

COMPENSATION FOR LIVE DONORS

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ABOUT THE AUTHOR



Elizabeth holds a Master's degree in Economics from the University of Canterbury. Her thesis work examined the legal and institutional framework governing organ donation, modelled the cost-effectiveness of kidney transplantation against dialysis, and evaluated policies for improving donation rates. Elizabeth holds Bachelors' of Law and Commerce from the University of Canterbury and is admitted as a Barrister and Solicitor of the High Court. She is currently an Associate at the Macquarie Group in Sydney.

COMPENSATION FOR LIVE DONORS

FOREWORD

Most of the time, policy is about trade-offs. Policies that improve outcomes for one group typically impose costs on somebody else. We do not have too many real-life policies that are truly win-win.

Fixing New Zealand's rules around organ transplant might just be one of those rare opportunities.

Elizabeth Prasad's report on New Zealand's organ transplant regime shows how the government can save and improve lives, while saving money in the process. The Ministry of Health provides dialysis services to more than 2,500 patients at an average annual cost of more than \$60,000 each. It is expensive for the health system, and it is not fun for the patient, with dialysis being time consuming and physically draining.

Kidney transplants are not cheap either, but are far better for both the patient and the health system's budget over the longer term. Prasad estimates that each additional living donor transplant saves the health system about \$125,000. Transplant recipients also have a much longer life expectancy and a strongly improved quality of life. But the waiting list for kidneys is long and most patients will die before getting one.

Live kidney donation can help alleviate this shortage. Humans have two kidneys each and donating one is relatively safe. If we were to compare this to other risks people take, it is slightly riskier than deciding to be a farmer for a year, and much less risky than deciding to work on a commercial fishing boat.¹

¹ For data on transplant safety, see Gary S. Becker and Julio Jorge Elías, "Introducing Incentives in the Market for Live and Cadaveric Organ Donations," *Journal of Economic Perspectives* 21:3 (2007), 3–24. The authors also survey the literature on donors' post-transplant outcomes.

But donating is not zero risk. And, at least as importantly, it is expensive for the donor, who needs to take time off work for pre-operation consultation, surgery and recuperation.

Work and Income currently provides financial support for donors covering up to 12 weeks' lost income, but at a maximum weekly payment of \$210.¹³ for single adults and \$350 for a married adult.² Average weekly income in 2014 was \$991.

Donating a kidney saves the health system more than \$100,000, but can leave the donor at a substantial financial loss. We are effectively taxing donors for improving others' lives and providing substantial savings to the health system. Does this make sense?

Prasad began this work as an Honours project with me at the University of Canterbury, and expanded it into her Master's thesis. Her full thesis discusses the various options available for increasing organ donation rates, but among the most promising is encouraging more transplants from live donors. She shows how the new Israeli priority system has helped to increase living donation rates from 71 in 2010 to 149 in 2014. Live donors are not just compensated for lost earnings but they also receive a guarantee that, should they themselves ever need a transplant in the future, they will have a priority position in the transplant queue. Donors then need not worry as much about what might happen in the rare event that their remaining kidney fails.

Prasad's report strongly suggests that the government should enhance the compensation provided to live organ donors. Deciding to donate a kidney or liver lobe is heroic. Forcing those donors to be substantially out of pocket for their troubles demands too much of them, especially when their decision to donate ultimately saves the Ministry of Health a lot of money.

Further, the Israeli case study suggests that New Zealand could increase its live donation rate by making the donation decision less costly for donors. There are limitations to the Israeli case. At the same time as Israel provided greater compensation to its donors and provided them with priority access to organs should they ever be in need, it also made it more difficult for Israelis to go abroad for organ transplants. Some of the increase in live donation rates would then be due to Israelis seeking help from a friend or a loved one where previously they would have gone overseas.

But while the restriction on seeking transplants abroad would have affected the domestic need for transplants, fewer Israelis could have afforded to make that gift without the enhanced compensation provided and the priority regime. Further work by American economists Gary Becker and Julio Elías, cited by Prasad, strongly suggests that organ donation rates would increase with enhanced compensation for live donors.

Prasad has very clearly established that more transplants would save lives, improve lives, and save the Ministry of Health money that could be put to other life-saving uses. The data also suggests that compensating donors for their gift, so that they are not out of pocket for the time they need to spend in recuperation, would both increase donation rates and constitute a trivial fraction of the savings the Ministry of Health enjoys whenever someone does make the gift of life. Even compensation of 12 weeks' earnings at the average wage would be less than 10% of the savings enjoyed by the Ministry of Health with each transplant.

I believe New Zealand could save both lives and money by strengthening the compensation provided to live organ donors while guaranteeing those donors that, should they ever be in need of a transplant, they will not find themselves at the back of the queue.

I also believe it is the right thing to do. Our donors are already heroes. Asking them also to bear a substantial financial cost for their gift, when every other person involved in the transplant process, from surgeons to consultants and through to the janitorial staff, does not, asks too much of them.

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² Work and Income, "Financial assistance for live organ donors," brochure (Wellington: Government of New Zealand, 2014).

ORGAN DONATION IN NEW ZEALAND

The most recent data ranks New Zealand's living and deceased organ donation rates 19th and 38th, respectively, out of 61 countries.³ Only 47% of driver's license holders have selected organ donor status,⁴ and approximately 50% of families decline to permit organ donation when approached.⁵ Consequently,

in 2013, 351 of the 2,584 dialysis patients in New Zealand died while only 115 received transplants.⁶ No study has been done in New Zealand to determine public opinion on organ donation, but surveys in Australia and the United States have found approval rates between 80 and 90%.⁷

Assuming that New Zealanders hold similar views, there is a huge discrepancy between approval of organ donation and the number of actual donors. A more generous compensation scheme for live donors could go some way towards closing this gap.

THE CASE FOR COMPENSATING LIVE ORGAN DONORS

At present, any financial compensation for live organ donation within New Zealand is prohibited, but appropriate compensation by the state to donors can help save both lives and money. Kidney transplant is that rare case of a win-win treatment; it is both cheaper and more effective than the alternative: dialysis.

Dialysis and transplant services are provided entirely by the Ministry

of Health in New Zealand. A kidney transplant can save the government more than \$100,000 over the course of a patient's lifetime. Being more financially generous to live organ donors could thus lead to more organs made available for those in need, and save the public health system millions of dollars.

The cost-effectiveness of transplantation has been proven in multiple international studies.⁸

The National Renal Advisory Board (NRAB) advocates transplantation as "the treatment of choice for all medically suitable patients".⁹ Self-reported assessments given by transplant patients are significantly better than those by dialysis patients for both physical and psychological measures of quality of life.¹⁰ Clearly, incentives are required to increase the number of organs available for transplant.

³ International Registry in Organ Donation and Transplantation, Website (Barcelona: IRODaT, 2014).

⁴ Organ Donation New Zealand, "Organ and Tissue Donation and Transplantation in New Zealand" (Auckland: ODNZ, 2007).

⁵ Jennifer J. Howard, "Fatal Flaws: New Zealand's Human Tissue Act," *Pacific Rim Law & Policy Journal* 22:1 (2013), 209–236.

⁶ ANZDATA, 2014, cited in Prasad, E., "The Cost of Prohibition: The Law and Economics of New Zealand's Organ Transplant Regime," Master's of Commerce Thesis, University of Canterbury (2015).

⁷ Ibid.

⁸ Wolfgang, C. Winkelmayer, et al. collated the results of 13 cost-effectiveness studies from the United States, the United Kingdom, Sweden, Canada, the Netherlands, Brazil, and New Zealand and published them between 1968 and 1998. The cost of hospital-based haemodialysis ranged from US\$55,000 to US\$80,000 per life year saved (LYS). Haemodialysis performed in the home fell between US\$33,000 and US\$50,000 per LYS, and transplantation tended to cost US\$10,000 per LYS. Wolfgang, C. Winkelmayer, Milton C. Weinstein, Murray A. Mittelman, Robert J. Glynn and Joseph S. Pliskin, "Health Economic Evaluations: The Special Case of End-Stage Renal Disease Treatment," *Medical Decision Making* 22:5 (2002), 417–430. In New Zealand, B.E. Croxon and T.A. Ashton estimated the respective costs per LYS in 1988 to be \$35,270 for in-hospital haemodialysis; \$28,175 for home haemodialysis; \$26,390 for continuous ambulatory peritoneal dialysis (a form of continuous dialysis self-administered by the patient at home); and \$18,463 for transplants. B.E. Croxon and T.A. Ashton, "A Cost Effectiveness Analysis of the Treatment of End Stage Renal Failure," *The New Zealand Medical Journal* 103:888 (1990), 171–174.

⁹ National Renal Advisory Board, "Access to Renal Replacement Programmes in New Zealand" (Wellington: NRAB, 2009), 3.

¹⁰ Saša Perović and Slobodan J. Perović, "Renal Transplantation vs Hemodialysis: Cost-effectiveness Analysis," *Vojnosanitetski pregled: Military-medical and Pharmaceutical Review* 66:8 (2009), 639–644.

THE COST OF SHORTAGE

Renal transplants are the most common form of organ transplant, accounting for 65% of all transplants in 2013.¹¹ Approximately half of all renal transplants are from living donors, with the vast majority of these donations coming from relatives and friends of patients.¹² As at 31 December 2013, there were 2,584 dialysis patients in New Zealand. The total number of renal transplant surgeries performed in 2013 was 115, while 351 patients on dialysis died.¹³

Chronic kidney disease (CKD) is a significant and expanding problem for the New Zealand health care system, mainly due to the rapidly increasing incidence of diabetes.¹⁴ Stage 5 CKD is termed End-Stage Renal Disease (ESRD), a state of permanent kidney failure. ESRD patients require Renal Replacement Therapy (RRT), either as ongoing dialysis treatment or renal transplant.

According to Organ Donation New Zealand, approximately 350 individuals are on the waiting list for a renal transplant. To be placed on the transplant list, a patient must have a predicted 80% chance of five-year survival post-transplant.¹⁵ An algorithm is used to determine who receives a deceased donor kidney

based on the age of the patient, the length of time the patient has been receiving dialysis, and whether the patient needs another organ.¹⁶ Therefore, the waiting list does not reflect the total number of individuals who would benefit from a renal transplant.

COST OF DIALYSIS TO THE MINISTRY OF HEALTH

The different types of dialyses, or modalities, vary according to where and how the treatment is administered. Haemodialysis uses an artificial kidney machine to mitigate a patient's loss of kidney function, and can be done in a hospital setting, an outpatient facility, or the patient's home.

It needs to be performed at least three times a week, with each session lasting several hours. Peritoneal dialysis requires inserting dialysing fluid into the peritoneal cavity in the patient's abdomen. The fluid captures waste products and is then drained and replaced. This can be done using a machine (Automated Peritoneal Dialysis or APD) or manually at regular intervals during the day (Continuous Ambulatory Peritoneal Dialysis or CAPD). Peritoneal dialysis is done by the patient at home.

The cost of treatment varies across modalities, but the Ministry of Health funds all treatments through payments to District

Table 1: Annual per patient cost of dialysis

Modality	Annual cost	Proportion of patients receiving modality
Haemodialysis (Hospital)	\$82,649.21	0.34
Haemodialysis (Satellite)	\$61,901.45	0.16
Haemodialysis (Home)	\$43,157.03	0.19
Peritoneal dialysis	\$47,049.32	0.31
Weighted average cost per patient	\$60,790.09	

Source: Auckland Regional Renal Project (2003–04)

Note: Similar estimates have been confirmed in unpublished data.¹⁷ Figures have been updated to 2014 values using the Reserve Bank of New Zealand inflation calculator. The proportion of patients receiving each modality of treatment was obtained from ANZDATA (2014).¹⁸

¹¹ Organ Donation New Zealand, *Annual Report 2013* (Auckland: ODNZ, 2014).

¹² J. Martin, G. Hart and P. Hicks, "A Unique Snapshot of Intensive Care Resources in Australia and New Zealand," *Anaesthesia and Intensive Care Journal* 38:1 (2010), 149–158.

¹³ ANZDATA, *37th Annual ANZDATA Report (2014) Final Summary* (Adelaide: Australia and New Zealand Dialysis and Transplant Registry, 2014).

¹⁴ Kirsten J. Coppell, et al., "Prevalence of Diagnosed and Undiagnosed Diabetes and Prediabetes in New Zealand: Findings from the 2008/09 Adult Nutrition Survey," *New Zealand Medical Journal* 126:1370 (2013), 23–42.

¹⁵ Nick Cross, Ian Dittmer and Philip Matheson, *Policy for Use of New Zealand Survival After Kidney Transplant Predictor System in Patients Assessed for Deceased Donor Transplantation in New Zealand Version 1.0* (Auckland: New Zealand Renal Advisory Board, 2012).

¹⁶ Ian Dittmer, *New Zealand Kidney Allocation Scheme* (Auckland: National Renal Advisory Board, 2013).

¹⁷ Ibid.

¹⁸ ANZDATA, *37th Annual ANZDATA Report (2014)*, op. cit.

Health Boards (DHBs). The cost also varies between DHBs. While some DHBs purchase machinery outright and provide dialysis directly, others contract the service out to private providers on a price-per-treatment basis. Patient volumes and competition between commercial dialysis providers also affect the total cost, which varies up to 28% between DHBs.¹⁹

The weighted average per patient cost of dialysis is \$60,790.09 per year. In 2013, 2,584 individuals received dialysis in New Zealand, costing the Ministry of Health more than \$150 million.

COST OF RENAL TRANSPLANT TO THE MINISTRY OF HEALTH

DHBs charge one another for the treatment of patients domiciled in the region of one DHB but treated by another. Treatments are given a case weight according to the New Zealand Casemix Framework, which can be multiplied by a unit price to find the Inter-District Flow (IDF) price for the service. Case weights are agreed upon annually by DHBs for the average cost of a certain treatment. Actual costs vary from patient to patient, depending on the severity of the illness and any complications they may have. Case weights are therefore only a proxy for the real cost of a treatment. Dialysis treatments are excluded from the Casemix Framework and therefore cannot be priced the same way.

A standard medical/surgical treatment unit price is determined annually, with the unit price being \$4,681.97 in 2014–15.²⁰ A standard renal transplant without complication or comorbidity is assigned 8.85 case weights.²¹ The price of a standard renal transplant is \$41,448.54, and \$44,412.70 for a more complicated surgery. The cost of follow-up care in the first year is approximately \$21,838.²² Transplants entail an ongoing cost in the form of anti-rejection medication, which patients must take for the rest of their life. The exact combination of medication depends on a patient's individual circumstances, but the approximate cost of \$10,000 per year decreases over time as generic medications replace branded ones. A live donor nephrectomy corresponds to 1.667 case weights, or \$7,804.85. Therefore, a renal transplant from a live donor costs around \$81,091.30.

TRANSPLANT SAVINGS TO THE MINISTRY OF HEALTH

It costs \$280,811.84 to treat a 50-year-old male with dialysis over his expected lifetime, compared with \$157,459.16 if he were given a transplant from a live donor. The recipient can expect to live for over twice as long if he undergoes a renal transplant. Table 2 shows the present value of the costs of each treatment is given over the expected lifetime. The cost of a transplant is just over half the cost

of dialysis. The costs per Quality Adjusted Life Year (QALY) gained from dialysis and transplant are \$82,529.09 and \$14,299.34, respectively.²³ The long-term cost of transplant only begins to exceed that of dialysis when the estimated cost of dialysis is reduced by 40% and the initial cost of transplant is increased by 40%. Transplant provides a significantly lower cost per QALY, which remains lower than that of dialysis even when the cost of transplant is raised by 75%, the cost of dialysis decreased by 75%, and the discount rate raised to 10%. The example of a 50-year-old is used because that is the median age of transplant recipients in New Zealand. For younger patients with longer life expectancies, the benefits of transplant are even greater.

Using the figures from Table 2, we can estimate that each additional living donor transplant saves the Ministry of Health approximately \$125,000 over the course of a patient's lifetime. There were 14.78 live kidney donor surgeries per million population from 2005 to 2014. The estimated savings to the Ministry of Health from increasing this rate by 5, 10 or 20% would be \$412,897, \$825,794 and \$1,651,587, respectively. Note that these values do not account for private financial benefits such as the increased earning capacity of patients who are able to return to the workforce after receiving a transplant.

¹⁹ T. Ashton and M.R. Marshall, "The Organization and Financing of Dialysis and Kidney Transplantation Services in New Zealand," *International Journal of Health Care Finance and Economics* 7:4 (2007), 233–252.

²⁰ Ministry of Health (2014), http://www.health.govt.nz/system/files/documents/pages/wiesnz14_v1.1_updated_april_2014.docx.

²¹ The NCCP Casemix-Cost Weights Project Group, *New Zealand Casemix Framework for Publicly Funded Hospitals Including WIESNZ14 Methodology and Casemix Purchase Unit Allocation for the 2014/15 Financial Year* (Wellington: Ministry of Health, 2014).

²² T. Ashton and M.R. Marshall, "The Organization and Financing of Dialysis and Kidney Transplantation Services in New Zealand," op. cit.

Table 2: Comparison of RRT for 50-year-old male

Treatment	Life expectancy (years)	QALYs	Lifetime costs (7% discount rate)	\$/QALY
Dialysis	55.00	3.4	\$280,811.84	\$82,529.09
Transplant	63.11	11.0	\$157,459.16	\$14,299.34

Source: Author's calculations.²³

AN INCENTIVE FOR LIVING DONORS IN ISRAEL

Like New Zealand, Israel has traditionally had low rates of both live and cadaveric organ donation.²⁴ This has been partially attributed to the refusal of some orthodox religious groups to accept the concept of brain death.²⁵ In a further disincentive to organ donor registration, some individuals who hold these beliefs engage in free-riding by refusing to register as organ donors while accepting donor organs if the need arises.²⁶ This kind of free-riding discourages others from donating. Also, insurance companies used to fully reimburse patients travelling overseas for a transplant, regardless of the source of the organ or the legality of the operation. This is called “transplant tourism”.

In 2008, the legal framework governing organ donation underwent a major overhaul. Two pieces of legislation underpinned this restructure: the *Brain-Respiratory Death Act* and the *Organ Transplant Act*. The *Brain-Respiratory Death Act* was drafted in consultation with medical experts and religious authorities to determine an accepted definition

of, and method for evaluating, brain death. The *Organ Transplant Act* had three main effects: it introduced a priority system for organ allocation, banned both foreign and domestic organ trade, and provided some financial support to living donors. This financial support took the form of the following in-kind transfers:

- Reimbursement of lost wages for 40 days, based on the donor's income for the last three months (or the minimum wage if the donor was unemployed)
- A transportation supplement to cover commuting to and from hospital for donors and their family
- A paid weeklong stay in a recuperation facility
- Reimbursement of medical, work capability loss, and life insurance for five years after donation, and
- Five free psychological consultations.

These provisions aim to offset the costs associated with living donation, and put the donor in the same financial position they would have been had they not donated their organ.

The priority allocation system is unique to Israel. It aims to encourage more people to become organ donors by prioritising organ allocation in the following order:

1. Living donors and first-degree relatives of deceased donors
2. Registered donors of at least three years
3. First-degree relatives of registered donors of at least three years, and
4. Everyone else.

Where the severity of two patients' conditions is the same, the patient who falls into one of the above categories will be given an available organ first. In the case of renal transplant, where a 0–18 point system is used to rank need, being a donor can give a patient an extra 1–3.5 points.²⁷

The short period of time since the full implementation of the new Israeli system makes it difficult to conclusively determine the effectiveness of the changes, but early results are reasonably positive. The priority system came into force fully in April 2012, after a year-long public

²³ From Prasad, E., op. cit.

²⁴ International Registry in Organ Donation and Transplantation, Website, op. cit.

²⁵ Jacob Lavee, Tamar Ashkenazi, Gabriel Gurman and David Steinberg, “A New Law for Allocation of Donor Organs in Israel,” *The Lancet* 375:9720 (2010), 1131–1133.

²⁶ Judd Kessler and Alvine Roth, “Getting More Organs for Transplantation,” *American Economic Review* 104:5 (2014), 425–430.

²⁷ Jacob Lavee, Tamar Ashkenazi, Gabriel Gurman and David Steinberg, “A New Law for Allocation of Donor Organs in Israel,” op. cit.

information marketing campaign. In 2011, the number of deceased donors increased to 89, up from 60 in 2010. This is above the 95% confidence interval for the predicted number of donors in 2011 based on the time trend up until that point.²⁸ The number of newly registered donors also rose significantly. However, it is

difficult to separate the effect of the marketing campaign and the effect of the introduction of the priority framework. The most recent data from 2014 shows 63 actual deceased donors, which is similar to the number of donors before introducing the new laws. More notably, living kidney donation increased from 71 in

2010 to 117 in 2011, probably due to a combination of the decreased opportunity to receive kidneys overseas along with the aforementioned incentives to donate. This increase appears to be more sustained, with 136 live donors in 2013 and 149 in 2014.

NEED FOR BOTH LIVING AND DECEASED DONATION

The finding that transplantation is more cost effective than dialysis accords with international research, and provides an extra reason to encourage the supply of donor organs. For individuals suffering from heart, lung or liver failure, there is no alternative treatment equivalent to dialysis, making the need for donor organs more urgent. Mechanisms to encourage both living and deceased donation are necessary, as most organs can only be provided by deceased donors. However, the majority of organ demand is for kidneys, and kidneys from living donors perform better than those from deceased donors. Many nephrologists believe pre-emptive transplant (administered before the patient needs to receive dialysis) gives the patient the greatest chance of achieving the best health outcomes.²⁹ Therefore,

encouraging living kidney donation should be a priority for policymakers, while noting that deceased donor transplants are still a superior treatment to dialysis.

Another reason living donation needs to be encouraged is that even if all possible deceased donors gave their organs, it would still be insufficient to alleviate the shortage. At present, roughly half of all families of potential donors approached give consent, but well under 50% of organ demand is being met (estimates of the waiting list vary from 400 to 700, but only 176 transplants were performed in 2013). Therefore, even a 100% consent rate would not completely eliminate the shortage.

To be a cadaveric donor, one must typically die in a particular set of circumstances. Most deceased

organ donors died as a result of an intra-cranial haemorrhage (uncontrolled bleeding between the cranium and the brain) or intra-cranial thrombosis (a blood clot in the brain), generally caused by cerebral-vascular accident (a stroke). The former cause is associated with accidents involving head trauma, commonly motor accidents. Due to increased road safety, the percentage of organ donors from fatal vehicle accidents is falling, from 9% in 2009 to 1% in 2013. The fall in motor vehicle accident rates is an encouraging trend, but it has also made the supply of deceased donors limited and unreliable.³⁰ Living donation is needed to bridge the gap. Monetary incentives can encourage living donation, while a priority system incentivises both living and deceased donation.

²⁸ J. Lavee, T. Ashkenazi, A. Stoler, J. Cohen and R. Beyar, "Preliminary Marked Increase in the National Organ Donation Rate in Israel Following Implementation of a New Organ Transplantation Law," *American Journal of Transplantation* 13:3 (2013), 780–785.

²⁹ J. Martin, G. Hart and P. Hicks, "A Unique Snapshot of Intensive Care Resources in Australia and New Zealand," op. cit.

³⁰ For example, Stacy Dickert-Conlin, et al. found that for every three motorcyclists who fatally crash without wearing a helmet, one transplant waiting list death is prevented. Stacy Dickert-Conlin, Todd Elder and Brian Moore, "Donorcycles: Motorcycle Helmet Laws and the Supply of Organ Donors," *Journal of Law and Economics* 54:4 (2011), 907–935.

OTHER RESOURCE CONSTRAINTS

If the supply of donors were to increase significantly at a certain point, other resource constraints would emerge, such as the number of trained transplant surgeons and intensive care unit (ICU) beds available.³¹ New Zealand has 5.5 ICU beds per 100,000 population, which is relatively low compared to Australia (8.9 per 100,000 population).³² There are only a few deceased donors who were not in ICU at the time of their death. Donors who pass

away from uncontrolled cardiac death (as opposed to controlled, where the patient was in an ICU and cardiac arrest was expected) can also provide usable grafts, or non-heart beating donation. Ethical and logistical issues (such as minimising ischaemic time) have kept non-heart beating donations rare.³³ And while donations from such donors have been increasing internationally³⁴, they remain relatively rare in New Zealand.³⁵ More ICU capacity may be needed

to significantly increase deceased donation rates.

As shown above, the difference in cost/QALY between dialysis and renal transplantation is nearly \$70,000. If the additional resources cost anywhere up to this amount per patient, purchasing them would still be more cost-effective than forgoing transplants, while providing significantly improved quality of life to ESRD patients.

CONCLUSION

A combination of policies targeting both living and deceased donation will be necessary to increase organ donation rates to acceptable levels. Additional compensation and organ waiting list priority for live donors are two promising options for increasing the living donor component. These policies will not be enough for everyone to consider becoming an organ donor, but they may be enough to convince those who would like to donate but are hesitant given the time and cost involved. Increasing Living Organ

Donor Assistance payments would be a simple and cost-effective way to ease the burden of organ donation. An equivalent option for encouraging deceased donation is assisting families of deceased donors with funeral expenses. The priority system accords with the intuitive notion that it is only fair to receive if you are willing to give, and provides a non-financial incentive for potential donors.

Some may find the notion of incentivising donors unappealing,

believing we should continue to rely purely on altruism. Disregarding potentially life-saving policies for this reason places a great deal of weight on one's sense of moral repugnance. Altruism is not displaced by proper compensation; there are many paid vocations primarily focused on helping others. Being more generous with organ donors and their families simply recognises the value of their contribution. There is so much to gain if we choose to allow it.

³¹ T. Ashton and M.R. Marshall, "The Organization and Financing of Dialysis and Kidney Transplantation Services in New Zealand," op. cit.

³² J. Martin, G. Hart and P. Hicks, "A Unique Snapshot of Intensive Care Resources in Australia and New Zealand," op. cit.

³³ D. Verran, A. Robertson, J. Chapman and S. Chadban, "Deceased Kidney Donor Suitability Guidelines," *The CARI Guidelines – Caring for Australians with Renal Impairment* (2005).

³⁴ R. Johnson, L. Bradbury, et. al., "Organ Donation and Transplantation in the UK – the Last Decade: A Report from the UK National Transplant Registry," *Transplantation* 97 Suppl 1 (2014), S1-S27.

³⁵ IRODAT shows 6 such deceased donors in 2014. Six of the ten prior years had zero donors who had experienced uncontrolled cardiac death. There were 7 total such donations from 2004–2013.

REFERENCES

- ANZDATA. *37th Annual ANZDATA Report (2014) Final Summary* (Adelaide: Australia and New Zealand Dialysis and Transplant Registry, 2014).
- Ashton, T.A. and M.R. Marshall. "The Organization and Financing of Dialysis and Kidney Transplantation Services in New Zealand," *International Journal of Health Care Finance and Economics* 7:4 (2007), 233–252.
- Becker, Gary, S. and Julio Jorge Elías. "Introducing Incentives in the Market for Live and Cadaveric Organ Donations," *Journal of Economic Perspectives* 21:3 (2007), 3–24.
- Coppell, Kirsten J., et al. "Prevalence of Diagnosed and Undiagnosed Diabetes and Prediabetes in New Zealand: Findings from the 2008/09 Adult Nutrition Survey," *New Zealand Medical Journal* 126:1370 (2013), 23–42.
- Cross, Nick, Ian Dittmer and Philip Matheson. *Policy for Use of New Zealand Survival After Kidney Transplant Predictor System in Patients Assessed for Deceased Donor Transplantation in New Zealand Version 1.0* (Auckland: New Zealand Renal Advisory Board, 2012).
- Croxon, B.E., and T.A. Ashton. "A Cost Effectiveness Analysis of the Treatment of End Stage Renal Failure," *The New Zealand Medical Journal* 103:888 (1990), 171–174.
- Dickert-Conlin, Stacy, Todd Elder and Brian Moore. "Donorcycles: Motorcycle Helmet Laws and the Supply of Organ Donors," *Journal of Law and Economics* 54:4 (2011), 907–935.
- Dittmer, Ian. *New Zealand Kidney Allocation Scheme* (Auckland: National Renal Advisory Board, 2013).
- International Registry in Organ Donation and Transplantation. Website (Barcelona: IRODaT, 2014).
- Johnson, RJ, L. Bradbury, et. al., "Organ Donation and Transplantation in the UK – the Last Decade: A Report from the UK National Transplant Registry," *Transplantation* 97 Suppl 1 (2014), S1-S27.
- Kessler, Judd and Alvine Roth. "Getting More Organs for Transplantation," *American Economic Review* 104:5 (2014), 425–430.
- Lavee, Jacob, T. Ashkenazi, A. Stoler, J. Cohen and R. Beyar. "Preliminary Marked Increase in the National Organ Donation Rate in Israel Following Implementation of a New Organ Transplantation Law," *American Journal of Transplantation* 13:3 (2013), 780–785.
- Lavee, Jacob, Tamar Ashkenazi, Gabriel Gurman and David Steinberg. "A New Law for Allocation of Donor Organs in Israel," *The Lancet* 375:9720 (2010), 1131–1133.
- Martin, J., G. Hart and P. Hicks. "A Unique Snapshot of Intensive Care Resources in Australia and New Zealand," *Anaesthesia and Intensive Care Journal* 38:1 (2010), 149–158.
- Ministry of Health (2014), http://www.health.govt.nz/system/files/documents/pages/wiesnz14_v1.1_updated_april_2014.docx.
- National Renal Advisory Board. "Access to Renal Replacement Programmes in New Zealand" (Wellington: NRAB, 2009).
- Organ Donation New Zealand. *Annual Report 2013* (Auckland: ODNZ, 2014).
- Organ Donation New Zealand. "Organ and Tissue Donation and Transplantation in New Zealand" (Auckland: ODNZ, 2007).
- Perović, Saša and Slobodan J. Perović. "Renal Transplantation vs Hemodialysis: Cost-effectiveness Analysis," *Vojnosanitetski pregled: Military-medical and Pharmaceutical Review* 66:8 (2009), 639–644.
- Prasad, Elizabeth. "The Cost of Prohibition: The Law and Economics of New Zealand's organ transplant regime." Master's of Commerce thesis, University of Canterbury, 2015.
- The NCCP Casemix-Cost Weights Project Group, *New Zealand Casemix Framework for Publicly Funded Hospitals Including WIESNZ14 Methodology and Casemix Purchase Unit Allocation for the 2014/15 Financial Year* (Wellington: Ministry of Health, 2014).
- Verran, D., A. Robertson, J. Chapman and S. Chadban. "Deceased Kidney Donor Suitability Guidelines," *The CARI Guidelines – Caring for Australians with Renal Impairment* (2005).
- Winkelmayer, Wolfgang, C., Milton C. Weinstein, Murray A. Mittleman, Robert J. Glynn and Joseph S. Pliskin. "Health Economic Evaluations: The Special Case of End-Stage Renal Disease Treatment" *Medical Decision Making* 22:5 (2002), 417–430.
- Work and Income. "Financial assistance for live organ donors," brochure (Wellington: Government of New Zealand, 2014), <http://www.workandincome.govt.nz/individuals/brochures/financial-assistance-for-live-organ-donors.html>.

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