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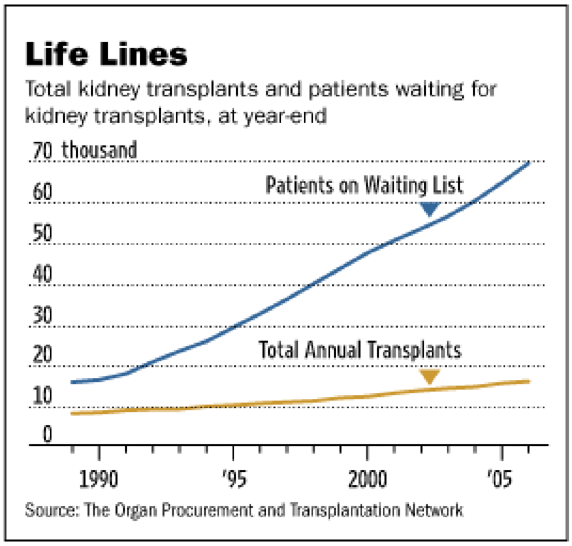
A Market for Kidneys?

THE WALL STREET JOURNAL ONLINE

U.S. federal law has long banned any compensation for human organs, but with the demand for kidney transplants far outstripping the number of donors, some economists are urging the adoption of market-based innovations to increase supply.

One of these is the University of Buffalo's Julio Elias, who argues that, distasteful or not, monetary incentives are the most efficient way to boost the number of organs available for transplant, and should be introduced. On the other side, Harvard University's Alvin Roth argues that cultural mores -- repugnance -- preclude buying and selling of organs. Instead, he says, alternative arrangements, such as so-called organ exchanges, might be a better solution.

What do you think? Join the discussion in our online reader forum.



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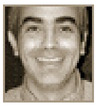
Julio Elias writes: The only feasible way to eliminate the large queues in the market for kidney transplants is by significantly increasing the supply of kidneys. The introduction of monetary incentives could increase the supply of organs sufficiently to eliminate the large queues, and it would do so without increasing the total cost of kidney transplant surgery by a large percent, as Gary Becker and I show in a paper on the potential of markets for organs.

Even though the benefits of eliminating the organ shortage are significant, many people have opposed proposals to pay for organs, a practice prohibited under present law in almost every country.



Some critics argue that payment is "immoral" because it involves the "commodification" of body parts, or that the poor will be "coerced." Others are opposed because they simply do not like the idea of the existence of a market for organs. However, conclusions about the morality of using prices to encourage supply or ration demand have changed in the past when they were shown to be effective. One example is a carbon tax to cut pollution; another is the use of willingness to pay to reduce the risk of death to measure the (statistical) value of life. Attitudes about using prices to help eliminate the shortage of organs would also change, I am confident, when it is shown how efficiently prices would solve this problem.

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Alvin Roth writes: Selling organs is illegal in most countries. Legalizing kidney sales faces substantial, perhaps insuperable obstacles. Just as you can't sell yourself into indentured servitude anymore, some transactions are illegal because enough people find them repugnant. But many people are in urgent need of kidney transplants, so it's helpful to think about steps to relieve the shortage now.

Join the Discussion

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Kidneys for transplantation come from either deceased or living donors (a healthy person has two kidneys and can remain healthy with one). Some ways to increase the number of deceased donor kidneys include changing how donations are solicited (e.g. introducing opt-out rather than opt-in donor decisions), changing when kidneys are "harvested" (after heart-death, as well as brain-death), and changing which organs are selected (e.g. older patients might profit from organs from donors older than are now considered).

There would be more live-donor transplants if everyone who wanted to donate a kidney to someone could do so, but a healthy person's kidney is often incompatible with his or her intended donor. So, one way economists have helped is in helping organize kidney exchanges, which allow incompatible patient-donor pairs to exchange with other such pairs. I'll talk more about this work (with my economist colleagues Tayfun Sönmez, and M. Utku Ünver and many medical colleagues) in my next post.

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Julio Elias is an assistant professor in the economics department at the University at Buffalo. He is also an affiliated researcher in the university's Center of Excellence on Human Capital and Economic Growth and Development. He teaches health economics and microeconomics theory. His recent work, with Gary S. Becker of the University of Chicago, has focused on markets for organs, as well as the non-monetary benefits and social returns on education. He received his doctorate in economics from the University of Chicago in 2005 and a bachelor's in economics from Universidad Torcuato Di Tella in 1996.

Al Roth is the George Gund Professor of Economics and Business Administration at Harvard University. He works in game theory, experimental economics, and market design. The best known of the markets he has designed (or, in this case, redesigned) is the National Resident Matching Program, through which approximately 20,000 doctors a year find their first employment as residents. He was involved in the reorganization of the market for gastroenterology fellows, which started using a clearinghouse in 2006. He is one of the founders and designers of the New England Program for Kidney Exchange, for incompatible patient-donor pairs.

Julio Elias writes: In an attempt to increase cadaveric organ donations, some nations have tried to overcome the objections of heirs by enacting into law the principle of "implied consent." However, even with the capture of all potential deceased donor organs, the gap will not be closed.

Most organ procurements efforts in the U.S. have been concentrated on increasing the pool of altruistic donors, such as expanding living donor inclusion criteria and organ donor awareness campaigns. However, all these efforts have failed to increase the pool of donors significantly to alleviate the growing shortage of kidneys and prevent large numbers of people from dying while waiting for a transplant.

I agree with Al: Many people will be horrified by any proposal that allows for monetary compensations for organs and this represents a cost to society. But this does not mean that these costs overwhelm the benefits of eliminating the organ shortage. To my knowledge there are no good estimates of these "repugnancy costs." Even so, I believe they are relatively small when weighted against the number of lives that can be saved. This is a strong force that will push towards a market-based system.

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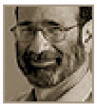
Alvin Roth writes: I agree with Julio that there probably aren't enough potential deceased donors to supply all needed kidneys. There are already more live donors



than deceased donors in the U.S. Kidney exchange is a way to increase live-donor transplants.

Before 2004, in just a few cases an incompatible patient-donor pair and their surgeon were able to locate another such pair and arrange an exchange in which the donor in each pair could give a kidney to the patient in the other. In 2004 Ünver, Sönmez, and I published an article exploring how a centralized kidney exchange could permit transplantation of many more kidneys. In subsequent work we discovered that when the market is thick enough -- when a large number of patient-donor pairs has been assembled -- almost all feasible transplants can be accomplished through exchanges among just two or three patient-donor pairs at a time, and through chains of exchange. We've helped surgeons Frank Delmonico and Mike Rees organize regional kidney exchanges (NEPKE and APD) which now unite dozens of transplant centers, and there is movement towards a national exchange. Dr. Bob Montgomery in Baltimore and Steve Woodle in Ohio and their colleagues have also been pioneers; some description and history are here. (Read more about paired donations in a recent Wall Street Journal article.)

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More on Organ Donations, From The Wall Street Journal

Page One: Kidney Shortage Inspires a Radical Idea: Organ Sales
11/13/07

Page One: Kidney Swaps Seen as Way to Ease Donor Shortage
10/15/07

Interactive Graphic: How Kidney Exchanges Work

Never-Ending Chain: One Surgeon's Twist on Kidney Donations

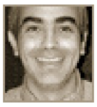
Page One: More Kidneys for Transplants May Go to Young
3/10/07

What Living Organ Donors Need to Know
1/30/07

Page One: The High Price of Keeping Dad Alive
1/20/07

Video: Twentysomething's Tough Decision to Donate

Charts: Trends in Living Organ Donations



Julio Elias writes: The current system of live organ transplants resembles an autarkic economy in which patients in need of an organ transplant are constrained to the organs available in the pool of friends and relatives. The kidney exchange system developed by Al and others is a barter system, and clearly will provide an improvement over the current system.

But a general conclusion of economics is that barter is an inferior system when compared to a money system, since barter requires the coincidence of wants. With the use of computers, and a national registry, multilateral barter is a good possibility, but still less efficient than using general purchasing power; i.e., a market. The main disadvantages of the kidney exchange system are the limitations that only kidneys from relatives and friends can be used and that the exchange must happen at the same time. A market-based exchange does not have such serious limitations.

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Alvin Roth writes: No economist could disagree with Julio that, in general, unrestricted monetary markets have enormous ability to meet human wants. As he points out, with kidney exchange we're trying to achieve many of the benefits of a market without using money. We're able to make progress because kidney exchange thus avoids the repugnance that kidney sales arouse. We're slowly relaxing some constraints like the simultaneity of all transplants in every exchange: The Alliance for Paired Donation has recently begun a "never ending" altruistic donor chain that is still going on.

As market designers, my colleagues and I are often faced with constraints. (We have helped design non-monetary but market-like allocation procedures that assign children to schools in NYC and Boston and operate similarly to labor-market clearinghouses we've helped design for new doctors and older ones.) Sometimes constraints can be removed; sometimes, it looks more promising to work around them.

If Julio and his colleagues want to remove the legal constraint on buying kidneys, my guess is that they will want to understand better the sources of repugnance that have led to laws against such sales in so many countries.

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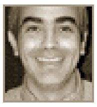

Julio Elias writes: The potential benefits of a market system may have seemed low compared to the costs of implementing a new system when the legal constraints were implemented, since the shortage was not so severe. Currently the kidney waiting list is over 73,000 persons, and in the last 10 years it has grown at an annual rate of 7%. Additionally, improvements in the safety and effectiveness in kidney transplantation have significantly increased the potential benefits.

Programs of financial compensation for living organ donors can take many forms. However, there are certain features that are likely to be common across any compensation system of organ procurement. More importantly, many of those features are in effect in the current system, like the role of the physician and transplant centers in the proper screening and selection of donors, in post-transplant care, and in other steps of the process of organ procurement. A national registry of potential donors is also likely to be assembled with all the relevant information of potential and excluded donors. In a decentralized system, the price of a kidney would be set at the levels that would eliminate the excess demand. Building on the value of life literature, with Gary Becker, we estimate that the price for a kidney would be about $15,000.

The present system imposes an intolerable burden on many very ill individuals, some of whom will die while waiting for a donor. It is time to reconsider the law.

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Alvin Roth writes: It is illegal to sell horsemeat for human consumption in California, not because a persuasive case was made that the costs exceed the benefits, but because 4,670,524 people voted to make it illegal in a 1998 referendum. This and many other examples persuade me there is something about repugnance that we economists need to understand.

Whenever I help design a market, I learn a lot from existing practices, even as I set out to modify them. Explaining what economists already know doesn't inevitably win the day, although such explanations are certainly useful.

So it doesn't seem to me inevitable that Julio and his colleagues' arguments will lead, surely or soon, to a change in the laws banning kidney sales. And if kidney sales remain banned for a long time, other developments (such as cures for kidney diseases, or breakthroughs in using pig kidneys for transplantation) may arrive in time to make kidney sales, and human transplants themselves, unnecessary. This is one reason I have been putting my energy into developing kidney exchange: It's a way to combine economics with surgical know-how to achieve real gains soon. I'll be glad if something even better eventually becomes possible. It's good to attack big problems from all angles. Thanks, Julio, for the discussion.

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Write to Matt Phillips at matt.phillips@wsj.com