Elucidating Mechanisms of Physician-Surrogate Discordance about Prognosis in ICUs

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Disclosures

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- Greenwall Foundation
Overview

✿ Examine whether the traditional explanations fully explain the high prevalence of physician-surrogate discordance about prognosis in ICUs.

✿ Present data supporting the notion that differences of opinion, optimism bias, and performative optimism are also at play.
Is There a Problem with Effectiveness of Discussions about Prognosis?

Expectations and outcomes of prolonged mechanical ventilation*

Christopher E. Cox, MD, MPH; Tereza Martinu, MD; Shailaja J. Sathy, MD; Alison S. Clay, MD; Jessica Chia, MD; Alice L. Gray, MD; Maren K. Olsen, PhD; Joseph A. Govert, MD; Shannon S. Carson, MD; James A. Tulsky, MD

“Most surrogates reported high baseline expectations for 1-yr patient survival, functional status, and quality of life. Surrogate-physician pair concordance in expectations was poor (all K<0.08)…”

Azoulay E. Crit Care Med. 2004
SUPPORT. JAMA. 1995
Lee SJ. JAMA. 2001
Mack JW. J Clin Onc. 2007
Does Prognosis Influence Treatment Decisions?

**RCTs**
- Murphy DJ. NEJM 1994
- Volandes AE. BMJ 2009

**Observational studies:**
- Fried TR. NEJM. 2002
- Silveira MJ. NEJM. 2010
- Lloyd CB. Crit Care Med. 2004
- Mitchell SL. NEJM. 2009
A Simple Conceptual Model

No disclosure about prognosis \rightarrow \text{Discordance about prognosis}
I Shouldn't Have Had To Beg for a Prognosis

Aug. 22, 2005 issue - I was once a stalker. My victims—yes, there were several—were high on the social scale, but they were not celebrities. They were doctors....
Claim: There are substantial cognitive, emotional and existential issues that impede whether/how well physicians disclose prognostic information.
**Design:** Prospective multi-center, cross sectional study of audiotaped physician-family discussions about whether to limit life support

**Setting:** 4 Seattle-area hospitals

**Subjects:** Families and clinicians of 51 critically ill patients (80% mortality)

**Method:** investigators coded all MD statements predicting patients’ future.

<table>
<thead>
<tr>
<th>At least 1 prognostic statement by MD? (No. %)</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 (98%)</td>
<td></td>
</tr>
</tbody>
</table>

| Number of prognostic statements (mean ± SD) | 9.4 ± 6.4 |

White DB, Crit Care Med, 2007
Do intensivists discuss prognosis in ICUs?

Prognostic information was defined as “statements of expected course of illness, prospect of survival or recovery, or statements of uncertainty about the future.”

LeClaire M. Chest 2005
Another Simple Conceptual Model

Surrogates can’t comprehend the information (anxious, overwhelmed, too complex) → Discordance about prognosis
Understanding of Prognosis Among Parents of Children With Cancer: Parental Optimism and the Parent-Physician Interaction

Jennifer W. Mack, E. Francis Cook, Joanne Wolfe, Holcombe E. Grier, Paul D. Cleary, and Jane C. Weeks

Understanding of Prognosis and Goals of Care Among Couples Whose Child Died of Cancer

Kelly E. Edwards, Bridget A. Neville, Earl F. Cook Jr, Sarah H. Aldridge, Veronica Dussel, and Joanne Wolfe

Understanding of Prognosis Among Parents of Children Who Died of Cancer
Impact on Treatment Goals and Integration of Palliative Care
A Randomized Trial of Two Methods to Disclose Prognosis to Surrogate Decision Makers in Intensive Care Units

Susan J. Lee Char¹, Leah R. Evans², Grace L. Malvar³, and Douglas B. White⁴

1. Can surrogates in ICUs comprehend physicians’ prognostications?

2. Are quantitative statements better understood than qualitative statements?

**Design:** RCT of 169 surrogates of critically ill incapacitated surrogates.

**Intervention:** Randomized to view 1 of 2 versions of simulated ICU family conference; varied only by qualitative vs quantitative prognostic statement.

Char S. AJRCCM. 2010
What do you think the doctor thinks are the chances that the patient will survive this hospitalization?

Outcome Measure 1: Surrogates’ Understanding of Physician’s Prognostications

No chance of survival

Will definitely survive

Surrogate’s understanding of MD’s estimate
Methods- Content of Simulated Family Conference

Introductions

Explanation of medical situation

Empathy, Conversation about patients as person

Disclosure of prognostic estimates

Deliberation & agreement on time limited trial

QUANTITATIVE VERSION:
“I would say he has about a 10% chance of surviving. Saying it another way, that means there’s about a 90% chance that he’s going to die.”

QUALITATIVE VERSION:
“I would say it’s very unlikely that he will survive. Saying it another way, that means it’s very likely he’s going to die.”

N=35 physicians
Chance of survival: 9% ± 4%
## Results

What do you think the doctor thinks are the chances that the patient will survive this hospitalization?

<table>
<thead>
<tr>
<th></th>
<th>Arm 1 Quantitative Language (10% chance of survival)</th>
<th>Arm 2 Qualitative Language (very unlikely to survive)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>17% ± 22</td>
<td>16% ± 27</td>
<td>p=0.62</td>
</tr>
</tbody>
</table>
Optimism Bias
Psychology of Risk Perception

- A cognitive bias that leads people to overestimate, in relation to others, their likelihood of experiencing positive outcomes and avoiding negative outcomes.

“Where all the women are strong, all the men are good looking, and all the children are above average.”
Physician-surrogate discordance about prognosis is “non-random”
Hypothesis 2: There will be discrepancies between surrogates’ understanding of the physician’s prognostications and their belief about the patient’s prognosis, in the direction of optimism.
Mechanisms of Physician-Family Discordance about Prognosis

What do you think are the chances that the patient will survive this hospitalization?

What do you think the doctor thinks are the chances that the patient will survive this hospitalization?
### Differences Between What Surrogates Hear and Believe

<table>
<thead>
<tr>
<th>Outcome measure</th>
<th>Outcome measure</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding of MD prognostication (what they heard)</td>
<td>Personal Belief about the Patient’s Prognosis (what they believed)</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>16% ± 19</td>
<td>23% ± 22</td>
</tr>
</tbody>
</table>
Mechanisms of Physician-Family Discordance about Prognosis

What do you think are the chances that the patient will survive this hospitalization?

What do you think the doctor thinks are the chances that the patient will survive this hospitalization?
## Reasons for Discordance

<table>
<thead>
<tr>
<th>Theme</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DIFFERENCES OF OPINION</strong></td>
<td>Because he’s looking better every day. Now he’s in there talkin’. From layin’ there in a coma.”</td>
</tr>
<tr>
<td><strong>OPTIMISM BIAS</strong></td>
<td>“I believe and hope that he tends to do better than people think he’s going to do.”</td>
</tr>
<tr>
<td></td>
<td>“They (doctors) go by the numbers, but they don’t know my Mom”.</td>
</tr>
<tr>
<td></td>
<td>“He’s a lot more stubborn than we all think he is. They don’t know that he’s stubborn.”</td>
</tr>
<tr>
<td><strong>FAITH &amp; MIRACLES</strong></td>
<td>“because [my estimate] is spiritual. Mine is based on belief”</td>
</tr>
<tr>
<td></td>
<td>“She’s very religious…we know that the doctors don’t have the final decision”</td>
</tr>
<tr>
<td></td>
<td>“God’s not ready for her yet.”</td>
</tr>
<tr>
<td><strong>OPTIMISM AS PERFORMATIVE</strong></td>
<td>I guess I understand that he may eventually die….. I guess I just have to hope more.</td>
</tr>
</tbody>
</table>
Conclusions

- The conventional explanation that discordance about prognosis is due to ‘simple misunderstandings’ is incomplete.

- There are emotional and psychological mechanisms that contribute to the discordance.

- Interventions that do not attend to these mechanisms are unlikely to fully address the problem.
Multivariate Analysis: Predictors of discrepancy between surrogates’ understanding and belief

<table>
<thead>
<tr>
<th>Relationship to patient</th>
<th>Coefficient</th>
<th>p-value</th>
<th>95% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spouse/partner</td>
<td>1 (reference)</td>
<td>0.18</td>
<td>-11.1 to 2.1</td>
</tr>
<tr>
<td>Child</td>
<td>-4.5</td>
<td>0.39</td>
<td>-3.6 to 9.1</td>
</tr>
<tr>
<td>Other</td>
<td>2.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Religiosity             | 1.6         | 0.24    | -1.1 to 4.2              |

<table>
<thead>
<tr>
<th>Trust in patient's physician</th>
<th>Coefficient</th>
<th>p-value</th>
<th>95% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.85</td>
<td>0.04</td>
<td>-1.7 to -0.04</td>
</tr>
</tbody>
</table>
Can ICU Outcomes be Predicted with Sufficient Accuracy to Inform Clinical Care?

- Cite Apache studies
- Cite physicians predictions
- Cite Provent

Caveats:

- Intensivists have slight pessimism bias
- Accuracy acceptable when reporting probability of survival, but high false positive rate when trying to predict death as binary outcome (will die, will survive). (Meadow W. Crit Care med 2010)