

RECIPROCAL ALTRUISM—THE IMPACT OF RESURRECTING AN OLD MORAL IMPERATIVE ON THE NATIONAL ORGAN DONATION RATE IN ISRAEL

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I

INTRODUCTION

Israel's organ-transplantation history dates back to 1964, when the first kidney transplantation from a living related donor was performed.¹ In 1965, the first kidney transplantation from a deceased donor was successfully accomplished.² Currently six Israeli medical centers perform kidney, heart, lung, and liver transplantations.³ The Israel National Transplant Center (INTC) coordinates all donors and transplantations.⁴ INTC coordinators are in every medical center in the country.⁵ Despite this, the deceased-organ-donation rate in Israel has traditionally been among the lowest in Western countries, ranging between seven and eight deceased donors per million population.⁶

There are numerous past and present causes of the low donation rate. One major cause is the refusal of some ultraorthodox religious groups to recognize brain death as a valid determination of death.⁷ These groups may refuse organ donation from individuals who are brain dead but do not meet other criteria.⁸ Many mainstream rabbis accept brain death as a valid determination of death

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1. ISR. NAT'L TRANSPLANT CENTER, http://www.health.gov.il/Subjects/Organ_transplant/Israel_transplant_center_ADI/Pages/about.aspx (last visited Apr. 16, 2014).

2. *Id.*

3. *Id.*

4. *Id.*

5. *Id.*

6. Council of Europe, *International Figures on Organ Donation and Transplantation Activity—2010*, NEWSLETTER TRANSPLANT, Sept. 2011, at 35, available at http://www.edqm.eu/medias/fichiers/Newsletter_Transplant_Vol_16_No_1_Sept_2011.pdf.

7. Jonathan Cohen et al., *Brain Death Determination in Israel: The First Two Years Experience Following Changes to the Brain Death Law—Opportunities and Challenges*, 12 AM. J. TRANSPLANTATION 2514, 2514 (2012).

8. *Id.*

and consider organ donation one of the highly noble deeds in Judaism.⁹ However, the vocal objection from ultraorthodox rabbis has widespread consequences since, during critical moments of life, many Israelis, mainly religious but also secular, seek comfort and advice from various religious leaders and tend to accept their judgment.¹⁰

An additional cause of the low donation rate is the so-called “free-riding” behavior of those who reject brain death as a valid determination of death yet are prepared to be organ recipients from brain-dead donors.¹¹ This phenomenon spurs resentment to organ donation and is cited in Israeli public-opinion surveys as a major reason for the low consent rate.¹²

Another important cause was, until recently, the relatively inexpensive availability of transplant tourism for Israeli patients. The Ministry of Health allows Israeli hospitals to perform kidney transplants only from either living related or purely altruistic non-designated donors, following approval by special national transplant ethics committees.¹³ Candidates for kidney transplantation who identify fellow Israelis who are willing to *sell* one of their kidneys are prohibited from undergoing surgery in Israel.¹⁴ Accordingly, instead, many of them used to travel with their donors to countries such as Turkey, South Africa, Bulgaria, Azerbaijan, or Sri Lanka for the surgery.¹⁵ In the majority of cases, Israeli transplant tourists received kidneys from foreign paid donors in the donors’ home countries—mainly the Philippines, but also China and Colombia.¹⁶ Due to a lack of meaningful legal obstacles up to the year 2008, Israeli insurance companies and sick funds used to incentivize this transplant tourism by fully reimbursing transplant operations performed abroad regardless of the legality of the operations under local law.¹⁷ These reimbursements were motivated by both the desire to help desperate patients overcome the local organ shortage and considerations of economic efficiency as these patients were taken off the costly dialysis list.¹⁸ Moreover, middlemen, who were motivated to expand the transplant tourism market, have emerged between the donors and the insurance companies or sick funds, thereby exacerbating the problem.¹⁹

Finally, altruistic organ donation was also traditionally underutilized due to a variety of disincentives, mainly involving lack of any reimbursement to live

9. ISRAEL NATIONAL TRANSPLANT CENTER, *supra* note 1.

10. Cohen et al., *supra* note 7, at 2515–17.

11. Stephanie Eaton, *The Subtle Politics of Organ Donation: A Proposal*, 24 J. MED. ETHICS 167, 167–68 (1998).

12. Jacob Lavee et al., *A New Law for Allocation of Donor Organs in Israel*, 375 LANCET 1131, 1131 (2010) [hereinafter Lavee, *New Law*].

13. Benita Padilla et al., *Impact of Legal Measures Prevent Transplant Tourism: The Interrelated Experience of The Philippines and Israel*, 16 MED. HEALTH CARE & PHIL. 915, 916 (2013).

14. *Id.*

15. *Id.*

16. *Id.*

17. *Id.*

18. *Id.*

19. *Id.*

donors for their incurred expenses and loss of income

In response to all of these obstacles to organ transplantation, on March 31, 2008 the Israeli Parliament passed into legislation two laws relevant to organ transplantation.²⁰ The laws aim to halt illegal transplant tourism while increasing local organ donation from both deceased and living donors. They are designed to increase consent rates for both deceased and live donation by cutting off transplant tourism, incentivizing registration for deceased donation, and removing disincentives for live donation. This review summarizes the unique aspects of these laws and their preliminary impact in 2011.

II

A REVIEW OF RECENT ISRAELI LAWS RELATED TO ORGAN TRANSPLANTATION

A. The Brain-Respiratory Death Law

The first of these two laws, the Brain-Respiratory Death Law,²¹ represents a consensus between the medical community and the religious authorities. It defines the circumstances and mechanisms for determining brain death.²² These include:

1. The mandatory performance of an apnea test according to established guidelines, including the use of a continuous positive airway pressure system where appropriate;

2. The mandatory performance of an ancillary test, using one of the following modalities: transcranial Doppler; computed, tomographic angiography; or auditory, brainstem-evoked potentials. Radionuclide angiography, using hexamethylpropylene amine oxime single-photon emission CT (SPECT), was included as an option for ancillary testing in 2011;²³

3. Informing next of kin when a patient is suspected of being brain-respiratory dead and inquiring whether the patient expressed an opinion, in writing, regarding the determination of brain death. The provision requires that these views be taken into consideration before performing formal brain-death testing;²⁴

4. The establishment of an accreditation committee, comprising ten members, including four physicians from various disciplines, three rabbis (one

20. Brain-Repository Death Law, 5768-2008, SH No. 2144 (Isr.), *available at* <http://www.knesset.gov.il/Laws/Data/law/2144/2144.pdf>; The Organ Transplantation Law 5768-2008. SH No. 2144 p. 394 (Isr.), *available at* <http://www.knesset.gov.il/Laws/Data/law/2144/2144.pdf>, *translated in* Israel Transplant Law: Organ Transplant Act, 2008, The Declaration of Istanbul on Organ Trafficking and Transplant Tourism (April 8, 2014, 2:29 PM), http://www.declarationofistanbul.org/index.php?option=com_content&view=article&id=267:israel-transplant-law-organ-transplant-act-2008&catid=83:legislation&Itemid=130.

21. Brain-Repository Death Law at p. 406 (Isr.).

22. *Id.*

23. *Id.* at 406, 408.

24. *Id.* at 407.

of them also a physician), an ethicist, a philosopher, and a lawyer;²⁵

5. The requirement for all physicians determining brain-respiratory death to undergo a training course, the content of which is determined by the accreditation committee.²⁶

In addition, when a patient makes his position against the determination of brain death known to his relatives, he will not be disconnected from the mechanical ventilator until his heart stops beating.²⁷ All other therapy will be discontinued.²⁸

B. The Organ Transplantation Law

The second of these two laws, the Organ Transplantation Law,²⁹ comprehensively defines all ethical, legal, and organizational aspects of organ donation, allocation, and transplantation in Israel. First, the law declares buying, selling, or brokering in organs a criminal offence punishable by three years in jail and subject to a large fine, whether performed within or outside of Israel.³⁰ It also bans reimbursement for organ transplantation anywhere outside of Israel if the procurement of the organ and its transplantation are performed contrary to the law of either that country or Israel, rendering the law extraterritorial.³¹

A clause in the law gives priority to potential organ recipients who (1) are registered as organ donors for at least three years prior to being listed as candidates, (2) gave their consent for actual organ donation of their deceased next-of-kin, or (3) are non-designated living kidney or liver-lobe donors.³² A recent Parliamentary amendment gives priority to all living donors, non-designated and designated alike, broadening the clause's scope.³³

Finally, the law includes the following clauses that aim to remove disincentives to living donation:

1. Fixed reimbursement equivalent to forty days of lost wages based on the donor's average income during the three months prior to donation (an unemployed donor is reimbursed based upon the minimum salary in the market at the time of donation);³⁴

25. *Id.* at 407.

26. *Id.*

27. *Id.* at 408.

28. *Id.*

29. The Organ Transplantation Law at p. 394 (Isr.).

30. *Id.* at 404.

31. *Id.* at 395.

32. *Id.* at 396–97, 402.

33. GUIDELINES FOR ORGAN ALLOCATION OF THE STEERING COMMITTEE OF THE ISR. NAT'L TRANSPLANT CENTER BASED UPON THE ORGAN TRANSPLANT LAW, 3286 available at <http://www.justice.gov.il/NR/rdonlyres/EF3D9055-295C-4152-89C3-ADADBCC0C5D8/26789/6216.pdf>.

34. *Rules for Reimbursements of Live Organ Donors*, ISRAELI MINISTER OF HEALTH (based upon the Organ Transplantation Law), http://www.nevo.co.il/law_html/Law06/tak-6917.pdf, at 1468 (last visited Oct. 16, 2014).

2. Reimbursement for travel expenses to and from the hospital for the donor and his relatives during the entire hospitalization and follow-up period;³⁵

3. Reimbursement for seven days of recovery in a recuperation facility within three months after donation;³⁶

4. Five years reimbursement for medical insurance, work-capability-loss insurance, and life insurance, all to be reimbursed upon submission of appropriate insurance policies and payment receipts; and³⁷

5. Reimbursement of five psychological consultations and treatments upon submission of appropriate receipts.³⁸

Banning reimbursement for illegal transplant tourism went into effect in late 2008 shortly after this new law was passed. It took two more years for the INTC to promulgate and implement the multitude of regulations stemming from these two laws.³⁹ Following an intensive year-long multilingual media campaign in 2011,⁴⁰ the new laws were fully implemented in April 2012.⁴¹

III

THE GOALS OF THE RECENT ISRAELI LAWS RELATED TO ORGAN TRANSPLANTATION

A. Increasing Consent Rate for Deceased Organ Donation by Resurrecting the Reciprocal Altruism Principle

Organ donation in Israel has always been an opt-in model requiring the donor's explicit consent.⁴² The deceased's relatives' consent is always obtained prior to organ procurement.⁴³ Traditionally, signed donor cards were interpreted as representing the donor's written will, and therefore were almost uniformly respected by relatives.⁴⁴ The Organ Transplantation Law assumes that donors' next of kin will continue to honor that consent and therefore the more individuals will opt in because of the priority given to registered donors, the higher the number will be of actual consents for deceased organ donation.

The law provides an incentive for individuals to agree to help each other. This incentive structure resembles naturally occurring "reciprocal altruism,"

35. *Id.* at 1469.

36. *Id.*

37. *Id.* at 1468.

38. *Id.*

39. *Id.* at 1468–69; *see supra* note 33, at 3286.

40. *See, e.g.*, NAT'L TRANSPLANT CENTER, <http://www.itc.gov.il/eng/index.html> (last visited May 10, 2013).

41. 2012 ANNUAL REPORT OF THE ISR. NAT'L TRANSPLANT CENTER, <http://www.itc.gov.il/news/news-06022013.html> (last visited Apr. 16, 2014).

42. ISR, NAT'L TRANSPLANT CENTER, <http://www.itc.gov.il/eng/merkaz.html> (last visited Apr. 16, 2014).

43. *Id.*

44. Lavee, *New Law*, *supra* note 12, at 1131.

defined by Trivers as “each partner helping the other while he helps himself.”⁴⁵ The altruist donor benefits because, in time, he “is helped in turn.”⁴⁶ Interestingly, Wilson and Wilson noted that “internally altruistic groups out-compete selfish groups.”⁴⁷

The preliminary results show that the number of new registered donors per month has significantly risen from a mean of 2889, from 1998–2010, to a monthly mean of 6273 in 2011.⁴⁸ This represents an increase in the total number of registered donors from 10% of the adult population in 2010 to 12% in 2011 (95% confidence interval for the difference between the means 1113–5654, $p = 0.007$).⁴⁹ The consent rate for organ donation from deceased donors increased to 54.9% in 2011 from 49.2% in 2010, although this increase is not statistically significant (95% prediction interval 38.7–56.8, $p = 0.11$).⁵⁰ However, the *number* of deceased organ donors significantly increased from 60 in 2010 to 89 in 2011.⁵¹ This is also a significant increase in comparison to the previous seven years.⁵² Consequently, there is a significant increase in the deceased-organ-donation rate, from 7.8 donors per million population in 2010 to 11.4 in 2011.⁵³

One question that, naturally, arises is whether statistical analysis and testing is required at all for our data. After all, we have the full national population of families asked to donate their loved ones’ organs after the declaration of brain death. A simple comparison of consent rates between years might seem enough to prove whether the consent rate has increased from 2010 to 2011. However, we feel that this would be a narrow interpretation of the data. To formulate a successful policy, we need to know whether the new law is expected to increase the consent rate in the future. Although we know that the consent rate increased from 2010 to 2011, we cannot necessarily extrapolate and make predictions about the future, an essential concession when evaluating public policy. We therefore prefer to view our data as a sample and not the full population. The relevant period of consideration extends into the future, and, every year, a certain value for the consent rate is realized based on a certain statistical distribution. What we are interested in (and testing for using the prediction-interval method) is whether that statistical distribution changes in 2011. If the probability of donation when a request is made is unchanged by the law, then the law is not expected to bring any benefits, and the increase in 2011

45. Robert L. Trivers, *The Evolution of Reciprocal Altruism*, 46 Q. REV. BIOLOGY 35, 39 (1971).

46. *Id.*

47. David Sloan Wilson & Edward O. Wilson, *Rethinking the Theoretical Foundation of Sociobiology*, 82 Q. REV. BIOLOGY 327, 328 (2007).

48. Jacob Lavee et al., *Preliminary Marked Increase in the National Organ Donation Rate in Israel Following Implementation of a New Organ Transplantation Law*, 13 AM. J. TRANSPLANTATION 780, 781 (2013) [hereinafter Lavee, *Preliminary Marked Increase*].

49. *Id.*; see *infra* Figure 1.

50. Lavee, *Preliminary Marked Increase*, *supra* note 64, at 782; see *infra* Figure 1.

51. Lavee, *Preliminary Marked Increase*, *supra* note 64, at 781.

52. *Id.*; see *infra* Figure 2A.

53. Lavee, *Preliminary Marked Increase*, *supra* note 64, at 781; see *infra* Figure 2B.

could be a statistical accident.

As mentioned, the new law was enacted on March 2008,⁵⁴ but the new organ-allocation prioritization plan was not implemented until April 2012,⁵⁵ and therefore the increase observed in 2011 could be attributed to the year-long public campaign that preceded it.⁵⁶ It may be too early to attribute these encouraging results to the prioritization policy. We expect, however, that once the results are more widely publicized and understood by the public, the consent rate will increase. As outlined in part IV of this article, we will continue to monitor the effects of the new law.

The new prioritization policy is not purely altruistic because there is a quid pro quo reward. Moreover, it violates the ideal of medical care being allocated on the basis of medical need only, not other factors such as a patient's ethnic origin, wealth, or behavior. However, most people who sign an organ donor card will never need an organ themselves, nor will they receive a material reward for their promised donation. Therefore, they may not be purely altruistic, but they remain predominantly altruistic.⁵⁷

Is it unfair to those "free riders" to prioritize other candidates who are willing to donate over them? We hypothesize that true believers in the immorality of organ donation after brain death would not be affected by the new law. If organ donation after brain death is morally wrong, then it is morally wrong for their potential organ recipients as well. Therefore, it would be morally wrong for them to become candidates for organ transplantation and to accept an organ. Respecting the religious freedom of those who become candidates requires respecting their refusal to donate after death. But it does not require giving them the same priority as those who are willing to donate. They are still eligible for transplants, if needed, despite the "free riding" that this entails, simply on the basis of their medical need and medicine's commitment to meeting patients' needs. Moreover, if they were to be willing to donate an organ while alive, to which they would have no objection, they would be granted a level of priority in organ allocation equal to those who gave their actual consent for the donation of the organs of their deceased next of kin. In addition, if this new policy achieves the goal and produces sufficiently more organs, everyone benefits. People who do not sign a donor card, although disadvantaged, are better off than they would be without the policy.⁵⁸

The original version of the law was criticized⁵⁹ for granting priority in organ

54. The Organ Transplantation Law 5768-2008. SH No. 2144 p. 394 (Isr.), available at <http://www.knesset.gov.il/Laws/Data/law/2144/2144.pdf> (accessed May 10, 2013).

55. 2012 ANNUAL REPORT OF THE ISR. NAT'L TRANSPLANT CENTER, *supra* note 53.

56. See *infra* Figure 1.

57. See generally, Jacob Lavee & Dan Brock, *Prioritizing Registered Donors in Organ Allocation: An Ethical Appraisal of the Israeli Organ Transplant Law*, 18 CURRENT OPINION CRITICAL CARE 707 (2012) [hereinafter Lavee, *Prioritizing Registered Donors*].

58. *Id.* at 709.

59. Muireann Quigley et al., *Organ Donation and Priority Points in Israel: An Ethical Analysis*, 93 TRANSPLANTATION 970, 972 (2012).

allocation to candidates who had previously donated an organ only to a non-designated recipient, the so-called fully altruistic live-organ donation.⁶⁰ Parliament's decision assumed that non-designated donation is substantially more altruistic than designated donation to a relative or friend. However, as designated living donors become an increasingly large source of organs, they support the goal of increasing the organ supply and therefore deserve to be prioritized.⁶¹ In opposition with this version, a special advisory committee recommended giving priority to all living donors.⁶² The Israeli Parliament recently amended this clause to grant priority to all living donors, both designated and non-designated.⁶³

For years, the United Network for Organ Sharing has practiced a similar policy, which gives all living donors priority to receive a transplant from a deceased donor should they ever need one.⁶⁴ A similar provision exists in the organ-transplantation law in Singapore, in which any candidate for organ transplantation who does not opt out of organ donation prior to being listed is prioritized over candidates who opt out.⁶⁵

Kessler and Roth's recent research strongly supports the prioritization policy.⁶⁶ Through a laboratory experimental game, which examines how various management strategies for organ-donation waiting lists impact the process of deciding to register as an organ donor, they show that an organ-allocation policy giving priority on waiting lists to those who have previously registered as donors has a significant positive impact on registration.⁶⁷

Kessler and Roth also find that the existence of a legal loophole completely eliminates the increase in donation generated by the priority rule.⁶⁸ Through the loophole, an individual can register to receive priority but avoid donating by providing his family with the option to decline donation.⁶⁹ We share this concern and will monitor it carefully by comparing the consent rate of families in which the deceased has a donor card to the consent rate of families in which the deceased has no donor card. The weighted average consent rate for people who signed a card for 2002–2010 was 90.4%,⁷⁰ whereas the weighted average consent

60. The Organ Transplantation Law 5768-2008. SH No. 2144 p. 396-397, 402 (Isr.), available at <http://www.knesset.gov.il/Laws/Data/law/2144/2144.pdf> (accessed May 10, 2013).

61. Lavee, *Prioritizing Registered Donors*, *supra* note 57, at 710.

62. Lavee, *New Law*, *supra* note 12, at 1131.

63. Jacob Lavee, *Ethical Amendments to the Israeli Organ Transplant Law*, 13 AM. J. TRANSPLANTATION 1614, 1614 (2013).

64. UNOS Policy 3.5.5.3: allocation of deceased kidneys (2008).

65. Human Organ Transplant Act (Ch. 131A, § 12(a)–(b) (Indon.).

66. Judd B. Kessler & Alvin E. Roth, *Organ Allocation Policy and the Decision to Donate*, 102 AM. ECON. REV. 2018, 2021 (2012).

67. *Id.*

68. Judd B. Kessler & Alvin E. Roth, *Organ Donation Loopholes Undermine Warm Glow Giving: An Experiment Motivated By Priority Loopholes in Israel*, 21–22 (Feb. 23, 2013) (working paper), available at <http://www.gsm.pku.edu.cn/resource/uploadfiles/docs/20130313/201303131229496395.docx>.

69. *Id.* at 4–6.

70. Unpublished internal data of the Israel National Transplant Center.

rate for people who did not sign a card was 42%.⁷¹ In 2011, these consent rates were 93% and 51%, respectively,⁷² so we see no signs of any decline. As data accumulates, we will employ more rigorous statistical testing, and if adjustments to the law need to be made, we will raise the issue with the relevant authorities.

Even if the prioritization approach results in higher consent rates, public opposition is a relevant concern for the United States and other countries considering implementing a similar policy. Robertson, Yokum, and Wright report in this issue of *Law and Contemporary Problems*⁷³ that, in experimental settings, most U.S. study participants consider the reciprocal preferences proposal efficacious in achieving a significant increase in organ donation yet of low morality. However, a set group of policy reforms, which combine reciprocal preferences, opt-out schemes, and elimination of the family veto, neutralize moral objections to a policy that consists only of reciprocal preferences, which suggests that this package of reforms may be politically feasible.

B. Stopping Transplant Tourism by Banning Reimbursement

The annual number of patients undergoing kidney transplantation abroad has decreased from 155 in 2006 to thirty-five in 2011, based on data retrieved from the Israeli National Dialysis Registry.⁷⁴ This is likely due to the ban on reimbursing patients for transplantations that are illegal in the host country. Transplant tourism to traditional illegal venues, such as China, with its mostly executed prisoner donors, and the Philippines, with its vendor living donors, has stopped completely since the new law took effect.⁷⁵ A few patients self-funded their kidney transplantations performed abroad during 2011, but most Israeli patients do not seek transplantation abroad if it is not reimbursed.⁷⁶ Although pre-dialytic patients seeking illegal kidney transplantations abroad might not be registered with the Israeli National Dialysis Registry, all Israeli dialytic patients must register, and therefore, their transplantation is always documented regardless of where it is performed. Therefore, it is safe to conclude that the significant reduction in observed kidney transplantations abroad is not artificially high by failing to account for a significant increase in illegal, self-funded transplant tourism.

C. Increasing Live Kidney Donation by Removing Disincentives

In parallel to the significant decrease in transplant tourism from Israel, local living kidney donation has significantly increased from seventy-one in 2010 to

71. *Id.*

72. *Id.*

73. Christopher T. Robertson et al., *Perceptions of Efficacy, Morality, and Politics of Potential Cadaveric Organ Transplantation Reforms*, 77 LAW AND CONTEMP. PROBS., no. 3, 2014 at 101.

74. Lavee, *Preliminary Marked Increase*, *supra* note 48, at 782; *see infra* Figure 3A.

75. *See, e.g.*, Padilla et al., *supra* note 13.

76. *See* Lavee, *Preliminary Marked Increase*, *supra* note 48, at 782.

117 in 2011.⁷⁷ It is hard to ascertain whether this is the result of the dwindling opportunities to receive a kidney abroad or due to the removal of disincentives for local living donation. Regardless, the end result is a marked increase in the number of living kidney donations.

Overall, the significant increase in 2011 in organ transplantations, both from deceased and living donors, has resulted, for the first time in a decade, in a decrease in the number of candidates awaiting organ transplantation and the number of potential recipients who die on the waiting list.⁷⁸

D. The Declaration of Istanbul and the Self Sufficiency Goal

The Israeli Parliament approved the new Israeli Organ Transplantation Law one month before representatives from seventy-eight countries around the world formalized the Declaration of Istanbul.⁷⁹ However, it follows the Declaration's principles almost verbatim. The fundamental goal of the Declaration is that each nation should "strive to achieve self-sufficiency in organ donation by providing a sufficient number of organs for residents in need from within the country."⁸⁰ Banning reimbursement for illegal transplant tourism, combined with the other measures aimed at increasing local deceased and living donation, is a signal of success. It also addresses the recent call for governments' self-sufficiency in organ donation and transplantation.⁸¹

IV

FUTURE RESEARCH

Although the 2011 increase in organ donations in Israel is encouraging, the results are still preliminary and more work needs to be done to better evaluate the long-term implications of the new law. We will undertake the following additional research projects.

First, we will keep collecting data and reevaluate annually whether the increase in organ donations in 2011 was temporary or permanent.

Second, a more thorough analysis of the reasons behind the 2011 increase in organ donation may be useful. Organ donations may have increased for many reasons, such as an increase in the supply of potential donors, an increase in the consent rate as a result of the public campaign, or as a result of the incentives offered by the new law.

Third, a subject of critical importance to the successful implementation of

77. Lavee, *Preliminary Marked Increase*, *supra* note 48, at 782; see Figure 3B.

78. *Id.*

79. *Organ Trafficking and Transplant Tourism and Commercialism: The Declaration of Istanbul*, LANCET, Jul. 5, 2008, at 5; the Organ Transplantation Law 5768-2008. SH No. 2144 p. 394 (Isr.), available at <http://www.knesset.gov.il/Laws/Data/law/2144/2144.pdf> (accessed May 10, 2013).

80. *Principles*, DECLARATION OF ISTANBUL ON ORGAN TRAFFICKING AND TRANSPLANT TOURISM, http://www.declarationofistanbul.org/index.php?option=com_content&view=article&id=82&Itemid=86 (last visited Feb. 5, 2014).

81. See, e.g., Francis L. Delmonico et al., *A Call for Government Accountability to Achieve National Self-sufficiency in Organ Donation and Transplantation*, 378 LANCET 1414, 1417 (2011).

similar programs is whether they constitute a Pareto improvement,⁸² or whether people who do not sign a donor card are worse off because of the program. Clearly, people who have a donor card are better off because there are more organs to be allocated and they have higher priority than before signing. On the other hand, people who do not have a donor card gain from the increased supply of organs, but may be worse off overall if the effect of having lower priority on the waiting list outweighs the benefits of the higher organ supplies. We will observe the outcomes of candidates for organ transplantation with and without donor cards before and after the implementation of the law. In addition, we will analyze the issue of the optimal prioritization scheme. On the one hand, prioritization needs to be substantial enough to cause an increased number of signatures. On the other hand, it also needs to prevent a significant increase in mortality rates of candidates on the waiting lists who have not signed the donor card.

Finally, analyzing different countries can be useful to predict whether similar programs may be effective in other countries, like the United States. Israel is somewhat unique because it contains groups who are strongly against organ donation and not likely to respond to incentives. Similar programs may be more effective elsewhere. On the other hand, the higher percentage of donor-card signers in other countries and the higher consent rate suggest that there is less room for improvement in other countries, limiting the potential response to the program. Such factors need to be carefully examined, potentially with public-opinion surveys.

V

SUMMARY

Changing national attitudes toward organ donation is daunting and time-consuming. The two new Israeli laws were created in response to various obstacles to organ donation. The early results appear promising and suggest the measures were effective. Time will tell whether the organ donation rate in Israel will increase enough to deal with the increasing number of candidates for organ transplantation. Meanwhile, applying these policy measures more universally may be considered.

82. Pareto efficiency is a term commonly used in economics. It means that it is not possible to improve the situation of one person without hurting someone else. A Pareto improvement is an action that improves the situation of someone without hurting somebody else. The advantage in focusing on Pareto efficiency is that no one should object to actions that constitute a Pareto improvement, although comparisons between different Pareto-efficient allocations necessarily involve weighing the utility of certain individuals against others (because, if the economy is at a Pareto-efficient point, moving it to another point will make some individuals better off but hurt others).

Figure 1: Cumulative number of registered donors by the end of each and the annual consent rate for deceased organ donation (in percent).¹¹

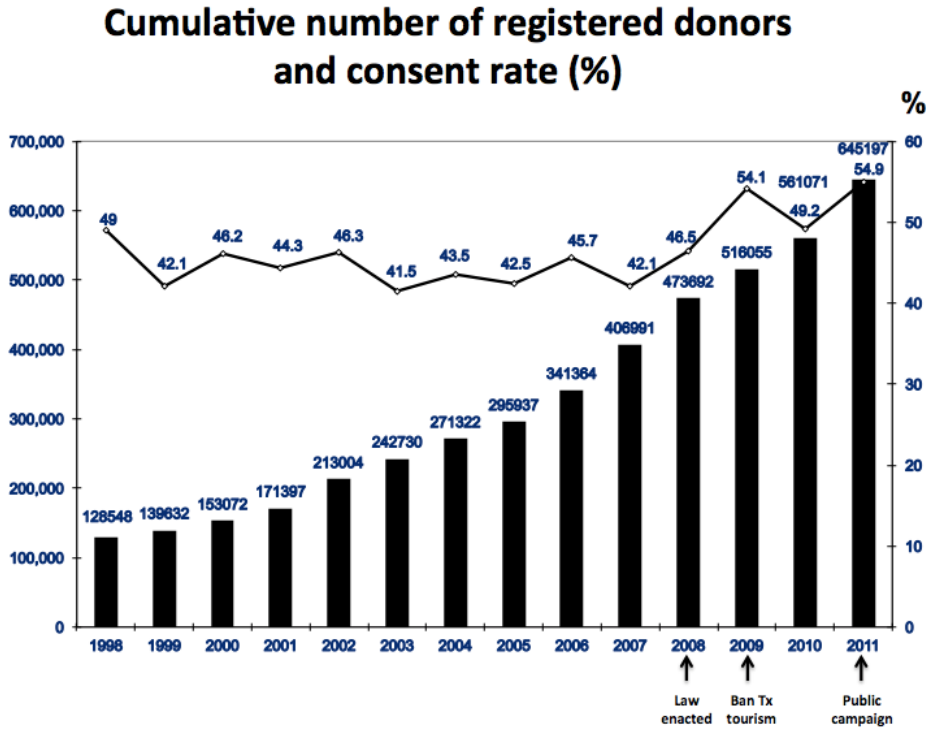
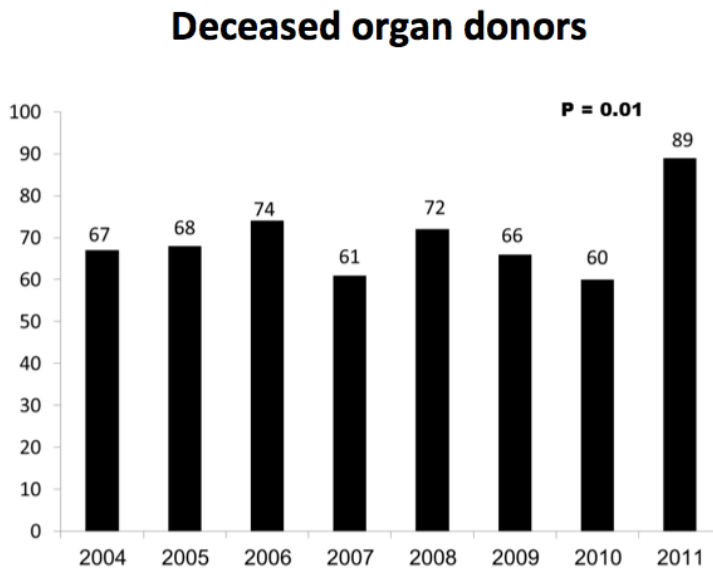


Figure 2

A. Annual number of deceased organ donors.¹¹



B. Annual deceased organ donation rate (pmp – per million population).¹¹

Deceased organ donation rate (pmp)

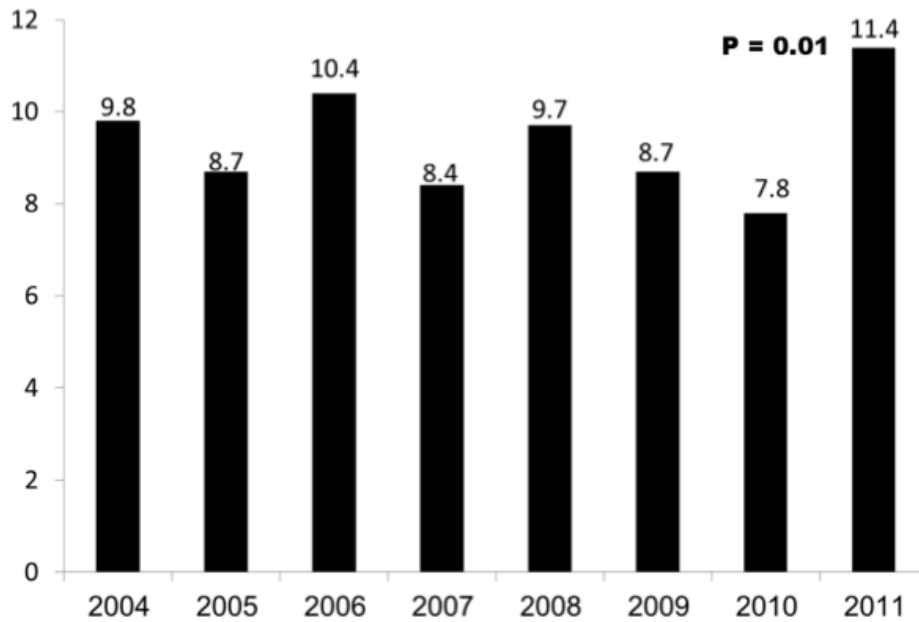
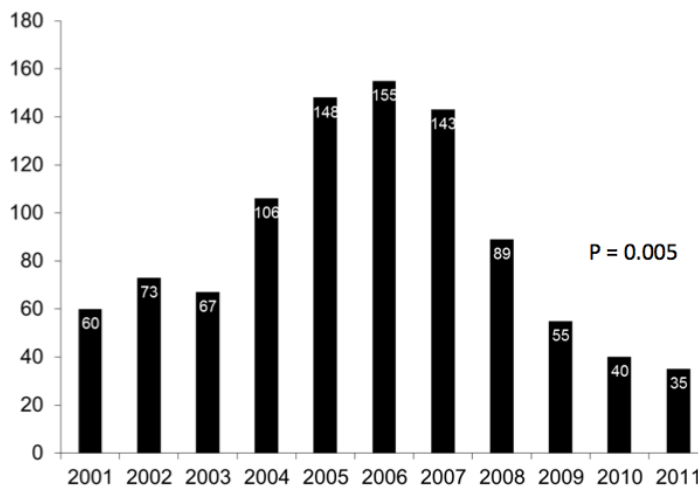


Figure 3

A. Annual number of kidney transplantations performed abroad.¹¹

Kidney transplants performed abroad



B. Annual number of kidney transplantations from living donors.¹¹

