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Use of Novel and Social Elements of Value in Cost-Effectiveness Analysis

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Example of methods: Adherence improving factors

- CEAs that used adherence improving factors were identified by searching for phrases 'adherence improving' and 'improvement in adherence' **(Table 1)**.
- The text search identified 9 CEAs that used at least one of these phrases.
- We reviewed the text and determined that 8 out of 9 CEAs that used the key phrases quantified adherence improving factors and used it as an input in its ICER **(Figure 1)**.
- Within the 8 CEAs that quantified adherence improving factors, there were 17 cases where the influence of adherence improving factors on the cost, QALYs, and ICER were isolated and the precise influence was reported by the authors.
- We collected the change to incremental cost, incremental QALYs, and the ICER in all 17 cases and calculated the average changes **(Table 1)**.
- We found that including adherence improving factors caused an average 129.8% increase in incremental cost and an average 235.3% increase in incremental QALYs **(Table 2)**.
- Based on theory from the 2018 ISPOR report, we would expect this result because improvements in adherence costs more money over time but is expected to result in a larger improvement of health outcomes.
- We found that the including adherence improving factors caused an average 22.8% decrease in the ICER, making the intervention more cost-effective **(Table 2)**.
- Based on the changes to incremental costs and incremental QALYs, this is reasonable mathematically and expected based on the 2018 ISPOR report.
- We found that in 4 out of 17 cases, including adherence improving factors caused an ICER above $100k/QALY to fall below $100k/QALY, thus changing the cost-effectiveness decision. This is more likely to be the case with ICERs closer to $100k/QALY **(Table 2)**.

Additional methods notes

- We separated productivity into two categories, (1) human capital and (2) time cost, based on the methods of including productivity effects. Human capital accounts for productivity gains associated with general health improvements (long-term), while time cost accounts for cost of productive time lost while receiving health care (short-term). This was important to illustrate how these two methods differently influence the ICER **(Table 2)**.
- We chose a $100k/QALY benchmark due to standards in the United States. Using a $50k/QALY or $150k/QALY benchmark would have similar results.