NSTA Web Seminar:
Exploring Bioethics
Developed by NIH and EDC
Presented by Liz Crane, Brookline HS, MA
Thursday, March 26, 2009
6:30 p.m. to 8:00 p.m. Eastern time
Exploring Bioethics

Six-part curriculum supplement for grades 9 -12 developed by:

The National Institutes of Health
and
Education Development Center, Inc.,
Newton, MA
Today’s Webinar

I. What is *Exploring Bioethics*?

II. Organ Allocation and Fairness

III. Why teach bioethics?

IV. How can bioethics be effectively taught and incorporated into the curriculum?

V. What challenges arise when teaching bioethics?
I. “Exploring Bioethics”

- **Introductory Materials**
  - Overview regarding bioethics, teaching strategies, alignment to standards, and supplementary readings and resources

- **Six 3-day modules**
  - Teaching sequence for each day
  - Masters for all handouts
  - Teacher support materials (supplementary content background)
Six 3-day Modules

• Bioethics Concepts and Skills
• Balancing Individual and Community Claims: Establishing State Vaccination Policies
• Allocating Scarc Resource: The Case of Organ Transplantation
• Ethical Issues in Genetic Testing
• Research Ethics: The Power and Peril of Human Experimentation
• Modifying the Natural World: Human Responsibilities toward Animals
Does anyone have a question about the organization or contents of the supplement? Let’s pause for a few questions.
Framework for Each Module

1. What is the ethical question?
2. What are the relevant facts?
3. Who or what could be affected by the decision?
4. What are the relevant ethical considerations?
   - respect for persons
   - minimizing harms while maximizing benefits,
   - fairness
   - authenticity, responsibility/stewardship, integrity
We will now apply the framework to selected parts of “Allocating Scarce Resources: The Case of Organ Transplantation.”
II. Organ Allocation and Fairness

Case Study

• One liver available
• 4 possible recipients
• Ethical Question: You are a member of a hospital committee with an important decision to make. How can this liver be most fairly distributed?
<table>
<thead>
<tr>
<th>4 Possible Recipients</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anita</strong></td>
</tr>
<tr>
<td><strong>Age</strong></td>
</tr>
<tr>
<td><strong>Reason</strong></td>
</tr>
<tr>
<td><strong>Personal Info</strong></td>
</tr>
<tr>
<td><strong>Family Info</strong></td>
</tr>
<tr>
<td><strong>When Listed for Transplant</strong></td>
</tr>
</tbody>
</table>
## Your first reaction: Who should receive the liver?

<table>
<thead>
<tr>
<th></th>
<th>A. Anita</th>
<th>B. Mario</th>
<th>C. Emily</th>
<th>D. Luke</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>19 yrs</td>
<td>6 months</td>
<td>36 yrs</td>
<td>54 yrs</td>
</tr>
<tr>
<td><strong>Reason</strong></td>
<td>Hepatitis C, b/c of surgery after car accident</td>
<td>Born without bile ducts</td>
<td>Autoimmune disorder</td>
<td>Likely b/c of alcoholism, related to PTSD after serving in war</td>
</tr>
<tr>
<td><strong>Personal Info</strong></td>
<td>College student Recently began smoking and drinking</td>
<td>Cannot afford child care, so works from home; no health insurance</td>
<td>Employed, but currently unable to go to work; expected to live for no more than 2 weeks w/o liver</td>
<td></td>
</tr>
<tr>
<td><strong>Family Info</strong></td>
<td>Parents Sibling Boyfriend</td>
<td>Very responsible family; extended family nearby</td>
<td>Husband died of cancer two years ago Two young children</td>
<td>Married Two grown children</td>
</tr>
<tr>
<td><strong>When Listed for Transplant</strong></td>
<td>Last week</td>
<td>Will be listed next week</td>
<td>Two months ago</td>
<td>Six months ago</td>
</tr>
</tbody>
</table>
Graph from polling question on previous slide
Fairness
ensuring that benefits, risks, resources, and costs are distributed equally
What criteria could we use to decide how to most fairly distribute the liver?
Two volunteers to add criterion and relevant fact(s)

<table>
<thead>
<tr>
<th>Possible Criteria</th>
<th>Relevant Fact(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whoever has waited the longest</td>
<td>Time spent on waiting list</td>
</tr>
</tbody>
</table>


## Sample Chart

<table>
<thead>
<tr>
<th>Possible Criteria</th>
<th>Relevant Fact(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whoever has waited the longest</td>
<td>Time spent on waiting list</td>
</tr>
<tr>
<td>Whoever is youngest</td>
<td>Age</td>
</tr>
<tr>
<td>Whoever is most sick</td>
<td></td>
</tr>
<tr>
<td>Whoever will live the longest with a transplant</td>
<td></td>
</tr>
</tbody>
</table>
Sample Chart, showing need for additional relevant facts

<table>
<thead>
<tr>
<th>Possible Criteria</th>
<th>Relevant Fact(s)</th>
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<tbody>
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<td>Whoever has waited the longest</td>
<td>Time spent on waiting list</td>
</tr>
<tr>
<td>Whoever is youngest</td>
<td>Age</td>
</tr>
<tr>
<td>Whoever is most sick</td>
<td>When patient will die without transplant</td>
</tr>
<tr>
<td>Whoever will live the longest with a transplant</td>
<td>Age, patient’s other medical problems, distance from transplant center</td>
</tr>
<tr>
<td></td>
<td>Anita</td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td><strong>How long will the person live post-transplant?</strong></td>
<td>33 years</td>
</tr>
<tr>
<td><strong>How long will person live without transplant?</strong></td>
<td>9 months, at most</td>
</tr>
<tr>
<td><strong>Geographic distance from transplant center</strong></td>
<td>Very close</td>
</tr>
</tbody>
</table>
Questions about case studies?
Suppose that the class generated the following possible criteria for organ allocation:

- Will live the longest
- Is most sick
- Is youngest
- Has been waiting the longest time
- Is “most valuable” to society or their families
- Is least responsible for their own disease
On the next slide, place a total of 3 pieces of clip art to show which criteria you think should be considered when creating a fair policy regarding organ allocation.
<table>
<thead>
<tr>
<th>Will live longest</th>
<th>Sickest</th>
<th>“Most valuable” to society/family</th>
</tr>
</thead>
<tbody>
<tr>
<td>Youngest</td>
<td>Waiting longest</td>
<td>Least responsible for own disease</td>
</tr>
</tbody>
</table>
Let’s pause two minutes for questions…
The United Network for Organ Sharing (UNOS)
UNOS Policies
pre-1998 and today

• Severity of patients’ illness important
• Waiting list used
• No mention of worth to society
• No use of a lottery system
• Youngest patients not prioritized
• Those who will likely live longest not prioritized
• First-come, first-served not used
• Those responsible for disease not penalized
UNOS Policy pre-1998

• Used four medical-urgency-status categories to prioritize patients
• Prioritized patients within local OPO areas
• Prioritized those who were on waiting lists longest
• Patients’ doctors’ subjective opinions were used
• Healthier patients could get livers before very sick patients
UNOS Policy today

- Prioritizes patients that will die within a week without a new liver
- Prioritizes all others based on blood tests that predicts risk of death over the next 3 months
- Patients with highest risk of dying receive next highest priority
- Ensures that sickest patients receive livers first, regardless of location
- Objective medical data and medical tests—not doctors’ opinions—guide decision making
Each student then compares the new and old UNOS policies and makes his/her own decision on which is most fair.
Let’s pause two minutes for questions…
III. Why teach bioethics?  
Which would serve as YOUR primary goal?

A. To advance science understanding
B. To prepare students to make informed, thoughtful choices
C. To enhance respectful dialogue among those with diverse views
D. To cultivate critical-reasoning skills
Graph, based on polling question on previous slide
IV. How can bioethics be effectively taught and incorporated into the curriculum?
Placement of Modules

Your goal will help inform where you choose to place the module in your curriculum.
Example: You want to use the “Balancing Individual and Community Claims” module. Your goal is to advance your students’ science understanding regarding the immune system and vaccinations.
The module could be placed in a number of locations…

• At the **beginning** of the immune system unit

• **Integrated** into the unit

• At the **end** of the unit
Using the module to advance your students’ science understanding

• At the **beginning** of the immune system unit
  – As a “hook” for upcoming content
  – To assess students’ prior content knowledge

• **Integrated** into the unit
  – When questions arise such as “How do vaccines work, anyway?”, take the opportunity to teach content along the way

• At the **end** of the unit
  – To assess students’ application of content
Let’s pause two minutes for questions…
V. What challenges arise when teaching bioethics?

A. Managing controversial discussions
B. Keeping the conversation “on track”
C. Keeping the conversation lively
D. Facilitating contributions from all students
On the next slide, use 2 pieces of clip art to show which you think will be your biggest challenges.
A. Managing controversy
B. Keeping “on track”
C. Keeping it lively
D. Facilitating contributions from all
Managing controversy

• Best to prevent disrespectful behavior in the first place
  – Establish ground rules ahead of time
• Reflect back what you think the student said
• Remind students to debate ideas, not people
Keeping “on track”

• Use the four-question framework, and refer to the poster provided
• Keep a written “parking lot” for interesting, but tangential, points
Keeping it lively

• Ask questions such as:
  • Can you think of any exceptions?
  • What would the opposition say? Why?
  • What is the strongest, opposing argument?
  • What is the weakest part of your argument?

• If dividing class into small groups, ask for a student volunteer in each group to be the “thorn”
Facilitating contributions from all students

- Recognize that contributions can come in many different forms
- Pause and invite “voices that have not yet been heard”
- After partner work, ask students to share an idea from their partner (and to give that person credit)
Let’s pause two minutes for questions?
How can you receive a copy of this free curriculum supplement?

Review and request from the NIH Office of Science Education [www.science.education.nih.gov](http://www.science.education.nih.gov)

Exploring Bioethics will be released in Summer 2009

It’s one of 17 different curriculum supplements
Special Thanks to NIH for sponsoring this Web Seminar!
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