reimbursement.
Singapore		No formal program	Recipient, and voluntary welfare organizations	Donor may be reimbursed for donation related expenses such as travel, accommodation, medical and surgical, loss of income and miscellaneous expenses such as eldercare and childcare. Recipients who cannot afford to reimburse their donor can be referred to voluntary welfare organizations for assistance.
Sweden		No formal program; Reimbursement is provided by the healthcare system	Government	Donors must apply for reimbursement, providing receipts of expenses, and proving loss of income. Reimbursement is facilitated by social workers. Expenses are paid for out-of-pocket by the donor and the donor is then reimbursed. All costs are reimbursed if proper documentation is provided.
Switzerland		No formal program	Recipient Health Insurance; Health care system	Reimbursement is administered by the association of medical insurance. All expenses within reason are reimbursable.
Turkey		No formal program	Recipient's Social Insurance	The donor's physician must provide a sickness report for the donor in order for the donor to receive reimbursement for transportation as well as accompanying person expenses through the recipient's social insurance. Accommodation and meals outside of hospital are not covered.
United Kingdom		Formal department of health policy on reimbursement for living organ donor expenses	Government and employer	Expenses are covered by the donor out-of-pocket; the donor is then reimbursed. Donors must claim expenses before expenses are incurred, within 12 weeks of surgery. Personal expenses are repaid in full once receipts are provided. Mileage can be reimbursed at the standard National Health Service rate. Payments are not subject to tax liability. Tax liability for loss of earnings depends on the employment status of the donor. Payments for loss of earnings are legal under the HOT Act but the method of payment and position with respect to any tax liability depends on the employment status of the individual.

Continued.

Table 3: Continued

Country	Province/territory/ state/region	Name and type of program	Source of funds	Program mechanisms and additional details
United States		National Donor Assistance Program	Government and employer	Donors must apply online before expenses are incurred. A review committee then votes on the eligibility of the donor. Escort expenses are reimbursable. The maximum number of donors per recipient for reimbursement is 3 for kidney, 5 for liver and 6 for lung donations. Amount of reimbursement depends on the amount of reimbursement received from other sources, such as employment insurance policies.

TBD = to be determined.

credit card for use during the donation process, instead of reimbursing costs that have already been incurred.

Reimbursement programs exist in many European countries. In France and Denmark, reimbursement of expenses is required for all donors undergoing a live organ transplant; hospitals automatically reimburse donors and are subsequently reimbursed by the government.

Donor reimbursement programs are less common in South America (23).

Saudi Arabia and Israel both offer a series of benefits to ensure that donors do not suffer as a result of their donations. Saudi Arabia provides long-term medical insurance to aid donors with future medical care. Israel will supply donors with insurance against the loss of ability to work or loss of earning power as well as life insurance so that these benefits remain affordable after surgery. Rewards of non-monetary value are offered as well, such as a discount on Saudi Airlines or free entrance to national parks in Israel. If needed, Israel will also cover psychologist expenses to ensure that donors make a full recovery after surgery. Finally, in both Israel and Saudi Arabia, a modest financial package that depends on donor income will be provided to reimburse all donors for their non-medical expenses such as lost income, lost days of sick-leave and travel expenses.

Reimbursement programs are sparse across Asia. However, in Singapore, an amendment to the Human Organ Transplant Act, allowing reimbursement of reasonable expenses in relation to organ donation, was recently passed. The new law allows recipients to reimburse donors for their incurred medical and non-medical expenses. In addition, in India, living donor benefits have been recommended by the Transplant of Human Organs Act (THOA) review committee. Existing THOA law permits compensation for the loss of wages but it is not practiced since the same could be interpreted as sale or purchase of organs. The National Organ Transplant Program is in the process of

being implemented; coverage of medical expenses and medical insurance for the donor, as well as travel concessions on Indian railways, are under consideration for the program.

Discussion

This is the first comprehensive review of global legislation and procedures to reimburse living organ donors for their financial costs. Living organ donor reimbursement programs have recently been introduced in many countries, in some cases as a pilot project. In other countries *de novo* programs are under development. Many programs differ in their operation, funding source and expenses reimbursed. We described existing programs, funding sources, eligibility criteria and categories of donor cost that are reimbursed.

In most reimbursement programs, non-medical expenses are paid directly or indirectly (via health care) from government sources. Some programs rely on charities and employers; very few programs rely on the recipient (either through direct payment or through health care insurance). Almost half of the reimbursement programs are comprehensive in that they cover the 5 major types of non-medical expenses (travel, accommodation, meals, lost income and childcare). For the countries with comprehensive reimbursement, donors in 8 countries can apply through one source to receive reimbursement. Of the 6 programs that were initiated in the last 5 years, 2 are comprehensive. We were unable to determine if all costs incurred by living donors were reimbursed through existing programs.

Limitations of our review merit discussion. As for all reviews of this type, the accuracy of the results is highly dependant on the quality of the data collected. We compiled data from 40 of the 72 countries eligible for review. Despite repeated attempts we were unable to obtain information for 32 of the 72 countries that practice living

donation, such as Columbia, Cyprus and Georgia. However, this may not materially impact the results presented, as we believe it is reasonable to assume such countries do not have reimbursement programs.

We did not collect information on monetary values for reimbursement. A paper focusing solely on program details would be the ideal setting in which to collect and present such data.

The data acquired from the 40 countries were derived from a variety of sources, as a single source for international legislation and information on reimbursement programs does not exist. Information obtained for this review was at risk for being outdated, biased or untranslatable. To address these deficiencies, we undertook the additional step of contacting country representatives to confirm the accuracy of the data. Information obtained from country representatives, however, may be subject to bias and is directly limited by the individual's experience in living organ donation. In some countries, multiple complex opportunities for reimbursement exist, including programs beyond the sphere of transplantation (18). We provided generalizations of these opportunities to allow for broader comparisons across countries. We could not determine whether donors had difficulties accessing current programs, nor to what extent programs reimbursed incurred donor costs. The degree to which reimbursement programs improve satisfaction with the transplant process, and transplant rates, remains the subject of further research.

In summary, this review provides a comprehensive overview of legislation and practices of living organ donor reimbursement worldwide. Many programs have recently been enacted, and several nations are considering implementing *de novo* reimbursement programs. Despite this, most living organ donors worldwide lack organized programs to defray the costs of the donation process. This summary will allow decision makers and transplant professionals to frame current programs in the global context, and will aid development and refinement of optimal reimbursement policies. Given the emerging practice of living organ donor reimbursement, it may be prudent for countries that expressly prohibit reimbursement to reassess current legislation in light of global practices and current international recommendations. It is our hope that the information presented here can be used to assist those countries yet to develop local programs, and refine existing programs.

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Supporting Information

The following supporting information is available for this article online:

References 24–46.

Appendix A is a table including information on country legislation name, availability, details and source of legislation. Appendix B is a table with information on sources of country-specific data; these sources include online references and country representatives.

Appendix A. Table of country legislation name, availability, details and source.

Appendix B. Sources of country-specific information: online references and country representatives.

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