**Bioethics – updated web site tree and content**

**Page 1: Bioethics**

* What is ethics and why is it important?
* What is the difference between ethics and bioethics?
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* What careers are there in bioethics?
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**What is ethics and why is it important?**

Question: Does acting ethically mean the same thing as being a good person?

Share this video with others you feel are good people and see how they respond to the situations presented. What would you do?

\*\*\* VIDEO \*\*\*

Did you ever wonder why we live as we do? Why do we have school? Taxes? Health insurance? Elected officials? Countries and boarders? Cars? Smartphones?

Did you ever wonder why bad things happen in our world? Like why do we have wars? Slavery? Pollution? Poverty? Crime? Violence?

All of these things did not happen by chance. They are the result of ***ethical*** ***decision making***. All things happen because of the decisions of individuals and groups of people who either create change or remain silent as change happens.

As the trolley problem shows, decisions can be complex. How do you make the right decision? How do you behave as a good person? Do you save the most people? Do nothing at all? Do you find out why those people were tied to those tracks in the first place?

To become proficient in making ethical decisions, it helps to understand ethical concepts. For example, are all these words synonyms for the word ' *ethical*'?

Make a list of these words and define them in your own words:

* Justice
* fairness
* equality
* legal

Would everyone you know define these in the same way?

What about your values? Where did you get your values? Do you consider them carefully and change them as you learn?

Here is a list of some values:

* Honesty
* Duty
* Happiness
* Loyalty
* Compassion
* Fairness
* Safety
* Wealth
* Freedom
* Being accepted

When making a decision, which of these values take priority? Is it the same for all of your friends, family and leaders? This is what makes ethics complex. ***Ethics emerges when values come into conflict.*** But how does a person or group of people address different values to make the most ethical decision? Can you see why it may be difficult to find clear right answers when making ethical decisions?

Here are some questions that may help you decide whether ethics in important!

*If a company develops a vaccine that everyone needs, should everyone get access to it? Including those who cannot afford it? If so, who should pay for that?*

*Should everyone have access to good food and water? Including those who cannot afford it? If so, who should pay for that?*

*If having a smartphone or second car means communities will have polluted water and a lower quality of life, should you purchase them?*

*Should people in power like company executives have salaries hundreds of times higher than the cost of living where their employees make less than the cost of living?*

*Should a person be excluded from having certain jobs or living in certain places because of where they were born or how they look?*

If you feel these are important questions, then you are interested in ethics! Ethics and ethical decision making processes provide the means of addressing these complex issues.

**What is the difference between ethics and bioethics?**

Ethics is a broad field that seeks to understand concepts of right and wrong. There are 3 ares of ethics: ***metaethics***, ***normative ethics*** and ***applied ethics***.

***Metaethics*** focuses on what exists in the universe. These can physical like a galaxy, rock or person, or nonphysical like a thought, spirit or god. Questions that metaethicists ask include: What can we know? What is important? Are their universal truths? Do we have a soul? Is there a god? What does it mean to exist?

***Normative ethics*** involves establishing standards that can determine what is right and wrong. An example is the ‘Golden Rule’: Do to others only what you would have them do to you. Such standards are often considered using three theories:

* **Virtue** – A person or group should exhibit good moral character as evidenced by moral behavior.
* **Duty** – It is a person’s or group’s duty to not hurt another, be fair, treat people as equals, take care of one’s self, continue to learn and improve, to follow moral codes, etc.
* **Consequences** – The outcome of a person’s or group’s actions will result in the most good for the most people.

Applied Ethics involves the analysis of specific controversial moral issues such as abortion, euthanasia, animal rights, pollution, etc.

***Bioethics*** is a field within applied ethics that focuses on ethical issues that relate to biology and biological systems. Bioethics generally includes *medical ethics*, *animal ethics* and *environmental ethics* and how these overlap. Some questions bioethicists ask include: How should we use a person’s genomic data? Should we use animals to grow human organs? How should we distribute a new vaccine? How do we manage cybernetic technologies like the brain-computer interface? A key analysis approach in bioethcs is the four-principle approach developed by Tom Beauchamp and James Childress that consists of four universal principles: (1) autonomy, (2) non-maleficence, (3) beneficence, and (4) justice used in ethical reasoning and decision making.

**Page: Careers in Bioethics**

Bioethics is an important discipline and can be a stand-alone career or an important component of your education that uniquely enables you to excel in other careers. A degree in bioethics enables you to understand the issues and consequences of medical decisions, treatment plans, biological research, health policy research, environmental consequences of industry, decisions in agriculture and pharmaceutical production, and many other areas. However, many other careers would benefit from training in bioethics (or ethics more broadly) including engineering (agricultural, biological, biomedical, chemical, architectural, and others), the physical sciences (biology, chemistry, materials and others), the social sciences (psychology, sociology and others), humanities and the arts (graphic arts, architectural design, art, history, English, literature, and others), law and others. You can earn bachelors (BS), masters (MS) or doctoral (PHD) degrees in Bioethics and even dual title PHDs (PHD in Bioethics and PHD in another discipline).

**Here are some links to job postings:**

Hastings center:

<https://www.thehastingscenter.org/publications-resources/bioethics-careers-education/jobs-fellowships/>

American Society for Bioethics and the Humanities:

<https://asbh.org/professional-development/career-opportunities>

# Page: What are ethical frameworks

As people in this world, and good citizens, we are concerned not only with what actions are morally right and morally wrong, but what ***makes*** actions morally right or morally wrong.  The key is to understand the ***reasoning*** that we employ in ethical decision making so we can become more proficient.

***Ethical frameworks*** are perspectives useful for reasoning what course of action may provide the most moral outcome. In many cases, a person may not use a reasoning process but rather do what they simply feel is best at the time. Others may reflexively use a principle they learned from their family, peers, religious teachings or own experiences. The study of ethics has provided many principles that can aid in ethical decision making. Some of the most common are captured in the following 5 ethical frameworks:

* **Virtue ethics**: What is moral is what makes us the best person we could be.
* **Deontology**: What is moral is what follows from absolute moral duties.
* **Utilitarianism**: What is morally right is what generates the best outcome for the largest number of people.
* **Rights-based Ethics**: What is moral is that which is in accord with everyone's rights.
* **Care-based Ethics**: What is moral is that which promotes healthy relationships and the well-being of individuals and their interdependence.

The videos below provide a description of these.

Please remember that these and other ethical frameworks are considered differently by people from diverse societies around the world including Asian, African, Native American and others.

**\*\*\* VIDEOS \*\*\***

# What is an ethical decision-making framework?

# Ethical decision making may be the most important skill you develop in your life. Change in your life for the better or worse happens at decision points. Do I finish this assignment, take that class, go to that party, chose that college, etc. Some decisions have much deeper consequences. Like do I cheat on that test, lie to my parents, or follow along when someone asks me to do something I know is wrong.

# Like any skill, however, proficiency requires an understanding of the technique and a lot of practice. No one becomes good at singing, playing an instrument or sport, or solving math or science problems without understanding how it’s done and spending a lot of time doing it.

# So let’s start with a defined technique! Here is a formal process for making ethical decisions. Take the time to understand it.

# Ethical decision-making process:

# Look for and identify ethical issues. What feels wrong?

# Obtain unbiased facts and look for distorted or missing information.

# Identify the stakeholders and their motivation and influence. Understand situational factors.

# Identify the values and look for competing values.

# Seek additional assistance and foster open discussion. Reinforce the values of mutual respect and reason-giving.

# Formulate solutions using best-known ethical frameworks as a guide.

# Evaluate proposed alternatives including potential consequences.

# Select and implement the most ethical solution.

# Monitor and assess the outcome.

# Work to avoid future problems.

# *Implementing the process*

# Becoming an expert at ethical decision making takes time! The 10 steps above are easy to remember, but using the process requires skill. It is like having someone show you the keys on a piano and explaining a sheet of music then asking you to play Beethoven’s Moonlight Sonata.

# A bit of discussion on the process can help. The first step is key. You can miss a lot if you are not looking for it. You first need to develop a *moral radar*. When things are happening, you want to ask, is this ethical. Fortunately, most people have some level of ethics built in. It is your gut-reaction to situations. It is when you see something happening and it *feels wrong*. This is an indication that more analysis is needed.

# *Facts* can be elusive. Do you know all you need to know to make a decision? Is what you know true? Is the information distorted or has the situation been framed in some way to obscure or downplay the ethical issue? What questions need to be asked? What are the larger issues? What is influencing the situation? For example, a student may have found the answer key to an exam. Wanting to make friends, he or she tries to share it with you. When your moral radar sounds the alarm that it may not be right to take it since it would not right and you refuse, they may say things like “several other students are using it” or “students do this all the time” or “you have to do what is necessary to get the best grade – don't you want to get into college?”. These framings can reduce the moral intensity.

# Identifying *stakeholders* can be complex as it is easy to miss some at the moment a decision is needed. That’s why it is fine and sometimes needed to just stop and not make a decision until you are ready. Following the example above, you may already be thinking about the stakeholders like your friends who were not offered the exam solutions or the teacher who may find out. But what about your parents, family, others who may change their opinion of you if they find out, and even yourself as what if you then do not study and actually do not have the knowledge and skills the work would provide you that you will need for the next section or course?

# When thinking about the stakeholders and collective situation, you need to be aware of *situational factors* that may be in play. Such factors include things like what is motivating the behaviors of the stakeholders like conflicts of interest, what levels of influence do certain stakeholders have over others, what stakeholders are powerful and what systemic issues are involved that may be involved with the ethical issue but not directly in sight. For example, for the current example, systemic issues could be how could the answer key become available in the first place or is the student who obtained the answers and trying to share them isolated and using the situation to gain friends.

# Understanding the *values* at work in the ethical issue is key. Ethics emerges when values come into conflict. Some values can be elusive. For example, in the current case, many values are in conflict. The values of honesty and fairness are competing with accomplishment and wanting to retain the relationship with the person offering the exam solutions. Which would you value more?

# To help you, here is a list of some common values:

# Accomplishment, advancement, authority, autonomy, belonging to a group, beneficence, care, citizenship, compassion, control, duty, enjoyment, environment, equity, fairness, faith, family, freedom, friendship, happiness, honesty, justice, life, loyalty, meaning, nonmaleficence, opportunity to speak/express, peace, pleasure, power, profit, recognition, reparation, safety, sanctity, security, self-esteem, success, truth, unity, voice, wealth.

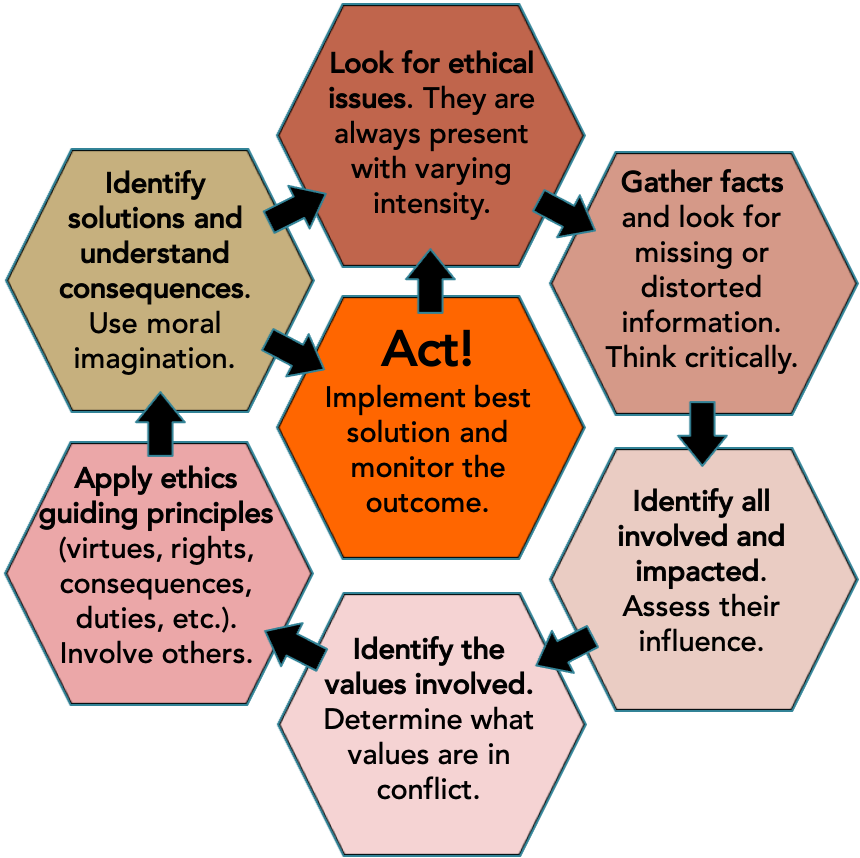
# It is also a good idea to *seek assistance* when you are trying to make the right decision. You should look to people you trust and respect, and if you are afraid to talk about what is happening for any reason, it is a sign that the ethical issue is real and needs attention. You should never be afraid to speak about things that are going on in your life. Groups generally make better decisions than individuals, so talking to ethical, trustworthy people almost always helps.

# Formulating *solutions* is tough. Often some values are given a lower priority than others. This is where the *ethical frameworks* can help. Would you be a person of good character if you used the exam solutions (Virtue ethics)? Would it violate any rules that you have a duty to uphold like you will not cheat and will not succumb to peer pressure (Deontology)? Does the outcome produce the most good for the most people, i.e., a few students get a good grade, but others do more poorly by comparison and those who cheated do not really know the material (Utilitarianism)? Did your actions violate anyone’s rights like the right of your classmates to have a fair exam (Rights-based ethics)? And how will your relationships with your classmates, friends, parents and others who find out you cheated (Care-based ethics)?

# How do you *monitor the outcome* and *avoid future problems*? Perhaps informing the teacher that the answer key is available (even anonymously) so no one can cheat in the future? Or changing the way exams are created and solution keys stored so it would be impossibkle for a student to obtain them.

# This is the ethical decision-making process. Here is a graphic for your use!

# What do you think? Is anything missing? Can it be improved? Start practicing today!

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**Worksheets:**

NOTE: For all exercises, students can be asked to first complete the exercise and develop a solution individually, then in a group where the group must collectively decide on a solution. If there is disagreement in the group, they must be able to decide, perhaps using a final vote to select the best option. If this format is used you may add the following **question** at the end:

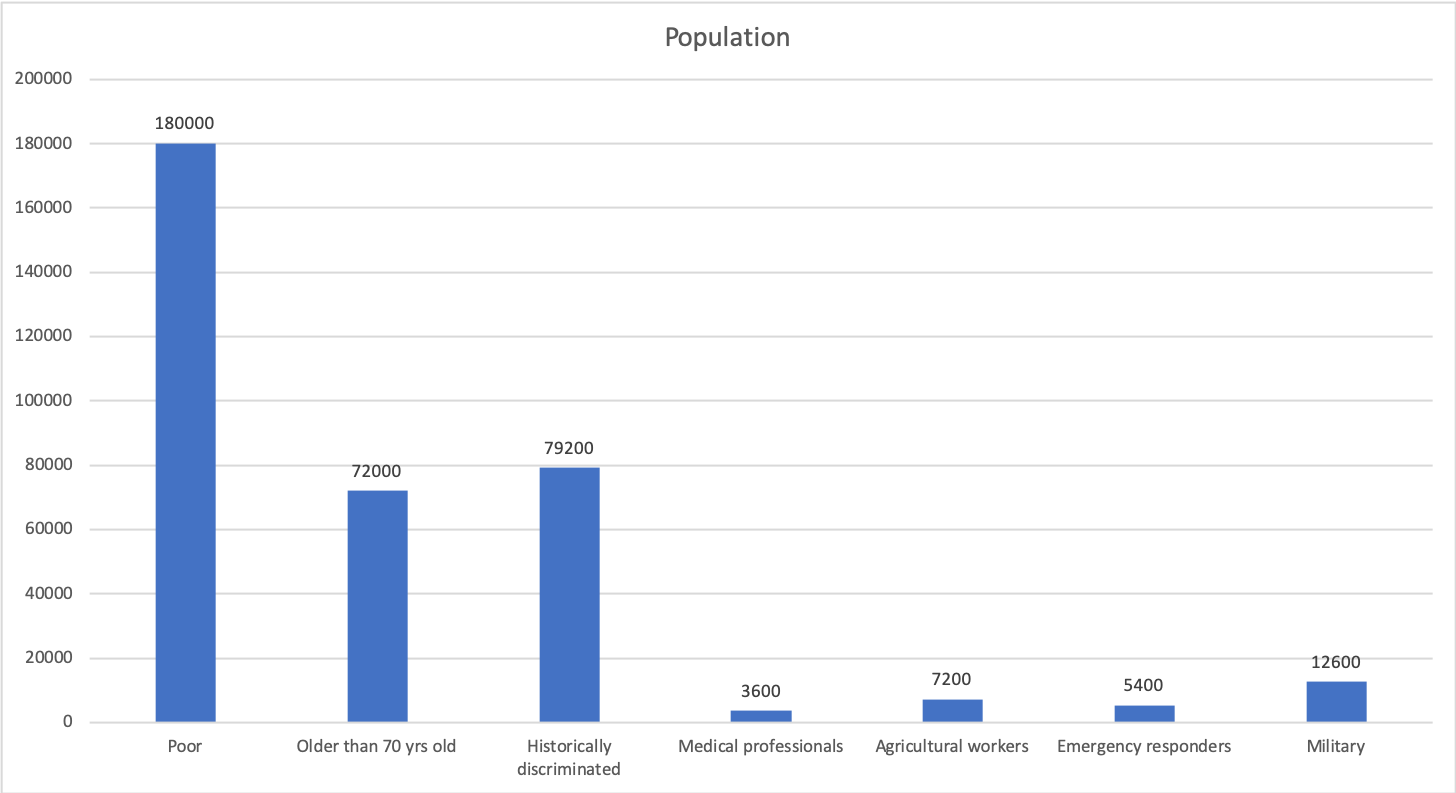
**Question:** Did your opinion change when completing the exercise in a group? If so, why? Did you reprioritize your values? Did you learn something you did not know previously? Did you gain a different perspective? How were you influenced?

**Ethics case study 1: What does fair mean when distributing treatment for a pandemic?**

**Ethical decision to be made:** A vaccine distribution plan must be developed where the number of needed vaccinations significantly exceeds the supply.

**Background**:

* You are the public health official for a country of 360,000 people.
* You need to develop a plan to allocate vaccines to the citizens.
* Only one pharmaceutical company has an approved vaccination.
* Currently it can produce 100 vials of vaccine per day.
* But it will be take greater than 12 months before another producer comes online to manufacturer the vaccination.
* Here is a bar chart of key demographic values you will use to allocate the vaccine.
* People over the age of 70 years old are twice as likely to die from the virus.
* Financially poor people are at high risk of contracting the virus due to living conditions.
* Agricultural workers are needed to provide food to the population.
* Medical professionals and Emergency workers are needed to care for both pandemic and non-pandemic patients.
* Military personnel are critical to protect against aggressive neighboring countries.



**Analysis questions:**

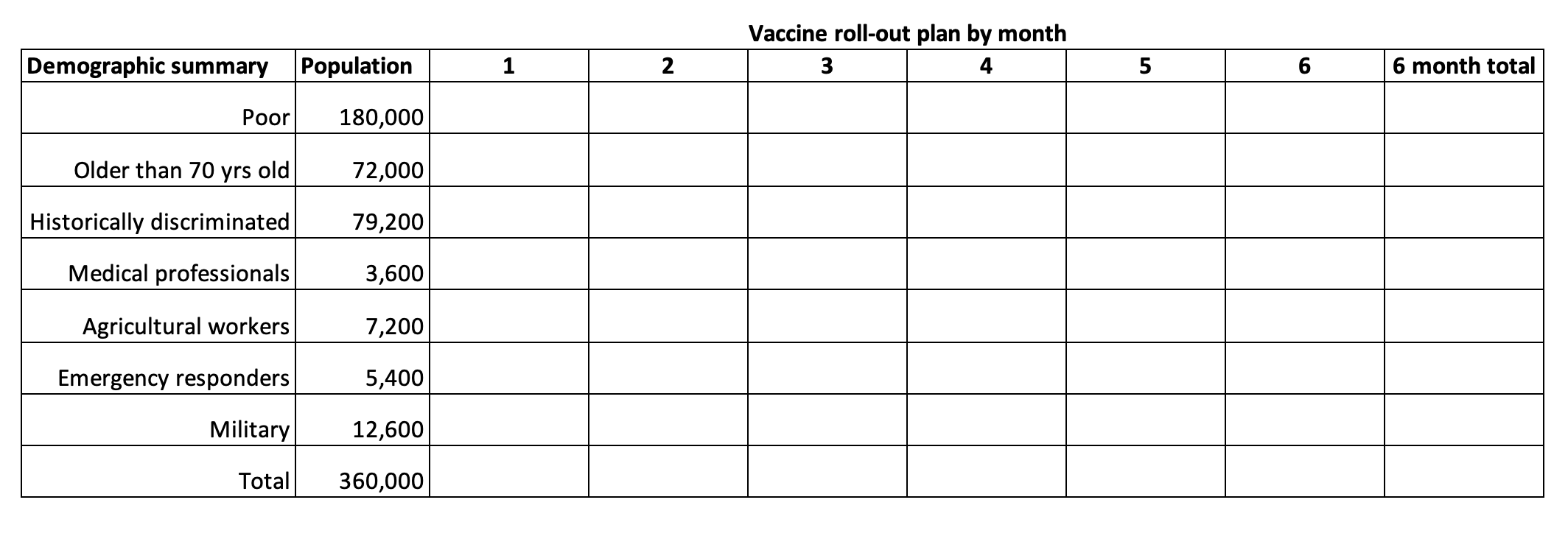
1. If 100 vials of vaccine are produced each day, how many vials are available each month?
2. How many months are required to vaccinate the entire population?

**Ethical decision-making process:**

1. What are the ethical issues? What does not feel right?
2. What are the relevant facts? Is anything missing or distorted?
3. Who are the stakeholders? What are their influence on the situation?
4. What are the situational factors?
5. What are the values in conflict?
6. How do the ethical frameworks apply? Is anyone/any group not acting with virtue? Are any ethical rules being violated? How would the most benefit to the largest number of people be achieved? Should only people be considered?
7. What are possible solutions? What are the consequences? What must be monitored in the future?
8. What was your final solution and justification?

**Implement your solution:**

1. Complete the table below that will determine how to ration the vaccine to the citizens.



**Ethics case study 2: Using animals to grow organs for people**

**Ethical decision to be made:** Should animals be genetically modified to grow organs for transplantation into humans? If so, which animals?

**Background:**

* Animals can be genetically modified to grow human compatible organs to be used for transplantation.
* Such processes can be applied to many types of animals.
* Different animals have different cognitive capabilities. For example, primates like chimpanzees can even engage in moral reasoning.



[**http://www.luvbat.com/picture-6991-chimpanzee-holding-flowers-.html**](http://www.luvbat.com/picture-6991-chimpanzee-holding-flowers-.html)

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[**https://www.topmarks.co.uk/spring/BabyAnimals.aspx?age=ks2**](https://www.topmarks.co.uk/spring/BabyAnimals.aspx?age=ks2)

[**https://pixels.com/featured/the-wild-horse-family-portrait-saija-lehtonen.html**](https://pixels.com/featured/the-wild-horse-family-portrait-saija-lehtonen.html)

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**Ethical decision-making process:**

1. What are the ethical issues? What does not feel right?
2. What are the relevant facts? Is anything missing or distorted?
3. Who are the stakeholders? What are their influence on the situation?
4. What are the situational factors?
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7. What are possible solutions? What are the consequences? What must be monitored in the future?
8. What was your final solution and justification?

**Implement your solution:**

1. What animals should be used for organ farming. Justify your answer.

|  |  |  |
| --- | --- | --- |
| **Animal** | **Should they be used?** | **Any constraints or comments?** |
| chimpanzee |  |  |
| gorilla |  |  |
| baboon |  |  |
| cow |  |  |
| horse |  |  |
| pig |  |  |
| dog |  |  |
| cat |  |  |

**Ethics case study 3: What would you sacrifice?**

**Ethical decision to be made:** What would you sacrifice in the situations below?

**Background:**

At various times in your life you may confront a situation where you may need to sacrifice something for the good of another. Would you do it? Let’s look at three cases:

1. Someone needs a kidney: What if you learned someone needed a kidney or they would die? What if they asked directly? Who would you give your kidney to?
2. Your safety: You see a person starting to drown in a lake. Would you jump in to save them? You only have a few seconds to choose.
3. $200: You find out a person needs $200 for something important and not frivolous. Would you give it to them? You were saving the $200 for a new game and wireless earbuds!

**Ethical decision-making process:**

1. What are the ethical issues? What does not feel right?
2. What are the relevant facts? Is anything missing or distorted?
3. Who are the stakeholders? What are their influence on the situation?
4. What are the situational factors?
5. What are the values in conflict?
6. How do the ethical frameworks apply? Is anyone/any group not acting with virtue? Are any ethical rules being violated? How would the most benefit to the largest number of people be achieved? Should only people be considered?
7. What are possible solutions? What are the consequences? What must be monitored in the future?
8. What was your final solution and justification?

**Implement your solution:**

1. What would you sacrifice? Complete the table below. Justify your answers.

|  |  |  |  |
| --- | --- | --- | --- |
| **Person** | **Would you sacrifice or risk?** | | |
|  | **a kidney** | **your safety** | **$200** |
| Parent |  |  |  |
| brother/sister |  |  |  |
| daughter/son |  |  |  |
| cousin |  |  |  |
| friend |  |  |  |
| acquaintance |  |  |  |
| someone you did not know |  |  |  |
| a child you did not know |  |  |  |
| an older person you did not know |  |  |  |
| someone who hurt you |  |  |  |
| enemy |  |  |  |

**Optional classroom discussion:**

Students can share their answers to the class or in small groups. Students can reflect on their discussion:

* Does it feel uncomfortable admitting you may not help certain people?
* If someone in the class disagrees with your responses, what values were in conflict?
* Did you change your mind after hearing someone else’s opinion? Why?
* If you still disagree with the other person, do you respect them the same? More? Less? Why?

**Ethics case study 4: A frack-tured farm**

**Ethical decision to be made:** Should the farm owners allow the company to set up a gas well on their property?

**Background:**

A mid-sized 460 acre farm in NE PA located directly adjacent to a small town of ~1200 people is having financial difficulty. They are barely profitable and profits are declining suggesting in 2-3 years the farm will be losing money each year resulting in it closing business. The farm employs 25 people plus family members.

The owners of the farm were approached by a large oil and gas company to obtain rights to recover natural gas located beneath the surface of their land using the process of hydraulic fracturing (fracking). The company would require 4-6 acres and road access to an optimal spot for drilling. A drilling and fracking rig plus a retention pool for the toxic fracking flowback fluid will be placed on the land. The oil and gas company assure the owners the process is safe and will not contaminate the water or land. The projected revenue from the new business will substantially increase the farm owner's income. With this income, the family may be able to invest into the farm infrastructure making the farm business profitable again, potentially allowing them to retain their employees or grow their employee base.

Hearing about this situation, a group of towns people investigate and learn that similar drilling operations from the same company in that region have resulted in well water contamination for properties near the fracking site. This contamination prevented owners from drinking the water or using it for bathing and other purposes. Owners of those properties have approached the oil and gas company about the situation and the oil and gas company denied any connection between their operations and the contamination. There are no known means of cleaning the contaminated water. Moreover, laws, specifically the Energy Policy Act of 2005, exempt oil and gas companies from being liable for drinking water contamination due to hydraulic fracturing. A more detailed investigation reveals that many other drilling operations are not contaminating nearby wells in other locations.

Given the proximity of the farm to the town, and the prevalence of well water use for several dozen town residences and businesses, the group petitions the farm owners to reject the oil and gas proposal.

**Ethical decision-making process:**

1. What are the ethical issues? What does not feel right?
2. What are the relevant facts? Is anything missing or distorted?
3. Who are the stakeholders? What are their influence on the situation?
4. What are the situational factors?
5. What are the values in conflict?
6. How do the ethical frameworks apply? Is anyone/any group not acting with virtue? Are any ethical rules being violated? How would the most benefit to the largest number of people be achieved? Should only people be considered?
7. What are possible solutions? What are the consequences? What must be monitored in the future?
8. What was your final solution and justification?

**Implement your solution:**

1. Should the farm owners allow gas drilling and fracking on their land? Justify your answer.

**Ethics case study 5: Improving crop yield**

**Ethical decision to be made:** Should the farm owners use the chemical treatment to enhance their crop yield?

**Background:**

A major chemical company invents a new chemical plant-growth regulator that can improve crop yield by 20%. Such an increase in yield can help struggling farmers to increase their revenue from their yearly crops, creating and retaining jobs. The substance is new but has chemical similarity to other substances known to cause long term health effects in humans. When used, the substance has high mobility and can enter waterways and thus water that can be used for drinking and other agricultural and industrial applications. The new crop yield product could also generate significant revenue for the chemical company, creating new jobs.

**Ethical decision-making process:**

1. What are the ethical issues? What does not feel right?
2. What are the relevant facts? Is anything missing or distorted?
3. Who are the stakeholders? What are their influence on the situation?
4. What are the situational factors?
5. What are the values in conflict?
6. How do the ethical frameworks apply? Is anyone/any group not acting with virtue? Are any ethical rules being violated? How would the most benefit to the largest number of people be achieved? Should only people be considered?
7. What are possible solutions? What are the consequences? What must be monitored in the future?
8. What was your final solution and justification?

**Implement your solution:**

1. Should the farm owners use the chemical treatment to enhance their crop yield? Justify your answer.