Slide 1: Quantifying Patient Preferences
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Slide 2: Elicitation vs Construction

- Patients frequently do not have preformed “informed” preferences
- Advocates of SDM have addressed this need by developing decision support tools

Slide 3: Tools

- Decision support tools cover many options
- The tools differ:
  - Format
  - Amount of information
  - Testimonials
  - Value clarification
  - Quantify preferences

Slide 4: Decision Tree
The decision tree shows 2 branches:

- Option 1 has two branches: 99% healthy; 1% dead.
- Option has one branch Moderate functional impairment

Slide 5: Conjoint Analysis

- Developed in 1970s
- “Conjoint”: buyers evaluate products or services based on conjoined attributes
- Extremely popular approach in marketing
- Works in “real world”
  - Data not predicted by managers

Slide 6: How Does Conjoint Analysis work?

- Breaks products down into attributes
- Asks you to make trade-offs
- Predicts:
  - How much you value each attribute
  - Which attributes most strongly influence your preference
  - Which product you should prefer

### Slide 7: Ex: Laptop

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Levels</th>
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<tbody>
<tr>
<td>Screen</td>
<td>15 Inches</td>
</tr>
<tr>
<td></td>
<td>12 inches</td>
</tr>
<tr>
<td>Price</td>
<td>$1300</td>
</tr>
<tr>
<td></td>
<td>$1800</td>
</tr>
<tr>
<td>Weight</td>
<td>4 lbs.</td>
</tr>
<tr>
<td></td>
<td>6 lbs.</td>
</tr>
</tbody>
</table>

### Slide 8: Valuation

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Level</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Screen</td>
<td>15 inches</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>12 inches</td>
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### Slide 9: Preferences

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<tr>
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<th>Price</th>
<th>Pref</th>
</tr>
</thead>
<tbody>
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<td>1</td>
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<td>6 lbs</td>
<td>$1800</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>15&quot;</td>
<td>6 lbs</td>
<td>$1800</td>
<td>7</td>
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<tr>
<td>3</td>
<td>12&quot;</td>
<td>4 lbs</td>
<td>$1800</td>
<td>33</td>
</tr>
</tbody>
</table>

Slide 10: Untitled
Pie Chart contacting the following labels: Cancer, Infertility, Infection, Efficacy, Mucositis, Cystitis, Nausea, Zoster, Alopecia

Slide 11: Types of Conjoint Analysis

- Full profile
- CBC, or choice-based conjoint analysis
- ACBC, adaptive choice-based conjoint analysis
- ACA, or adaptive conjoint analysis

Slide 12: ACA

- ACA:
  - Interactive – can handle a lot of attributes
  - Feedback in real time
  - Can be used at individual patient level
- 3 sets of questions to determine each patient’s value for differences in risks and benefits

Slide 13: Untitled
10-point scale. Left side of scale, “Not willing at all” Right side of scale, Extremely willing. Row captions: Cream, Pills, Injection, Exercise

Slide 14: Untitled
5-point scale anchored by 2 images. On the left an image of a cream; on the right, an image of an injection.

Slide 15: Untitled
10-point scale anchored by 2 images. On the left an image of an individual lifting bar-bells over his head; on the right, an image of an individual unable to lift bar-bells over his head.

Slide 16: ACA as a decision tool:

- Process: e.g. HCV
- Output:
  - Relative importances
  - Choices

Slide 17: What is important to me:
Bar chart showing these bars showing these labeled bars on the Y-axis: Type, Pain, Strength, Dyspepsia, Ulcer. Relative value of each is not provided.

Slide 18: Untitled
Scale of choices from worst to best: injections, capsaicin; Tylenol: Exercise; Exercise and NSAID

Slide 19: ACA as a decision tool:

- Process: e.g. HCV
- Output:
  - Relative importances
  - Choices
- Changing preferences

Slide 20: CBC example: These options prevent bone loss after menopause. If these were your only options which would you choose?
Four individual bar charts captioned: Infusion 1x/year; Exercise 3x/week; 1 pill 1x/week; none.

Slide 21: Best-Worst Scaling

- ~ MaxDiff
- Developed as alternative to rating and ranking tasks
- Prompts subjects to choose “best item” and/or worst item from series of sets

Slide 22: Untitled
Question from a survey, Please consider how important each of the following goals are for you in thinking about whether or not to start a biologic. Considering these four items, which is the most important to you?

- Increasing the chance that I will be able to stay independent
- Decreasing the amount of fatigue I have now
- Decreasing my chance of future joint damage
- Decreasing the amount of money I spend on medications

Slide 23: Deciding About Colorectal Cancer Screening

- Sensitivity of the test
- Possible tearing
- Capsule getting stuck

- Sedation
- Pain
- Prep
- Tube in rectum
- Stool card test
- Ride
- Swallow capsule
- Miss work

**Slide 24: Untitled**
A bar chart illustrating the differences between physician and patient scores on a variety of choices in making a health decision. Data on bars are not available.

**Slide 25: Advantages of BWS**
- Question format easy to understand
- Works across diverse backgrounds
- More efficient than rating scales
- < social desirability or extreme response
- Can handle large number of items

**Slide 26: Quantifying Preferences**
- Specific probabilities vs Gist
  - R example
- Average vs individualized probability estimates
  - Atrial Fibrillation

**Slide 27: Know the Numbers**
- Atrial Fibrillation
  - Individualized probability estimates

**Slide 28: Untitled**
Image of a data input form for a patient medical visit.

**Slide 29: Presentation of outcome data for all treatment options**
Six boxes containing 100 icons of faces. The boxes are stacked two-high and three wide. The columns are labeled, “no Medication,” “Aspirin,” “Coumadin.” The rows are labeled, “Stroke” and “Bleed.”