

Economic Analysis: HB17-1027

Each day an estimated 18 patients will die while waiting for an organ donation. Nationally, there are now over 120,000 people waiting for a transplant.¹ In Colorado, there are currently 2,500 candidates waiting for an organ transplant with an estimated wait time of 5 to 10 years. The primary method of organ donation is through Colorado residents consenting to donation when renewing their driver's license: even though Colorado has one of the highest donorship rates in the country at 68%,ⁱ the continued presence of unmet need demonstrates that the current method is inadequate. Under current Colorado law, consent to organ donorship is subject to expiration if not renewed. By removing this expiration, HB17-1027 takes an achievable step toward increasing the supply of transplantable organs.

The decision to become an organ donor creates substantial positive social externalities. Kidney disease—the most common condition of those on the registry—has a life expectancy of 3 to 7 years if treated through dialysis. Need for other organs—such as lungs, heart, or liver—have significantly lower expectancies. The advocacy network Donate Life has found that a single deceased donor has the potential to save up to eight of these patients.² Despite carrying no negative costs to the donor, a single donor increase in the registry has huge potential to generate positive social externalities.

There are several readily available options available to the legislature to increase donor registration. One potential solution would be to shift organ donation to an opt-out system in which all renewing citizens are considered donors unless otherwise noted. While the individual incentive for or against donation remains trivial, behavioral psychologists have found that the act of switching from an opt-in system to opt-out system may alter the value

¹ "Facts and Details." *Donate Life Colorado*. N.p., n.d. Web. 07 Apr. 2017.

² "Facts and Details." *Donate Life Colorado*. N.p., n.d. Web. 07 Apr. 2017.

individuals place on donation. Residents of opt-in countries such as German and the United States act of extraordinary altruism, while residents of opt-out countries such as Austria or Belgium view donation as an “ethically trivial and inconsequential actions.”³

This change in perception has substantive effects for donation. The rate of donation is 12% in Germany and 17.17% in the United Kingdom—both countries with opt-in systems.

Meanwhile, all six opt-out European countries have donation rates above 98%.⁴ While there may be some cultural influence in donation rates, it is likely that such a system would be equally successful in the United States. Researchers at the Columbia School of Business found that 82% of participants in online experiments consented to donation when it was the default option, compared to 42% of participants for whom non-donation was the default.⁵

Although the personal incentives remain unchanged, shifting the default introduces an implied social preference for donorship which creates demonstrable effects on donor registration rates.

There is also substantial evidence that simply requiring an answer to the donor registration question positively influences rates of registration. A practical solution before the legislature would be to change the donor question from an optional to a required question when renewing a driver’s license. Several states have already instituted this option, resulting in donor signup rates 22% above the national average (60% average registration rate for required response states versus 38% nationally).⁶ This policy has been found to be

³ <https://sparq.stanford.edu/solutions/opt-out-policies-increase-organ-donation>

⁴ <http://www.nytimes.com/2009/09/27/business/economy/27view.html>

⁵ Johnson, Eric, and Daniel Goldstein. "Defaults and Donation Decisions." *Dangoldstein.com*. Journal of Transplantation, 27 Dec. 2004. Web.

⁶ "Facts and Details." *Donate Life Illinois*. N.p., n.d. Web. 07 Apr. 2017. <http://www.donatelifellinois.org/>

significantly more popular than presumed consent,⁷ despite generating similar increases in donor registration rates in controlled studies.⁸ While HB17-1027 indisputably increases donorship by closing a loophole in the current law, either of these relatively minor shifts in policy would be more effective at increasing registration rates and their positive externalities.

In addition to creating positive externalities, expanding the organ donor registry can be considered a common good. Although the organ transplantation itself is a private good—a single organ can only be transferred to a single recipient—the organ donor registry resembles a common good in that no medically eligible candidate can be excluded from the registry. Because of donation's status as a common good, it tends to incur the free-riding problem: individuals do not have a personal incentive to contribute to registry as organ donors if they know that they will benefit from the registry regardless of whether they contribute.

The common solutions to common resource problems—taxing non-registration or issuing permits for inclusion on the registry—are unfeasible in the case of organ donation given the strong legal and ethical consequences. Likewise, financial incentives for registration—such as tax advantages, reduced driver's license fees, or paying for burial costs⁹--are currently illegal under the National Organ Transplant Act of 1984.¹⁰ However, the legislature does have some options available to increase nonmonetary incentives to registration.

⁷ Spital, Aaron. Mandated Choice: The Preferred Solution to the Organ Shortage? *Arch Intern Med.* 1992;152(12):2421-2424.

⁸ Johnson, Eric, and Daniel Goldstein. "Defaults and Donation Decisions." *Dangoldstein.com.* Journal of Transplantation, 27 Dec. 2004. Web.

⁹ Roth, Al. "Incentives for Organ Donors." *Incentives for Organ Donors.* N.p., 17 Dec. 2008. Web. 07 Apr. 2017.

¹⁰ Yanklowitz, Shmuly. "Give a Kidney, Get a Check." *The Atlantic.* Atlantic Media Company, 27 Oct. 2015. Web. 07 Apr. 2017.

One creative solution presented by Nobel Prize-winning economist Al Roth is to give priority consideration to those having registered as potential donors¹¹. This treats donor registration as a type of insurance: registering as a donor has the potential to increase the registrant's long-term health despite imposing negligible up-front costs. Additionally, altering allocation procedures to favor donors shifts organ allocation into a club good—in which allocation (or probability of allocation) of a public good is considered excludable. Given that the upfront cost of registration remains low but the potential future cost of nonregistration greatly increases, respondents will have significant incentive to register as donors.

This process has already been implemented in Israel through 2011 legislation. While medical need remains the primary consideration for transplantation, the legislation stipulates that secondary preference is given to candidates who had registered prior to their diagnosis or who have had a family member donate. This legislation was enormously successful, with a 60% increase in organ transplants from 2010 to 2011.¹²

By manipulating the market design, this legislation was extremely effective at increasing donation without financial intermediation. Including priority for family members of donors also bypasses a potential pitfall of other systems: regardless of the individual's intent, donation cannot occur over strong familial objection. This system represents the best alternative to monetary incentives for overcoming the free-rider problem associated with registries.

¹¹ Kessler, Judd, and Alvin Roth. "Organ Allocation Policy and the Decision to Donate." (2011): n. pag. Web.

¹² Rosenberg, Tina. "It's Time to Compensate Kidney Donors." *The New York Times*. The New York Times, 07 Aug. 2015. Web. 07 Apr. 2017.

While this solution remains unacceptable to most Americans,¹³ the legislature does have a variety of practical solutions. Closing the loophole in registration expirations offers a practical and necessary step to increasing donation, and HB17-1027 should be passed on these merits. Likewise, requiring an answer to the registration question or presuming consent have both been shown to increase donation registrations.

These solutions, however, do not address the fundamental driver of persistent wait-lists—that individuals have no monetary or nonmonetary incentive to register as donors when membership on the registry is nonexcludable. Until national policy allows for financial or social incentive, the prospect of an adequate solution remains unlikely.

¹³ Kessler, Judd B., and Alvin E. Roth. "Getting More Organs for Transplantation." *American Economic Review* 104.5 (2014): 425-30. Web.