Behavioral Economics and End-of-Life Decision Making

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A case

62 year-old male with Stage IIIb NSCLCa diagnosed 7 months earlier, presents with pneumonia, progresses to refractory septic shock, now with evolving ARDS 24 hours into his ICU course.

Following 12L crystalloid and stress-dose steroids, he remains on norepi (30 mcg/kg/min) and vasopressin (0.04 U/min).

On AC 30/420/12.5/100%:

- $C_{stat}$ 10, $P_{plat}$ 34, ABG 7.20/68/65
A case, continued

He has an advance directive (completed 10 years earlier) that:

1. designates his wife as DPA-HC

2. includes living will stating that “if there is no reasonable hope that I’ll regain the ability to live independently”, he does not want life-sustaining therapies

3. grants flexibility to his DPA-HC in applying the guidelines of the living will in a given clinical situation

His wife and 3 grown children arrive, and request an update on his status and guidance on what to expect in the next 12-24 hours.
A case, continued

- You explain all medical issues and answer all questions.

- They are all aware of his AD, but are unsure how to apply it in the current context.

- You wonder: Should I address CPR at this time, and if so, how?
Potential responses regarding CPR

A. “In situations like this, there is a risk that his heart may stop. If it did, would he want us to do chest compressions to try to restart it?”

B. “In situations like this, there is a risk that his heart may stop. If it did, our instincts as critical care doctors would be to do chest compressions to try to restart it. Is this what he would want?”

C. “In situations like this, there is a risk that his heart may stop. If it did, we would not routinely do chest compressions because they would be unlikely to restart the heart in this situation. Do you have any questions about this?”

D. Some other tangibly different approach
Option Attachment: When Deliberating Makes Choosing Feel like Losing

ZIV CARMON
KLAUS WERTENBROCH
MARCEL ZELENEBERG*
Default options and savings behavior

401(k) participation by tenure at firm

Fraction of employees ever participated

Tenure at company (months)

Hired before automatic enrollment
Hired during automatic enrollment
Hired after automatic enrollment ended

Madrian and Shea (2001)
REGULATION FOR CONSERVATIVES: BEHAVIORAL ECONOMICS AND THE CASE FOR "ASYMMETRIC PATERNALISM"
COLIN CAMERER, SAMUEL ISSACHAROFF, GEORGE LOEWENSTEIN, TED O’DONOGHUE, AND MATTHEW RABIN†

Judgment under Uncertainty: Heuristics and Biases
Biases in judgments reveal some heuristics of thinking under uncertainty.
Amos Tversky and Daniel Kahneman

Perception of Risk
PAUL SLOVIC

ANOMALIES IN INTERTEMPORAL CHOICE: EVIDENCE AND AN INTERPRETATION*
GEORGE LOEWENSTEIN AND DRAZEN PRELEC

The Framing of Decisions and the Psychology of Choice
Amos Tversky and Daniel Kahneman

Anomalies
The Endowment Effect, Loss Aversion, and Status Quo Bias
Daniel Kahneman, Jack L. Knetsch, and Richard H. Thaler
Pulling the Plug on Living Wills*
A Critical Analysis of Advance Directives
Mark R. Tonelli, MD
(CHEST 1996; 110:816-22)

Beyond Advance Directives
Importance of Communication Skills at the End of Life
James A. Tulsky, MD
 Patients and their families struggle with myriad choices

Controlling Death: The False Promise of Advance Directives
Henry S. Perkins, MD
Failures of advance directives are predictable failures of implementation.

1. Targeted too broadly
   - Current preferences (when healthy) don’t match future goals (when ill)

2. Purported benefits seen as attainable without ADs
   - Poor completion rates

3. Purported benefits misaligned with patients’ priorities
   - Overly aggressive care selected

4. Active choice required to receive comfort-promoting care
   - Preferences don’t influence care received

5. ADs not accessible to clinicians or surrogates
   - Difficulty condoning palliative care

6. Surrogates feel guilt & burden from decision-making
Explaining and surmounting the barriers

Principles of Behavioral Economics

Affective Forecasting Errors
- Targeted too broadly
  - Current preferences (when healthy) don’t match future goals (when ill)

Optimism bias
- Purported benefits seen as attainable without ADs
  - Poor completion rates

Present-biased preferences
- Purported benefits misaligned with patients’ priorities
  - Overly aggressive care selected

Focusing Effects
- Active choice required to receive comfort-promoting care
  - Preferences don’t influence care received

Default Options
- ADs not accessible to clinicians or surrogates
  - Difficulty condoning palliative care

6. Surrogates feel guilt & burden from decision-making

Halpern SD. Shaping end-of-life care: Behavioral economics and advance directives. (under review)
RCT of default options in real ADs

Screened: 14,928

Ineligible: 14,577 (97.6%)
Missed: 27 (8%)

Recruited by RN: 324 (92%)

Consent: 111 (34%)
Refuse Consent: 213 (66%)

Randomization

Comfort Default
Life-Extension Default
Neutral Default

Assess Patient Satisfaction with Advance Care Planning
Standard AD (surrogate default)

Overall Goals of Care

________ I want my healthcare providers and agent to treat me by helping relieve my pain and suffering, even if that means that I may not live as long.

OR

________ I want my healthcare providers and agent to treat me by helping me to live as long as possible, even if that means that I may have more pain or suffering.

OR

________ I do not want to specify one of the above goals. My healthcare providers and agent may direct the overall goals of my care.

In addition, I want my healthcare providers and agent to focus on the following goals (optional):

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Comfort default

Overall Goals of Care

X I want my healthcare providers and agent to treat me by helping relieve my pain and suffering, even if that means that I may not live as long.

*If you prefer to choose a different overall goal of care, cross out the lines above and place your initials by one of the other options below:*

_____ I want my healthcare providers and agent to treat me by helping me to live as long as possible, even if that means that I may have more pain or suffering.

OR

_____ I do not want to specify one of the above goals. My healthcare providers and agent may direct the overall goals of my care.

In addition, I want my healthcare providers and agent to focus on the following goals (optional):

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Figure 2. Overall plans of care chosen by seriously ill patients in advance directives

- Comfort Default: 73%, p = 0.317
- Standard AD: 58%, p = 0.047
- Life-Extension Default: 31%, p = 0.008

Percentage of patients selecting comfort-oriented plans of care.
Preferences for specific interventions

Figure 3. Choices of seriously ill patients to forgo potentially life-sustaining interventions

- Feeding tube
- Dialysis
- Mechanical ventilation
- ICU admission
- CPR

* *p < 0.05 vs. life-extension"
Satisfaction with end-of-life care plans

Table 1. Satisfaction with End-of-Life Care Planning by AD Default Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Patients (n=48)</th>
<th>Global Satisfaction</th>
<th>p-value*</th>
<th>Mean Satisfaction#</th>
<th>p-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comfort default</td>
<td>13</td>
<td>4.81</td>
<td>_</td>
<td>4.70</td>
<td>_</td>
</tr>
<tr>
<td>Standard (surrogate default)</td>
<td>19</td>
<td>4.53</td>
<td>0.15</td>
<td>4.52</td>
<td>0.30</td>
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<tr>
<td>Life-extension default</td>
<td>16</td>
<td>4.50</td>
<td>0.18</td>
<td>4.49</td>
<td>0.14</td>
</tr>
</tbody>
</table>

*compared with comfort default using t-tests; #mean among 13 items; scores range 1-5, with 5 = “completely satisfied”
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We are like chameleons; we take our hue and the color of our moral character from those who are around us.

–John Locke