The Organ Shortage Crisis

The United States recently passed a tragic milestone. For the first time, there are more than 100,000 Americans waiting for an organ transplant (Tye, 2001). If recent history is any guide, more than 6,000 of them will die waiting this year. Organ shortages have plagued humanity since the advent of organ transplantation in 1954; however, the extent of organ shortages around the world is far from homogeneous. In some countries, patients in need of organs have almost no hope of ever obtaining one, whereas in other locations there are literally no waiting lists. It should come as no surprise that the United States is not one of those latter locations, but it may surprise some that the U.S. flirts with becoming one of the former. So what is the reason behind the great disparity in organ obtainability? The ability of patients in some countries to undergo organ transplants readily, while others wait hopelessly for a donor, has to do with organ donor policies. The diversity in organ donation policies is great, and extends from government purchase of organs from citizens in some countries to more laissez-faire approaches relying solely on altruistic acts in others. The United States ranks among the most passive countries in the world with regard to its organ donation policies, and as the number of patients on organ transplant lists continues to rise rapidly, it is time for this country to reevaluate its approach. Based on the successes and failures of other countries’ strategies, I would propose that the United States’ government offer non-monetary incentives to potential organ donors, in addition to other policy amendments, to help spur an increase in the number of desperate patients able to obtain the gift of life.
I would now like to take a step back and start from the beginning. Tracing organ donation and transplantation from its starting point will help to illuminate some of the reasons why the current organ shortage has come to be. The idea of exchanging an ailing person’s organ with a functional replacement has been around for centuries. In 1667 French physician Jean-Baptiste Denis administered the first blood transfusion from a lamb to a 15-year-old boy who suffered from high fevers (“History of Organ Transplantation”). Unfortunately, a year and several failed transfusions later, authorities in France and Great Britain prohibited any more experiments. But the quest to successfully heal patients through the introduction of functional replacement organs continued. In 1818, James Blundell, a British obstetrician, transfused four ounces of blood from a man to his wife, replacing the blood she just lost during childbirth. This was the first well-documented case of person-to-person blood transfusion. The first successful human-to-human bone transplant followed in 1878 (“History of Organ Transplantation”).

The first major breakthrough of the 20th century came in 1954, with a successful kidney transplantation between 23-year-old identical twins. Since 1954, many of the body’s most essential and disease-prone organs have been transplanted: a heart and liver in 1967, a lung in 1983, and an entire hand in 1998 (“History of Organ Transplantation”).

Interestingly, organ donation on a large scale did not surface until over ten years after organ transplantation became feasible. The first organizations designed to help coordinate organ donations - now called Organ Procurement Organizations (OPOs) - were established in Boston and Los Angeles in 1968 (“Testimony on Organ Transplant Policy”). The same year, The Uniform Anatomical Gift Act established the Uniform Organ Donor Card as a legal document in all 50 states, making it possible for anyone 18 years or older to legally donate his or her organs upon death. This Act also banned the sale of organs and tissues. In 1984, the National Organ
Transplant Act was passed, establishing the Organ Procurement and Transplant Network (OPTN), to guarantee, among other things, fairness in the distribution of donated organs (Pitney, 2008). The United Network for Organ Sharing (UNOS) of Richmond, Virginia, subsequently received the contract with the federal government to oversee the OPTN. In response to rising organ shortages in the United States, in 1986, President Ronald Reagan signed the “Omnibus Budget Reconciliation Act” requiring all hospitals to establish protocols for offering families of deceased patients the option of organ donation (“Understanding Donation”). This law was largely ignored by hospitals and had little impact on increasing organ donations. In 1998, new federal regulations were enacted to increase organ and tissue donations once again. These provisions required hospitals to notify their area’s organ procurement organization whenever someone passed away in order to ensure that the family was offered the opportunity of organ or tissue donation. These regulations were put into place largely because it was realized that many families of deceased patients were never offered the opportunity to donate organs, proof that the 1986 Act was ineffective.

It becomes obvious that many of the reasons for today’s organ shortage in the United States are due to delayed and ineffective policies. However, another major contribution to the demand for organs is the fact that transplantation procedures themselves are becoming more refined and successful. Dr. Roger Jenkins, chief of liver surgery at the Lahey Clinic says, “Our success has to some degree made things harder with the waiting list. Now we look at patients with less skepticism in terms of getting a transplant if they have underlying liver disease” (Tye, 2001). Another contributing factor to increased demand for organs is that medical advances are allowing for the treatment of older and sicker patients, which means more of them will sign up for new organs. Still another reason for the increased demand is that less than one percent of
people die in a way that their brains expire but their hearts keep blood flowing to the organs so that they can be saved and donated (Tye, 2001). The major causes of these types of fatalities are car, bicycle, and motorcycle accidents, all of which have been reduced by safety programs.

The United States’ approach to the organ shortage is largely based on the 1984 National Organ Transplant Act. The overseeing organization created by this Act, UNOS, maintains a central computer network containing the names of all patients waiting for kidney, heart, liver, lung, intestine, pancreas and multiple-organ transplants. The UNOS "Organ Center" is staffed 24 hours a day to respond to requests to list patients, change status of patients, and help coordinate the placement of organs (“Understanding Donation”). Patients on the waiting list are in end-stage organ failure and have been evaluated by a transplant physician at hospitals in the U.S. where organ transplants are performed. General principles, such as a patient's medical urgency, blood, tissue and size match with the donor, time on the waiting list and proximity to the donor, guide the distribution of organs. Under certain circumstances, special allowances are made for children. For example, children under age 11 who need kidneys are automatically assigned additional points on the list (“Understanding Donation”).

Another guiding principal in organ allocation is: local patients first. The country is divided into 11 geographic regions, each served by a federally-designated organ procurement organization, which is responsible for coordinating all organ donations. With the exception of perfectly matched kidneys and the most urgent liver patients, first priority goes to patients at transplant hospitals located in the region served by the organ procurement organization. Next in priority are patients in areas served by nearby procurement organizations. Eighty percent of all organs are donated and used in the same geographic area (“Understanding Donation”).

The National Organ Transplant Act also included a provision subjecting donors and
patients to criminal penalties of up to five years in prison and a $50,000 fine if compensation was provided to a donor (Furchtgott-Roth, 2008). This section was added to prevent for-profit businesses from paying the poor to give up their organs, or their lives, for rich patients.

An unfortunate theme seen throughout America’s approach to organ donation and transplantation is fierce competition between transplant programs at competing hospitals to perform the most transplants, which are lucrative and prestigious procedures. David Mulligan, the chairman of the Boston Public Health Commission, states that, “We’re setting up the wars by making transplants lucrative, and once they’re lucrative almost every teaching hospital wants a program” (Tye, 2001).

The United States’ organ procurement policies and organizational structure are drastically different from other countries, many of which have far less dire organ shortages because of their successful programs. The policies of these countries can be largely divided into nonmonetary and monetary incentive approaches.

While not technically classified as an incentive, many countries around the world are currently moving toward a policy of presumed consent. Under such a standard, all citizens will be considered potential donors at the time of death unless they have affirmatively opted out of such a designation. This program is essentially the opposite of the current organ donor program in the United States, where it is presumed you are not an organ donor unless you have the designation on your driver’s license. Most countries in Europe have transitioned to this policy, and India is expected to change to this approach in the near future (Tabarrok, 2010). Research has shown that presumed consent alone has modestly raised donation rates, but when coupled with strong transplant infrastructure, such as transplant coordinators and round-the-clock
transplant facilities, the improvements were quite drastic (Tabarrok, 2010).

The two countries that have pioneered true nonmonetary incentive systems for potential organ donors are Singapore and Israel. Singapore’s system, which has been termed “no give, no take,” assigns a lower priority on the transplant waiting list to those who opt out of the country’s presumed consent system (Tabarrok, 2010). Israel has a similar, yet more flexible, version of “no give, no take.” In the Israeli system, points are given to citizens for partaking in certain activities. For example, people who sign an organ donor card are awarded points and pushed up the transplant list should they one day need a transplant. Points are also given to citizens whose immediate family has signed organ donor cards or donated organs. Both of these systems have only recently been enacted, however, the organ shortage crises in these countries are already being alleviated (Tabarrok, 2010).

The best case of a monetary incentive system for potential donors can be seen in Iran. The program in this country has completely eliminated waiting lists through direct payments to organ donors. When a patient is in need of an organ, he or she can apply to the nonprofit, volunteer-run Dialysis and Transplant Patients Association. This organization identifies donors from a pool of applicants. Potential matches undergo immediate medical evaluation by a physician not connected to the transplant association before being selected as the donor. Upon donation of the organ, the government compensates donors with $1,200 and one year of limited health-insurance coverage (Tabarrok, 2010). Additionally, kidney recipients pay donors between $2,300 and $4,500. Much of this financial burden is covered by national charitable organizations. The Iranian system began in 1988, and had completely eliminated organ shortages by 1999, demonstrating the effectiveness of this monetary incentive approach (Tabarrok, 2010). Other countries are following Iran’s model. In March 2009 Singapore
legalized a government plan for paying organ donors. Currently, it is believed that the payment will be around $50,000, which would be a significant incentive to donors (Tabarrok, 2010).

So what do I think the United States should do differently? I am not suggesting we become lax on motor vehicle safety programs or revert to practicing primitive medicine to ensure a larger pool of organs. Nor do I believe that a strict monetary or nonmonetary approach will be effective. Instead, I would propose an integrated approach to decrease transplant program competition, implement presumed consent and some nonmonetary incentive practices, and make the current transplant process more equitable.

Competition among transplant programs not only serves to increase cost but also prevents essential cooperation between leading healthcare centers. If hospitals and transplant centers could streamline their programs into large, cooperative systems, it would make donor matching and transplantation far more effective. For example, if in one particular city each transplant center was assigned one particular type of transplant surgical procedure, Massachusetts General transplants hearts, Boston Medical transplants kidneys, etc., the system could be simplified. Obviously, there would be much criticism of this approach. Not all transplant procedures cost the same, so no healthcare center would want to be assigned a procedure with a low price tag. However, if the redundancy in the system could be purged, organ procurement organizations would have greater ease in organizing donors and recipients. This could make the process less cumbersome for all involved.

I believe that the policy of presumed consent should also be implemented in the United States. It has a proven track record of success around the globe and has been particularly helpful in countries with strong transplant infrastructures, which the U.S. most certainly possesses. The
policy would still allow those who object to organ donation for moral or religious reasons to not donate, however, it would allow for the collection of many organs from people who are essentially neutral on the issue—never feeling strongly enough about donating to check the box at the DMV, but not feeling strongly opposed either.

In addition to the change to presumed consent, the United States should also adopt some nonmonetary incentive policies for organ donors. Interestingly, in 2007, one such bill was introduced in the Senate by Arlen Spector. The bill, which passed the Senate but was never voted on by the House of Representatives, was entitled “The Organ Donor Clarification Act,” and would have allowed states to provide incentives such as tax deductions, funeral expense coverage, tuition or tax credits, or health insurance to encourage donations that could save thousands of lives annually (“Wait-List to Death”). I feel that a nonmonetary incentive program, rather than a monetary program, would be most beneficial because it would help circumvent one of the major criticisms of any donor incentive program—that they would tempt the poor into selling organs for financial gain alone. Nonmonetary incentives could be equally as enticing as monetary incentives to the poor, but I believe that three years of government-funded health insurance for an underserved donor, for example, is a more positive incentive than a thank you check for a few thousand dollars to be used on absolutely anything. Another major criticism of offering any type of incentive is that it may be an affront to the thousands of donors who have already made an altruistic gift of life and it could alienate Americans who are prepared to donate out of humanitarian concern. While these criticisms are valid, I personally side with Dr. Richard Amerling of Beth Israel Medical Center who believes that, “Transplantation provides the best quality of life and survival. Arguments against compensation such as exploitation of the poor, ‘commoditization’ of the body, and the loss of altruism, are all extremely weak, especially in the
face of high mortality on the waiting list” (Furchtgott-Roth, 2008). In essence, I believe that the benefit of potentially preventing thousands of deaths annually outweighs the potential cost of making organ donation a less altruistic act.

Lastly, I believe that the government must work to make the Organ Procurement and Transportation Network more equitable. In 1991, the Health and Human Services Inspector General found this organization to be extremely inequitable with regard to race and geography (“Testimony on Organ Transplant Policy”). Under the current policy, patients who are less ill often receive transplants while more severely ill patients, perhaps only a few miles away, die. This is due to the fact that there is little or no communication between donation regions, regardless of how close they may be to each other. One recent report found that patients in one part of the country wait for organs as much as five times longer than patients in other parts of the country who have the same illness (“Testimony on Organ Transplant Policy”). The major problem with this segregated system is that where waiting times are shortest, organs are going to patients who are less ill. If instead, those organs were being given to the most terminally ill patients, it could help the sickest patients get organs in time. Changes in this system could at the very least help to more effectively manage the organ shortage until the other policies take hold.

In conclusion, the organ shortages around the world continue to pose great challenges. The bottleneck is not in the medical technology, but rather the raw materials. We have reached a critical time in the United States, where passively collecting organs from those willing to donate is no longer adequate. We currently lag behind much of the world in rectifying this problem, but with quick, decisive action we could begin to see positive changes. It will take a large commitment on the part of the government and the citizenry to conquer the organ shortage problem and provide the gift of life to all those in need, but the cause is worth the fight.
References:


