

**Table S1. Definitions, Rationales, and Methodological Comments about Balancing the Presentation of Options and Information in Patient Decision Aids**

| <b>Author, Year, Citation</b>                  | <b>Terms Used To Describe the “Balancing” Quality Dimension</b>  | <b>Definition of “Balance”</b>                                    | <b>Theoretical Rationale for Balance</b> | <b>Ways of Enhancing Balance</b>   |
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| Elwyn, O’Connor et al, 2006 [1]                | PtDAs are unbiased   | N/A   | N/A                                      | Use of patient stories in PtDAs is best avoided until their impact is better understood, as these could introduce bias due to self-identification.   |
| Elwyn, O’Connor et al, 2009 [2]                | The paper describes the development of IPDASi. The paper only mentions that balance is incorporated into the information dimension of IPDASi; there is no description of what constitutes balance. | N/A   | N/A                                      | N/A  |
| Evans, Elwyn et al, 2007 [3]                   | Balance of the information   | Equal emphasis on positive and negative information               | N/A                                      | Presenting contrasting information, opinions and experiences.  |
| Feldman-Stewart, Brennenstuhl et al., 2007 [4] | Accuracy<br>Balance / Imbalance  | The information must be relevant, accurate, updated and complete. | N/A                                      | <ol style="list-style-type: none"> <li>1. Describing treatment procedures for each option.</li> <li>2. Giving equal emphasis to false positives and false negatives.</li> <li>3. Labeling numeric values as estimates and providing further information about uncertainty upon patients’ request.</li> <li>4. Providing citations to information.</li> </ol> |

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| Griffith, Fichter et al., 2008 [5]       | Clarity and balance                   | Subjective measurement of PtDAs which avoids inclination to one decision. | N/A   | 5. Patient narratives to be avoided until the potential biasing effect is better understood.<br><br>For screening PtDAs, including a “no screening option”. |
| Martin, Brower et al., 2012 [6]          | Unbiased (accurate) information       | Accurate recall of information.   | N/A   | Including graphical images that provide a visual representation of numbers (e.g., pictogram or speedometer).  |
| Roberts, Raynes-Greenow et al., 2004 [7] | Unbiased information<br>Non-directive | No influence on the uptake of either option.                              | Informed decision making requires that information is unbiased, based on current high quality evidence, gives a balanced view and does not ignore uncertainties and scientific controversies. | N/A   |

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| Ubel, Smith et al., 2010 [8]   | Neutrality  | -Absence of cognitive biases<br>-Neutrality means avoiding value judgments in the information (e.g., suggesting through information presentation that risks or benefits are more important)<br>-Placing equal weight on equally important information. | Cognitive biases resulting from the order in which information is presented (i.e. recency and primacy effects) negatively affect knowledge, comprehension, perception of benefits and anxiety about side-effects.<br>Neutrality of information is essential to minimize such cognitive biases. | Presenting contextual risk information (e.g., information on competing risks the patients would face over the next five years, such as risks of experiencing colon cancer, a heart attack, or all-cause mortality). |
| Wills, Holmes-Rovner, 2003 [9] | Complete and balanced treatment-related information | Not explicitly defined   | Creating realistic expectations about choice consequences, improving understanding of probability information, and clarity about personal  | 1. Presenting probabilities as “natural frequencies;” e.g., “1 in 10 people”.<br>2. Use of absolute risk descriptions   |

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|  |  |  | <p>values are goals of balanced information provision.</p> <p>When information is not complete and balanced, people may ignore missing information, devalue a treatment option partially or completely, or make inferences about unavailable information based on the information they do have.</p> <p>Some aspects of comprehension may be influenced by information processing tendencies that are naturally associated with the central nervous system structure/function of humans.</p> | <p>and by provision of contextual risk information.</p> <ol style="list-style-type: none"> <li>3. Tailoring the format of risk communication to an individual's level of numeracy.</li> <li>4. Presenting information in both positive and negative frames.</li> <li>5. Use of graphics to present numerical probability information. However, some formats may result in misunderstanding of information.</li> <li>6. Placing information in context; "risk ladders" and "action standards" may serve as reference points.</li> </ol> |
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| Winterbottom, Bekker et al, 2008 [10] | Balanced information about the advantages and disadvantages of all the treatment options. | Presentation of information in a way that enables individuals to process this information without bias. | Rationale offered in terms of the heuristic/systematic information processing model. Patient narratives likely to encourage the use of heuristic processing. The context of the message, such as who is delivering the information, becomes more influential than the message content. | Use of patient narratives should be treated cautiously until their impact is better understood. |
| Zapka, Geller et al, 2006 [11]        | Complete and clear information; bias in selection and presentation of information         | Not explicitly defined  | No rationale provided other than stating that "what facts are presented to women about screening and how information is presented, is basic to informed decision-making".  | N/A   |
| Zikmund-                              | Balanced  | Presenting specific probability   | Patients have a natural inclination to   | Presenting risk information in graphic  |

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| Fisher, Ubel et al., [12] | presentation of risks and benefits | information regarding both good and bad health outcomes of their decisions and by describing these outcomes in imaginable and identifiable formats. | focus on the benefits of potential medical treatments. Balanced presentation of risks and benefits is essential as it leads to better comprehension and guards against undesirable biases. | format (e.g., pictographs) |
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