



Lesson 9:

Should We Allow a Market for Transplant Organs?

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In this economics lesson, students will analyze and debate the ethical considerations for dealing with a shortage of transplant organs.

Teacher note: This lesson includes the economic concepts of markets and price ceilings and therefore may be most effective after you have introduced markets and price controls to your students.

Description of the lesson

Students will explore how the allocation of different types of resources can be harder than others and may require more ethical consideration. Students will simulate allocating a kidney and learn more about the complexities around this market. They will consider two types of policies—donation only or open market—and the ethical considerations that come with each. Ultimately, students will decide which allocation method is more aligned with their personal ethical principles.

Economics

The sale of transplant organs is illegal in the United States. People may donate organs but not sell them. In other words, the price of transplant organs is set at \$0 and below equilibrium which functions like a price ceiling and results in a shortage. Repealing the law that prohibits the sale of body parts would alleviate the shortage because a higher market price would increase the quantity of organs supplied and decrease the quantity of organs demanded but could have other undesirable consequences.

Ethics

Some people believe that public-policy analysis should involve both ethical reasoning and economic analysis. Outcome-based ethics, with its focus on the consequences of policies, tends to support a legal market for body parts. Duty-based and virtue-based ethics, by contrast, raise concerns about an open or modified market. Duty-based theorists focus on ethical principles or rules that should guide people's actions. Virtue-based ethics focuses on the personal qualities that enable us to do the right things that good people would do. The ultimate decision about organ sales requires people to make a judgment or to rank values or goals based on their ethical framework.

Objectives:

After completing this lesson students will be able to:

- compare and contrast three ethical frameworks to help eliminate the shortage of transplant organs.
- critique two current methods to allocate kidneys (donation only or an open market)
- select and support a particular method to allocate a scarce resource - such as kidneys - using the economic way of thinking together with the ethical frameworks discussed in this lesson.

Standards

[Voluntary National Content Standards in Economics](#)¹

- Standard 3: Allocation
 - Different methods can be used to allocate goods and services. People acting individually or collectively must choose which methods to use to allocate different kinds of goods and services.
- Standard 4: Incentives
 - People usually respond predictably to positive and negative incentives.
- Standard 7: Markets and Prices
 - A market exists when buyers and sellers interact. This interaction determines market prices and thereby allocates scarce goods and services.
- Standard 8: Role of Prices
 - Prices send signals and provide incentives to buyers and sellers. When supply or demand changes, market prices adjust, affecting incentives.

Concepts

Decision-Making/Cost-Benefit Analysis, Markets and Prices, Price Ceilings, Allocation

Time Required

60 minutes

Materials Needed

- Slide presentation: Should We Allow a Market for Transplant Organs?
- Single small prize for students (something they would really like to have—extra credit certificate, candy bar, \$5 gift card, etc.)
- Some mechanism to draw a name of a student (use a website like <https://wheelofnames.com/> or prepare slips of paper with a jar/bucket/etc. to draw the name)
- Copies of Activity 9.1: Kidney Candidates, one per student
- Copy or display PowerPoint of Visual 9.1 Organ Transplant Market
- Copies of Activity 9.2: A Market for Kidneys, one per student
- Pencils or pens, one per student
- Copies of Activity 9.3: The Ethics of the Kidney Market, one per student
- Copies of Activity 9.4: The Ethics of the Kidney Market—Economic and Ethical Decision, one per student
- Copies of Assessment 9: Policy for a More Ethical Allocation of Organs, one per student

¹ Voluntary National Content Standards in Economics: <https://www.councilforeconed.org/wp-content/uploads/2012/03/voluntary-national-content-standards-2010.pdf>

Procedure

1. Display slide 2 of the Slide Presentation : Should We Allow a Market for Transplant Organs? Remind students that economics is the study of how people choose. Ethics is the analysis of right and wrong. Ethical frameworks help explain human behavior and evaluate policies, even if the frameworks seem to conflict with one another.
2. Hold up a small prize or something of value for students to see. Ask if anyone wants this item (ideally many students would be raising their hands enthusiastically).
3. Have the students look around then ask them if the item is scarce (question is on slide 3).
Answer: Students should say yes, it is scarce because there is only one item and more than one person in the room wants it or some variation of that.
4. Slide 3: Ask the students, because this is scarce, how do we decide who gets the item? Ask for student suggestions and create a list of possible ways to allocate or decide who gets the prize. Write this on the board or somewhere where students can see the list. **Answers may vary but include: lottery/raffle, first person to class, highest grade, whoever wants it the most, auction (be sure to add some others that students might not think of – arm wrestle challenge, rock paper scissors competition, anyone wearing polka-dots).** For more help with allocation strategies please see page 11 and 12 of [Stranded–Allocation Strategies Edition by the Georgia Council on Economic Education](#)² or [Lesson 4: Can You Allocate Ethically?](#)³ from the Ethics, Economics and Social Issues curriculum. Teacher note: do not critique the allocation method, as long as it is a possible way to decide who gets it, write it on the board.
5. After about 2-3 minutes of creating a list, talk through 3 or 4 of the listed examples and relate them to deciding who gets the prize demonstrating that the allocation method changes who might end up with the prize. For example, point out the student that was first to sit in their seat today versus the student who might be wearing polka dots. Also point out how hard some methods might be to implement or that the method might not be equitable or favorable. For example, how could we decide who wants a candy bar the most? It also might not be equitable for smaller students to have to compete with football players in the arm wrestle challenge.
6. State that while you like some of these ideas, you have decided to use a lottery today. Draw a name of a student using the method you prepared earlier and award them the prize. Make a mental note if students are upset with this allocation method (i.e., are students complaining that this is not “fair”, did they moan, etc.).

²https://docs.google.com/document/d/1uHD675gf160KJUtlOooG_tahTdQY1PZh/edit?usp=sharing&ouid=101548772430474325355&rtpof=true&sd=true

³ <https://www.econedlink.org/resources/can-you-allocate-ethically/>

7. Display slide 4. State that they are going to explore the ethical considerations in handling a large and growing shortage of transplant organs in the United States and. Because of this shortage, many people die while waiting for a transplant, and others must use expensive medical procedures and equipment to stay alive. While explaining this,
8. Display slide 5 and explain that a **shortage** occurs when the quantity demanded is greater than the quantity supplied at the market price meaning there are more people that want or need an organ than organs available.
Teacher note: Do not use scarcity and shortage interchangeably. Scarcity is a natural condition in economics where a resource is limited. A shortage occurs when a good or service does not meet the demand—typically these are artificially induced by a market change (e.g., price ceiling or price floor).
9. Hand out **Activity 9.1 Kidney Candidates**⁴ and display slides 6/7. Read the instructions to the students and explain that they are the leader of a transplant team, and as the leader they must decide who gets a kidney. Make it clear that they must decide and that not making a choice will result in all possible patients dying. Tell them they have 5 minutes to decide who gets the kidney. An alternative is to make this a group activity – they are a review panel at the hospital and must make the decision.
10. After about 5 minutes begin a group discussion with the whole class (about 10 minutes) with the following questions (questions 1 and 2 are on slide 8 and question 3 is on slide 9): Students will want to tell you their decision immediately. Ask them to wait – you want to talk about the decision-making process first.
 1. Was it hard to decide who got a kidney? *Answers may vary but include: yes, because it was dealing with a human or making a decision about a person.*
 2. What criteria did you use? *Answers may vary but include one or two of the criteria from Activity 9.1 Kidney Candidates. Some students might have used an alternative criteria, in that case ask them what they used and why.*
 3. Slide 8: Using your criteria, who did you choose? *Answers will vary but include one of the people listed in Activity 9.1 Kidney Candidates.*

⁴This activity is an updated revision of a lesson in *American Health Care: A Resource Guide* by Carter and Fischer (1992).

11. Slide 10. Remind or define the term **market** – a market is a place where buyers and sellers go to negotiate the price for goods or services. Tell the students that in our current market for a kidney there were six people who wanted a kidney and only one kidney available. Ask the students “How would an economist describe this market?”. **Answers may vary but should include: There was a shortage of kidneys, there was a larger quantity demanded for kidneys than the number of kidneys available, etc.**
12. Tell the students that a few minutes ago there was only one prize and it seemed pretty easy to decide how to allocate that scarce resource. Display slide 11 and ask the students “Why did the two examples of deciding how to allocate or distribute a scarce resource differ so much? It’s just deciding who gets a scarce item!” **Answers may vary but should include: the difficulty of deciding about a human life versus a simple prize; no one would die if they did not get the prize but if they did not get the kidney they were going to die within a year.** Point out to the students that there is a difference in ethical considerations between the two scarce resources. In the example of the small prize there is less ethical consideration needed about who gets it, but ethics plays a larger role in determining how to save people’s lives.
13. Display Slide 12 (**Visual 9.1 Organ Transplant Market**) and provide each student with a copy of **Activity 9.2 A Market for Kidneys**. Ask students what the quantity supplied of kidneys is in the example. **42,800** Ask students what the quantity demanded is in the example. **89,000** Is this a shortage or a surplus? **Shortage**
14. Display slide 13 – the supply and demand graph for the kidney market. Explain the definition of **price ceiling** is the mandated maximum amount a seller is allowed to charge for a product or service and is usually set by law. Tell the students that federal law prohibits buying and selling transplant organs. Only donated organs are acceptable. This means that in the market for kidneys there is an effective **price ceiling** with the price set at \$0 resulting in a shortage of kidneys. Explain and show the students that graphically the price ceiling is located below the equilibrium price.
15. Tell students that some people suggest that the shortage would be alleviated if people could buy and sell organs for transplant. Although it may sound disturbing to pay for body parts, the opportunity to buy and sell organs could save lives and improve the quality of life for many people.
16. Have students work on **Activity 9.2 A Market for Kidneys** in groups of 2-3. Display slide 14 with some instructions. Give them about 10 minutes to work through the questions. This activity can also be done individually. Answers to questions can be found in Activity 9.2 A Market for Kidneys--ANSWER KEY.

17. The last two questions are designed to get students thinking about ethics and concerns about changing the current kidney allocation method. Explain to students that we cannot simply look at the number of lives saved but need to look more into the ethical decision around opening up the market for kidneys and removing the \$0 price ceiling. We have to use ethical frameworks in our cost-benefit decision-making. Define for students that **cost-benefit analysis** is a tool to make decisions based on the expected costs of the decision and the expected benefits that people would receive from that decision.
18. Display slides 14 -17 and define the following ethical frameworks that are key to the decision-making process. Note that these definitions are also on their Activity 9.3: The Ethics of the Kidney Market sheets.
1. **Outcome-based ethics:** a moral philosophy that discerns right or wrong action based on the consequences produced by the action. People concerned with outcome-based ethics might be concerned about the number of kidneys available to consumers and possibly eliminating the shortage and waiting list
 2. **Virtue-based ethics:** a moral philosophy that discerns right or wrong based on whether one's actions contribute to the formation of good character. People concerned with virtue-based ethics might be concerned that people buying/selling organs might open the door to questionable behavior like stealing organs from minors or other less powerful individuals to then sell on the market.
 3. **Duty-based ethics:** a moral philosophy that discerns right or wrong based on the analysis of one's obligations. People who focus on virtue-based ethics might be worried whether or not a "good" person would or should buy human organs.
19. Hand out **Activity 9.3: The Ethics of the Kidney Market**. Display slides 18 – 19. Instruct them that as a group we will walk through Questions 1 and 2 on the worksheet and then they will need to finish on their own during class. Start by asking Question 1, which is also on slide 18 and allow several students to share their thoughts and ideas to build the discussion and conversation. Work through the worksheet as a guided discussion and suggested answers can be found on Activity 9.3: The Ethics of the Kidney Market ANSWERS. Next, work on Questions 3 and 4 (slide 19) on Activity 9.3: The Ethics of the Kidney Market.
- Teacher note: for Question 3 it is unlikely that the students will know about HRSA but they might say CDC given current events or news. You can provide that information for students about the specific people in charge or have them explore that themselves at the [Organ donations and policy website](https://www.organdonor.gov/about-us/legislation-policy) if you have the time⁵.*

⁵ See this website for more information about Organ donations and policies:
<https://www.organdonor.gov/about-us/legislation-policy>

20. Finally, tell the students that there are instances where it is easy to agree, for example many of us wanted a similar outcome of saving as many people as we can. Additionally, the agent, or person deciding who gets a kidney is common in this case. The action, or policy we think achieves the outcome might be where there is most debate in this instance. You all will work in groups of 2-3 to explore how ethics affect two kidney allocation policies—donation only or an open market.
21. Put students in groups of 2-3 and have them work on **Activity 9.4: The Ethics of the Kidney Market—Economic and Ethical Decision** for about 10 minutes. Remind students that we just discussed some ideas for the ethical and economic concerns of each policy but they will need to expand on those ideas or come up with their own concerns. Have students work together, discuss, and answer the questions for each policy to help fill in the table on Activity 9.4: The Ethics of the Kidney Market—Economic and Ethical Decision.
22. Have students show by moving to a side of the room, show of hands, or polling in some way what they believe is the most ethical way to handle this economic decision—Donation Only, Open Market, or Other. As students are making a choice, make note of how hard the choice is for the students. *You can tell them that everyone will get a chance to come up with their own policy and campaign for it in just a few minutes.*

Closure

23. Close the lesson by reviewing the key concepts with students by discussing the following questions on slide 17:
 1. Economics is the study of choices but how can ethical frameworks help make these choices? ***Answers will vary but may include: Ethics are needed whenever a decision is made. This is to help maintain policies that are following not just the market but what could be in the interest of people who are not always front and center in decisions.***
 2. Scarcity necessitates that we allocate resources. How does the type of resource we are distributing affect the ethical decisions we make? ***Answers will vary but may include: The type of resource matters—some resources are needed to sustain life while others might just be resources that we want or do not affect living/dying. The resources that matter to living or dying might need more ethical consideration as we have harder decisions to make.***
 3. Ask the students what are the three main ethical frameworks and the main focus of that framework? ***Answers will include a description of 1) Outcome-based ethics: a moral philosophy that discerns right or wrong action based on the consequences produced by the action. 2) Virtue-based ethics: a moral philosophy that discerns right or wrong based on whether one's actions contribute to the formation of good character. 3) Duty-based ethics: a moral philosophy that discerns right or wrong based on the analysis of one's obligations.***
 4. Tell students their homework is going to be evaluating other options beyond the donation or open market policy. Everyone will expand the economic and ethical frameworks to research and propose alternative methods to allocate a kidney.

Assessment

24. Distribute copies of **Assessment 9.1: Policy for a More Ethical Allocation of Organs** to each student.

Some sample assessment items:

1. Use the following fictitious graph (graph is in student version) about the kidney market to answer the question. Suppose the government increases the price ceiling from \$0 and allows up to \$19,000 for kidneys. How much does that reduce the shortage of kidneys?
 - a. 25,000
 - b. 35,000**
 - c. 60,000
 - d. 55,000
2. Creating a policy for organ transplants that would save the largest number of human lives would likely follow which ethical framework?
 - a. Virtue-based ethics
 - b. Duty-based ethics
 - c. Justice-based ethics
 - d. Outcome-based ethics**
3. Some may argue that opening up the market for kidneys to be bought and sold might have an unintended consequence that people might steal kidneys and sell them in the market. Which ethical framework is this scenario likely to violate?
 - a. Action-based ethics
 - b. Duty-based ethics**
 - c. Justice-based ethics
 - d. Outcome-based ethics

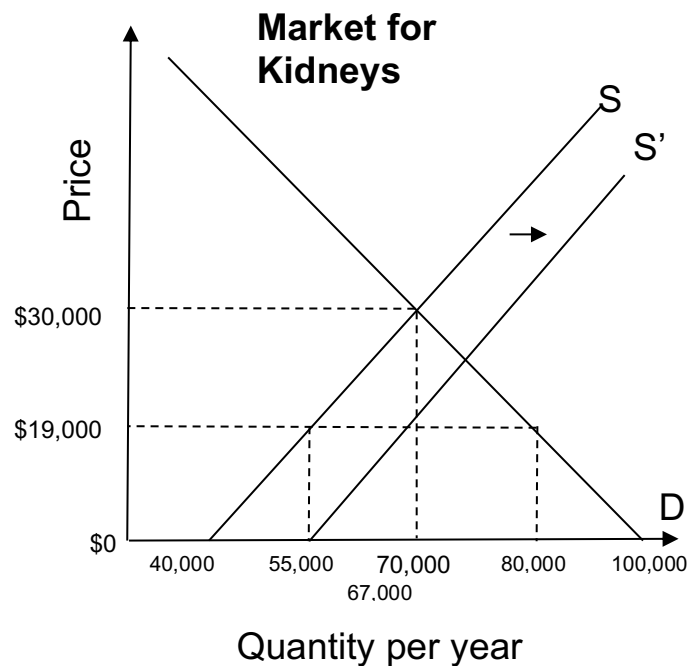
Essay/short answer assessment:

1. Explain why an ethical framework is needed depending on the type of good we are allocating. Provide 1-2 examples of goods or services that might need an ethical framework when considering who gets the good/service.

Extension

1. States like California are changing laws so that Organ Donation is the Default and patients would need to opt out rather than opt in. Have students review this brief explanation of the opt out law for organ donation from the [Contra Costa Senior Legal Services](#)⁶ page. Have students rethink how this law or laws like this would affect the donation-only market. Are there any ethical considerations for a policy like this?

Suggested answer and ideas for discussion: With the opt out policy there should be an increase in supply of kidneys with that policy so that the shortage has lessened. The image below is a simplified drawing showing the supply curve increased and that the shortage of kidneys at the price ceiling of \$0 has decreased from 40,000 to 25,000 kidneys. Note that the graph and numbers are not accurate but are there to just show and demonstrate that the shortage of kidneys should decrease. You could show the graph without numbers.



2. Have students explore the current allocation method from the U. S. Department of Health & Human Services (DHHS). Students should use the following table to explore the ethical considerations currently in place for organ donation.

<https://optn.transplant.hrsa.gov/patients/about-transplantation/how-organ-allocation-works/>

In the space provided below explain briefly in 3-4 sentences some of the current practices in place for organ donation.

⁶ Contra Costa Senior Legal Services “New Law in California Makes Organ Donation the Default” <https://www.ccsls.org/2019/01/17/>

3. Answer the questions in the table for each type of framework based upon the current allocation method used by the DHHS. What is the DHHS doing to answer the ethical concerns of organ donation? Then rank the order from most important (1) to least important (3) in your opinion to solve the issue of a shortage of organs.

Answer the question for each ethical framework based on the ethical and economic choice being considered.		Your Ranking
Outcome-based ethics <i>“Whose and which outcomes matter most?”</i>		
Virtue-based ethics <i>“Does this contribute to the formation of good character and virtues?”</i>		
Duty-based ethics <i>“What are the obligations to follow (either formal or informal)?”</i>		

4. Based on your ranking and discussion in the table explain how the three ethical frameworks can help you make a more ethical economic decision. Include in your answer a policy or decision recommendation that you feel should be implemented by the US DHHS.

References

Organ Procurement and Transplantation Network. OPTN. (n.d.). Retrieved March 12, 2022, from <https://optn.transplant.hrsa.gov/patients/about-transplantation/how-organ-allocation-works/>

Wight, J. B. (2015). *Ethics in economics an introduction to moral frameworks*. Stanford Economics and Finance, an imprint of Stanford University Press.

Visual 9.1 Organ Transplant Market: Quantity Demanded Exceeds Quantity Supplied

Federal law prohibits buying and selling organs for transplant.

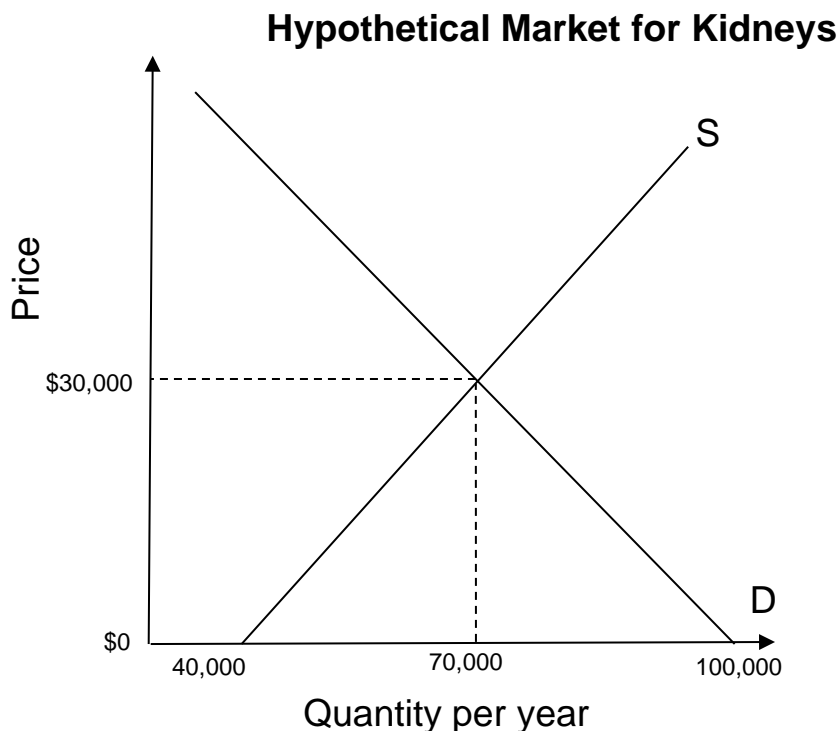
In 2022:

- Doctors transplanted more than 42,800 organs in the United States—setting an annual record.
 - More than 34,000 from deceased donors and about 6500 from living donors
- As of April 2023, there are currently over 103,000 patients on the waiting list (all organs).
 - Nearly 89,000 for a kidney, over 10,000 for a liver, and almost 3,400 waiting for a heart
- Around 8000 patients die every year while waiting for a transplant. That is about 22 people per day and almost one an hour.

The waiting list for transplants increased at twice the rate of donations.

Survival rates for transplant recipients continued to increase.

If people were allowed to buy and sell organs, here's what a **hypothetical** supply and demand curves for kidneys would look like.



Source: U.S. Organ Procurement and Transplantation Network, administered by the United Network for Organ Sharing. More recent data are available at <https://optn.transplant.hrsa.gov/data/view-data-reports/national-data/> (for simplicity numbers in the graph were rounded based on 2022 data)

Activity 9.1: Kidney Candidates

Your task: You are the leader of a Transplant Team, as the leader you must decide who gets a kidney. Using any of the criteria listed below or criteria you came up with on your own, select one (1) patient for a kidney transplant. **Assume that all suffer equally, and the matter is urgent. They are all a match to the available kidney. Those who do not receive a kidney will die within a year.**

List of criteria for consideration: **their need, merit, contribution to society (past or present), their ability to pay, their age, or some other criteria.**

Mateus

24-year-old man. He is unmarried but his girlfriend is expecting their first child soon. Currently in law school working on a degree in immigration law with the goal to assist refugees to safely and quickly becoming citizens. The reason for kidney failure is unknown. He will have about \$250,000 in debt between undergrad and law school. Potential yearly income once he graduates: \$105,000 with potential lifetime earnings: \$4,932,000. Health Insurance: Currently through the Health Insurance Marketplace with the hope of having insurance with his law firm when he graduates in 2 years.

Sybil

18-year-old woman. She is graduating from high school this spring with a 3.89 GPA. She was accepted at Arizona State University to become a high school social studies teacher but with the news of her kidney cancer diagnosis she has decided to stay in Oklahoma and attend her local community college then state school. She lives with her parents. Potential yearly income: \$56,000. Potential lifetime earnings: \$993,023. Health Insurance: Through her parents' health insurance.

Francis

79-year-old man. Retired airline pilot who was making around \$150,000 at the end of his career. He has about \$6,000,000 between social security, pension, and personal savings. He and his wife drive every two months from Virginia to Georgia to visit their son's family including three grandsons. His kidney failure is due to an incurable kidney disease. Health Insurance: Medicare.

Edwina

37-year-old woman with three kids ages 4-12 years old. Her husband passed away 2 years ago due to an unexpected heart attack. She is a pediatric nurse working the overnight shift while her sister stays at home while her kids sleep at night. Her kidney failure is a result of a hereditary condition. Present yearly income: \$77,000. Potential lifetime earnings: \$2,802,000. Health insurance: Through her employer.

Johana

50-year-old woman living with her wife and two high school aged kids. She runs a non-profit that focuses on providing services, food, clothing, and other necessities to women in need. She has been taking medicine for about five years to help manage her high blood pressure and type II diabetes. Present yearly income: \$68,000 plus \$72,000 from wife's job. Potential lifetime earnings: \$5,340,000 Health Insurance: Through the Health Insurance Marketplace but her kids are on her wife's insurance.

Felix

30-year-old man who has been living in a homeless shelter for the last few weeks. Currently unemployed and was let go from his contractor job when he was late for work after his car broke down for the fifth time that month. The reason for kidney failure is unknown. He has less than \$1000 in cash with him and no prospects for a job without reliable transportation. Health Insurance: None.

Activity 9.2 A Market for Kidneys⁷

Name _____

Federal law prohibits buying and selling organs for transplant.

In 2022:

- Doctors transplanted more than 42,800 organs in the United States—setting an annual record.
 - More than 34,000 from deceased donors and about 6500 from living donors
- As of April 2023, there are currently over 103,000 patients on the waiting list (all organs).
 - Nearly 89,000 for a kidney, over 10,000 for a liver, and almost 3,400 waiting for a heart
- Around 8000 patients die every year while waiting for a transplant. That is about 22 people per day and almost one an hour.

The waiting list for transplants increases at twice the rate of donations.

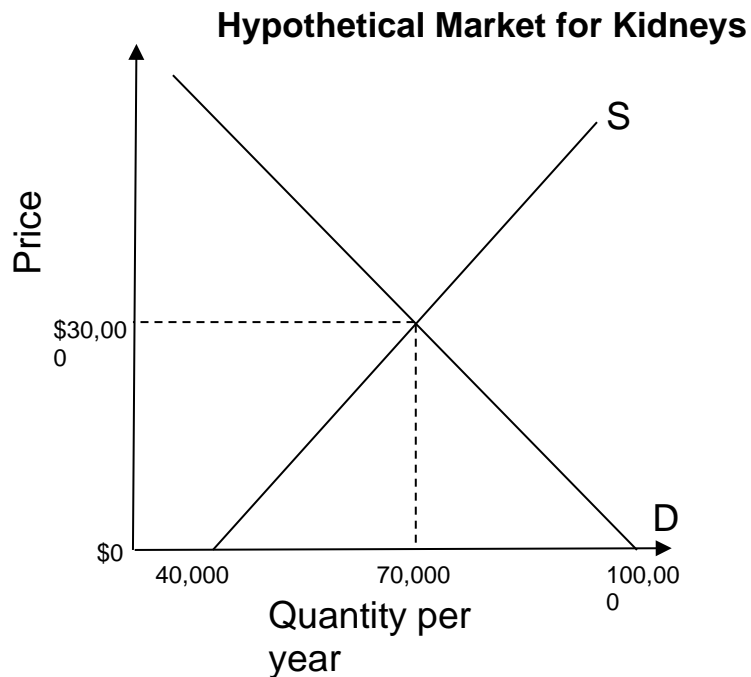
Survival rates for transplant recipients continued to increase.

Kidneys are supplied for transplant in two ways:

1. through people dying, or
2. through living people giving up a kidney. Everyone has two kidneys and can survive on just one. Kidneys from living people are generally higher quality, and transplants with these kidneys tend to be more successful.

Answer the following questions **based on the graph**, your economic knowledge, and ethics.

If people were allowed to buy and sell organs, here's what a **hypothetical** supply and demand curves for kidneys would look like:



⁷ Data for the graph came from the U.S. Organ Procurement and Transplantation Network, administered by the United Network for Organ Sharing. More recent data are available at <https://optn.transplant.hrsa.gov/data/>. For simplicity numbers were rounded based on 2022 data.

Activity 9.2 A Market for Kidneys (continued)

Name _____

1. Federal law currently bans the sale of kidneys. This effectively establishes a maximum legal price for kidneys of \$0. This is called a price ceiling. Because of the ban, doctors may use only donated kidneys for transplants. **Based on the graph**, how many kidneys will people supply (donate) for transplanting when the price is \$0?
2. Why would anybody donate a kidney if the price is \$0?
3. **Based on the graph**, how many kidneys do patients demand when the price is \$0?
4. The shortage in kidneys is the difference between the quantity demanded and the quantity supplied when the price is \$0. **Based on the graph**, what is the amount of the shortage?
5. What do you think caused the shortage?
6. Suppose the federal government repealed the law banning the sale of organs. If this were to happen, some consumers on the waiting list would begin to offer higher prices for a kidney. The market would eventually reach equilibrium where supply and demand curves intersect. At this equilibrium, what is the market price? What would be the equilibrium quantity of kidneys people would buy?
7. How has the rise in price affected the behavior of suppliers? Hint: compare the new equilibrium quantity with your answer to Question 1. How much of a shortage exists at the equilibrium?
8. Why do you think people would sell a kidney for the equilibrium price vs. donating a kidney at \$0?
9. Assuming all other factors are constant, would an open market for kidneys result in more or fewer kidney-related deaths each year?
10. Would an open market in kidneys be equitable among people with different incomes? Argue both sides of this issue.

Activity 9.2 A Market for Kidneys – ANSWER KEY

Name _____

1. Federal law currently bans the sale of kidneys. This effectively establishes a maximum legal price for kidneys of \$0. This is called a price ceiling. Because of the ban, doctors may use only donated kidneys for transplants. **Based on the graph**, how many kidneys will people supply (donate) for transplanting when the price is \$0?

$Q_s=40,000$

2. Why would anybody donate a kidney if the price is \$0?
Answers may vary but could include helping a friend, because they want to do something kind, they may have died and are an eligible donor, etc.

3. **Based on the graph**, how many kidneys do patients demand when the price is \$0?

$Q_d=100,000$

4. The shortage in kidneys is the difference between the quantity demanded and the quantity supplied when the price is \$0. **Based on the graph**, what is the amount of the shortage?

$Shortage = Q_d - Q_s = 100,000 - 40,000 = 60,000$

5. What do you think caused the shortage?

Answers may vary but could include: There are not enough people who are willing to go through the process of donating a kidney.

6. Suppose the federal government repealed the law banning the sale of organs. If this were to happen, some consumers on the waiting list would begin to offer higher prices for a kidney. The market would eventually reach equilibrium where supply and demand curves intersect. At this equilibrium, what is the market price? What would be the equilibrium number of kidneys people would buy?

$Price=\$30,000$ $Quantity=70,000$

7. How has the rise in price affected the behavior of suppliers? Hint: compare the new equilibrium quantity with your answer to Question 1. How much of a shortage exists at this price?

There are 30,000 more kidneys available ($70,000-40,000=30,000$). There is no shortage at equilibrium

8. Why do you think people would sell a kidney for the equilibrium price vs. donating a kidney at \$0?

Answers may vary but could include: People were unwilling to go through surgery or other procedures without compensation. They have high opportunity costs because of missing work or time with their family. Getting paid made them more likely to undergo the surgery.

9. Assuming all other factors are constant, would an open market for kidneys result in more or fewer kidney-related deaths each year?

Fewer kidney-related deaths. Before there were 100,000 kidneys needed but only 40,000 supplied so 60,000 people were without a kidney. After there is an open market there is no shortage but there are people who are priced out of getting a kidney because they have to pay somehow (insurance, cash, etc.). Therefore, assuming there are still 100,000 people who need a kidney transplant there are 70,000 kidneys supplied, meaning only 30,000 people go without a kidney due to lack of being able to pay for it.

10. Would an open market in kidneys be equitable among people with different incomes? Argue both sides of this issue.

Answers may vary but could include: There would be fewer kidney-related deaths so there would likely be fewer poor people who are left without a kidney. However, with the open market and kidneys costing \$30,000 that would require either insurance or cash to pay for the kidney. People with lower income may not have a job that has insurance that could allow them to get the kidney or if they had to pay cash, they simply do not have cash to do so.

Activity 9.3: The Ethics of the Kidney Market

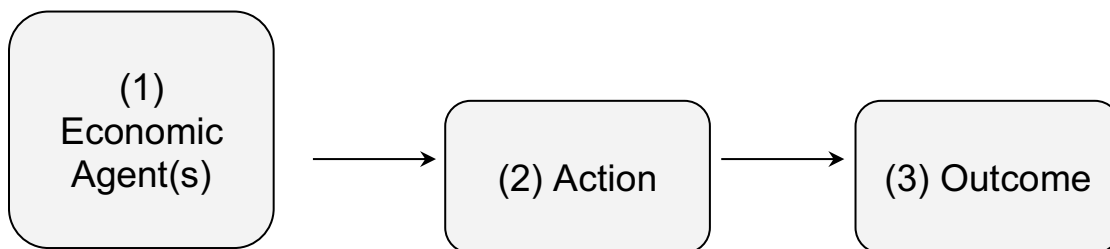
Outcome-based ethics: a moral philosophy that discerns right or wrong action based on the consequences produced by the action.

Virtue-based ethics: a moral philosophy that discerns right or wrong based on whether one's actions contribute to the formation of good character.

Duty-based ethics: a moral philosophy that discerns right or wrong based on the analysis of one's obligations.

1. In the space below, explain the ethical and economic issue of a donation only policy for kidneys. What are 2-3 relevant facts about the situation?

2. In the space below, explain the ethical and economic issue of an open market policy for kidneys. What are 2-3 relevant facts about the situation?



In all decisions, an *economic agent* takes an *action* (or makes a choice) that is expected to produce certain *outcomes*.

3. Who is making the choice for how to decide who gets a kidney (economic agent(s))?

4. What outcomes do they hope to achieve with a kidney policy like donation only or open market (outcome)?

Activity 9.3: The Ethics of the Kidney Market ANSWERS

Outcome-based ethics: a moral philosophy that discerns right or wrong action based on the consequences produced by the action.

Virtue-based ethics: a moral philosophy that discerns right or wrong based on whether one's actions contribute to the formation of good character.

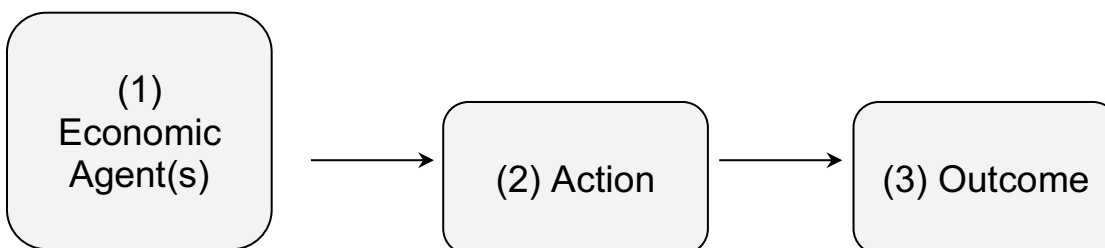
Duty-based ethics: a moral philosophy that discerns right or wrong based on the analysis of one's obligations.

1. In the space below, explain the ethical and economic issue of a donation only policy for kidneys. What are 2-3 relevant facts about the situation?

Answers will vary but may include: there's not enough kidneys for people who need it or some people might die waiting for a kidney. Note to the students that this is a major ethical and economic issue of a donation only policy.

2. In the space below, explain the ethical and economic issue of an open market policy for kidneys. What are 2-3 relevant facts about the situation?

Answers will vary but may include: People who cannot buy a kidney might still die so it's not equal for people with lower income or those who cannot pay, there might be people who harm others for their kidney to make money, there might be a black market for buying and selling organs, etc. Note to the students that this is a major ethical and economic issue of an open market policy.



In all decisions, an *economic agent* takes an *action* (or makes a choice) that is expected to produce certain *outcomes*.

3. Who is making the choice for how to decide who gets a kidney (economic agent(s))?
Answers will vary but may include: Government, doctors, The Health Resources and Services Administration (HRSA), Centers for Medicare and Medicaid Services (CMS), or Centers for Disease Control and Prevention (CDC).
4. What outcomes do they hope to achieve with a kidney policy like donation only or open market (outcome)?
Answers will vary but may include: saving as many lives as possible, having more kidneys available for people who need it, etc.

Activity 9.4: The Ethics of the Kidney Market—Economic and Ethical Decision

Discuss and answer the questions in the table for each type of framework based on the discussion from class. Be sure to expand upon the ideas that were previously brought up or come up with your own new ideas. **Then circle the policy (Donation only or Open Market)** that you feel does the best job at answering that question ethically.

Outcome-Based Ethics <i>"Whose and which outcomes matter most?"</i>	
Donation only	Open Market
Virtue-based ethics <i>"Does this contribute to the formation of good character and virtues?"</i>	
Donation only	Open Market
Duty-based ethics <i>"What are the rules to follow (either formal or informal)?"</i>	
Donation only	Open Market

Based on your work and discussion with your partner explain how the three ethical frameworks can help you make a more ethical economic decision. Include in your answer a policy or decision recommendation.

Activity 9.4: The Ethics of the Kidney Market–Economic and Ethical Decision ANSWERS

Discuss and answer the questions in the table for each type of framework based on the discussion from class. Be sure to expand upon the ideas that were previously brought up or come up with your own new ideas. **Then circle the policy (Donation only or Open Market)** that you feel does the best job at answering that question ethically.

<p>Outcome-Based Ethics <i>“Whose and which outcomes matter most?”</i></p>	
<p>Donation only</p> <p><i>Answers may vary but include: People should have more of a choice about donating their organs and not forced or incentivized with money.</i></p>	<p>Open Market</p> <p><i>Answers may vary but include: There will likely be more kidneys available so there will be more people saved from kidney failure.</i></p>
<p>Virtue-based ethics <i>“Does this contribute to the formation of good character and virtues?”</i></p>	
<p>Donation only</p> <p><i>Answers may vary but include: people have to do this out of the goodness or kindness of their heart showing they have good character.</i></p>	<p>Open Market</p> <p><i>Answers may vary but include: people are getting paid to give their kidney so they are not doing it out of kindness but to get something for themselves.</i></p>
<p>Duty-based ethics <i>“What are the rules to follow (either formal or informal)?”</i></p>	
<p>Donation only</p> <p><i>Answers may vary but include: there is no money incentive so people will likely not break laws or hurt others to get a kidney.</i></p>	<p>Open Market</p> <p><i>Answers may vary but include: there will be a formal market set up with regulations and rules from some governing body. There might be some illegal or black markets forming because of the monetary incentive so innocent people could get hurt.</i></p>

Based on your work and discussion with your partner explain how the three ethical frameworks can help you make a more ethical economic decision. Include in your answer a policy or decision recommendation.

Assessment 9.1 Policy for a More Ethical Allocation of Organs

Pretend you are leading the team of experts for the Organ Procurement and Transplantation Network (OPTN)⁸ to create a policy that should be adopted to allocate kidneys. Your team must present to a panel of leaders with OPTN and you are to share your expert opinion based on the ethics and ethical frameworks we've discussed in class. Create a visually appealing infographic⁹ that you could share with the panel. On that infographic please be sure to answer the following questions:

1. What policy are you proposing to allocate kidneys? Make sure this is the title of your infographic and your panel does not have to hunt for this.
2. What are the most important outcomes you are hoping to achieve (e.g., safety of procedure, number of donations, lives saved, etc.)?
3. Thinking about the outcome-based ethics framework related to your allocation method, whose and which outcomes matter most?
4. Thinking about the virtue-based ethics framework related to your allocation method, does this contribute to the formation of good character and virtues?
5. Thinking about the duty-based ethics framework related to your allocation method, what are the rules to follow (either formal or informal)?
6. In what ways do you think this improves upon the two allocation methods and policies (donation only or open market) discussed during the lesson?

Creating your Infographic¹⁰

What is an infographic?

A chart, graph, or other image accompanied by minimal text to give an easily understood overview of a complex subject. It should be visually striking using illustrations and graphic elements rather than large blocks of text to share information to a person or group of people.

Some tips for creating an infographic:

- Write a catchy headline—for you this should be your policy. Make sure it's large and catches people's attention and gives them a bit of information about what you are sharing.
- Keep the infographic clean without a lot of elements. Do not use large amounts of text or distracting images. Use visual elements to communicate rather than large amounts of text.
- Bullet points can be helpful; but keep them brief.
- Use color but make sure they are not distracting and complement each other.
- Your infographic should flow like a story and bring the reader's attention from top to bottom and beginning to end.
- Make sure you choose fonts that are easy to read and are large (especially if you have to present this to your classmates or the panel of experts in some way)
- Cite your sources where appropriate!

⁸ <https://www.organdonor.gov/about-us/legislation-policy/optn>

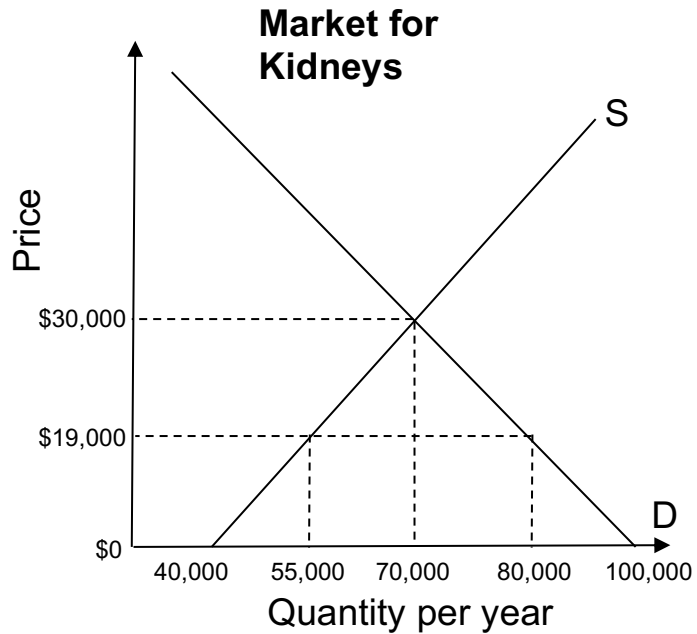
⁹ Tools like [Canva](#) can be a good place to start but feel free to use whatever program you like.

¹⁰ Tips and information can be found online including [here](#).

Assessment 9.2

Some sample assessment items:

1. Use the following fictitious graph about the kidney market to answer the question.



Suppose the government increases the price ceiling from \$0 and allows up to \$19,000 for kidneys. How much does that reduce the shortage of kidneys?

- a. 25,000
 - b. 35,000
 - c. 60,000
 - d. 55,000
2. Creating a policy for organ transplants that would save the largest number of human lives would likely follow which ethical framework?
 - a. Virtue-based ethics
 - b. Duty-based ethics
 - c. Justice-based ethics
 - d. Outcome-based ethics

3. Some may argue that opening up the market for kidneys to be bought and sold might have an unintended consequence that people might steal kidneys and sell them in the market. Which ethical framework is this scenario likely to violate?
 - a. Action-based ethics
 - b. Duty-based ethics
 - c. Justice-based ethics
 - d. Outcome-based ethics

Essay/short answer assessment:

1. Explain why an ethical framework is needed depending on the type of good we are allocating. Provide 1-2 examples of goods or services that might need an ethical framework when considering who gets the good/service.